

# **ECOS Compendium of State PFAS Actions**

By Sarah Grace Hughes, Senior Project Manager, & Julia Henderson, Project Associate, ECOS

# **Executive Summary**

States are leaders in per- and polyfluoroalkyl substances (PFAS) response across the United States. While the U.S. Environmental Protection Agency (EPA) and other federal agencies have taken notable actions on PFAS in the last decade, states play a critical role in implementing and enforcing federal rules and regulations, and have enacted their own legislation, policies, and directives to address PFAS across a wide range of programs.

This compendium outlines the various aspects of PFAS policies and science to showcase important information on state actions to protect human health and the environment. The paper offers a national summary of PFAS actions, as well as individual findings from 52 jurisdictions – specifically, the 50 states, the District of Columbia, and the Commonwealth of the Northern Mariana Islands (hereinafter, states). It is not a complete review of all research and information on PFAS; rather, the Environmental Council of the States (ECOS) hopes that states and other stakeholders will use this resource as a guide for where to acquire more information on a particular PFAS topic and to promote understanding of the important work underway.

ECOS appreciates the work of intern Robin Hébert who assisted in synthesizing the information gathered from states for this report. This project has been funded wholly or in part by the United States Environmental Protection Agency under assistance agreement 84049501 to the Environmental Council of the States. The contents of this document do not necessarily reflect the views and policies of the Environmental Protection Agency, nor does the EPA endorse trade names or recommend the use of commercial products mentioned in this document.

# Table of Contents

# National Summary of State PFAS Actions

Introduction	6
State Approaches to PFAS	6
Action Plans	6
Task Forces & Workgroups	8
Partnerships	9
PFAS Definitions	
Regulations & Legislation	
PFAS Regulations Across Environmental Media	
Drinking Water	
<u>Groundwater</u>	
Surface Water	
<u>Soil</u>	
<u>Air</u>	
Fish & Wildlife	
Biosolids	
PFAS Legislation	
Regulating PFAS as Hazardous	
Sampling, Source Identification, Monitoring, & Testing	
Statewide PFAS Sampling	
Public Water Systems	
Military Installations	
Blood Sampling	
Source Inventories	
Monitoring Activities	
Analytical Methods	
Remediation, Destruction, & Disposal	
Remediation Technologies	
Landfilling	
Quantifying PFAS Reduction	
PFAS in Products & Firefighting Foams	
Consumer Products	

Firefighting Foams	
AFFF Takeback Programs	48
Fluorine-Free Foam	49
AFFF Outreach	50
Managing PFAS in Biosolids & Air	51
Sewage Sludge and Biosolids	51
<u>Air Emissions</u>	53
Permitting	54
Risk Communication	64
Funding	65
Priorities for Bipartisan Infrastructure Law Funding	65
Funding for PFAS Research & Other Initiatives	76
Economic Impact & Cost Analyses	89
Legal Settlements	90
Next Steps	
State Priorities	
State Needs from the Federal Government	
State Needs from ECOS	92
Conclusion	

# State Pages

Alabama	95
Alaska	
Arizona	
Arkansas	
California	100
Commonwealth of the Northern Mariana Islands	
Colorado	
Connecticut	105
District of Columbia	107
Delaware	
Florida	110
Georgia	111
Hawaii	112

Idaho	
Illinois	
Indiana	
lowa	
Kansas	
Kentucky	
Louisiana	
Maine	
Maryland	
Massachusetts	
Michigan	
Minnesota	
Mississippi	
Missouri	
Montana	
Nebraska	
Nevada	
New Hampshire	
New Jersey	
New Mexico	
New York	
North Carolina	
North Dakota	
Ohio	
Oklahoma	
Oregon	
Pennsylvania	
Rhode Island	
South Carolina	
South Dakota	
Tennessee	
Texas	
Utah	

Vermont	159
Virginia	161
Washington	163
West Virginia	165
Wisconsin	166
Wyoming	167

# **Appendices**

I.	List of Acronyms	168
<b>II</b> .	ECOS PFAS Resources	170
	A. Paper: State Processes and Considerations for Setting State PFAS Standards	170
	B. Report: PFAS in Biosolids: A Review of State Efforts & Opportunities for Action	170
	C. Database: PFAS Industry Data	170
	D. <u>Resolution 21-1: Advancing Collaboration and Coordination on Per- and Polyfluon</u> <u>Substances</u>	<u>°oalkyl</u> 170
	E. ERIS PFAS Risk Communications Hub	171
	F. Other PFAS Resources	171
III.	Tables of State PFAS Regulations & Advisories	172
	A. Drinking Water	172
	B. <u>Groundwater</u>	189
	C. <u>Surface Water</u>	206
	D. <u>Soil</u>	217
	E. <u>Air</u>	232
	F. <u>Fish &amp; Wildlife</u>	237
	G. <u>Biosolids</u>	246

# **National Summary of State PFAS Actions**

# Introduction

PFAS are a group of synthetic chemicals that are used in a wide array of products. While certain legacy PFAS (e.g., perfluorooctanoic acid [PFOA] and perfluorooctane sulfonate [PFOS]) have been phased out of manufacturing due to scientific studies indicating potential health concerns and carcinogenic properties, many PFAS are still in use, and most of the chemicals have not been the subject of toxicological studies assessing the potential risks of exposure to human health or the environment or of federally-enforceable regulations. PFAS are abundant across environmental media and are difficult to destroy; therefore, there is a persistent "supply" of PFAS that maintain their carbon-fluorine chemical structures and potential toxicity, unlike many other organic compounds that degrade in the environment over time. These risks need to be better understood and addressed through state and federal actions. ECOS is working to bridge gaps in PFAS policies and intends that the information in this compendium will promote further information sharing and coordination among state and federal partners and other stakeholders.

# State Approaches to PFAS

This section focuses on some of the broader organizational aspects of PFAS work from a state environmental agency perspective. It examines which states have PFAS action plans or strategy documents, how agencies engage in task forces or workgroups, what partners a state collaborates with on PFAS activities, and how states define PFAS.

### **Action Plans**

Action plans lay out comprehensive strategies for protecting public health and the environment from known or potential risks of PFAS. State action plans may identify statewide or state environmental agency priorities, and lay out primary objectives to achieve, such as assessing health risks and minimizing exposure to PFAS. Common components of state PFAS action plans include recommendations and requirements for how to address exposures across environmental media and programs, conduct economic analyses, develop regulatory limits, explore toxicology, initiate statewide sampling protocols, or other topics. Many states receive stakeholder input on draft plans before finalizing their action plans, which may be statis, updated as need, or updated annually.

Twenty-two states have action plans or strategy documents, and nine other states are developing one.

State	Yes	No	In Development	State	Yes	No	In Development
Alabama		$\checkmark$		Missouri		$\checkmark$	
Alaska		$\checkmark$		Montana	$\checkmark$		
Arizona	$\checkmark$			Nebraska		$\checkmark$	
Arkansas		$\checkmark$		Nevada	$\checkmark$		
California		$\checkmark$		New Hampshire		$\checkmark$	
CNMI		$\checkmark$		New Jersey			$\checkmark$
Colorado	$\checkmark$			New Mexico		$\checkmark$	
Connecticut	$\checkmark$			New York		$\checkmark$	
DC		$\checkmark$		North Carolina	$\checkmark$		
Delaware			$\checkmark$	North Dakota		$\checkmark$	
Florida	$\checkmark$			Ohio	$\checkmark$		
Georgia			$\checkmark$	Oklahoma			$\checkmark$
Hawaii	$\checkmark$			Oregon			$\checkmark$
Idaho			$\checkmark$	Pennsylvania	$\checkmark$		
Illinois			$\checkmark$	Rhode Island	$\checkmark$		
Indiana		$\checkmark$		South Carolina	$\checkmark$		
Iowa	$\checkmark$			South Dakota			$\checkmark$
Kansas		$\checkmark$		Tennessee			$\checkmark$
Kentucky	$\checkmark$			Texas		$\checkmark$	
Louisiana		$\checkmark$		Utah	$\checkmark$		
Maine	$\checkmark$			Vermont	$\checkmark$		
Maryland	$\checkmark$			Virginia		$\checkmark$	
Massachusetts		$\checkmark$		Washington	$\checkmark$		
Michigan		$\checkmark$		West Virginia		$\checkmark$	
Minnesota	$\checkmark$			Wisconsin	$\checkmark$		
Mississippi		$\checkmark$		Wyoming	$\checkmark$		

### **State Action Plan Status**

This table shows the states with PFAS action plans, and those with action plans in development.

At the federal level, EPA in 2019 released its <u>PFAS Action Plan</u>, which focused on identifying PFAS, reducing exposure, understanding toxicity, conducting research, and providing technical assistance. Among other commitments, EPA pledged to make a regulatory determination for PFOA and PFOS under the Safe Drinking Water Act (SDWA), a positive determination of which initiates rulemaking to establish enforceable

8

National Primary Drinking Water Regulations. In 2021, EPA published its <u>PFAS Strategic Roadmap</u>, which became the agency's primary document outlining a whole-of-agency approach to addressing PFAS. The Roadmap outlined key objectives to achieve goals of investing in research and development, restricting PFAS from entering the environment, and remediating contamination and accelerating cleanup – specific activities that EPA addresses in its annual progress reports. Similarly, the U.S. Department of Defense (DoD) has a PFAS action plan focused on identifying and cleaning up contamination at military installations. The agency has a number of <u>policies</u>, directed by its PFAS <u>task force</u>, aimed at Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) compliance, cleanup prioritization, and assessment and monitoring activities. The U.S. Department of Energy (DOE) also has a <u>PFAS Strategic Roadmap</u> outlining its commitments to action from 2022-2025, including investigating PFAS contamination at DOE sites and researching current and past uses and known or potential releases of PFAS.

Links to state action plans can be found in the <u>State Pages</u> portion of this report.

# Task Forces & Workgroups

Forty-four states have a body charged with recommending or guiding state actions.



# PFAS Task Forces and/or Workgroups

This nested donut chart shows the number of states that have a PFAS task force or workgroup, and of those how many of the task forces or workgroups are single-agency or multi-agency.

These task forces or workgroups help state agencies stay coordinated by facilitating continued dialogue and by outlining which agencies and/or program offices are responsible for PFAS sampling of different media, or for other actions. The bodies may be formed within a specific program, encompass multiple programs, or include other agencies. Fourteen states have multi-agency task forces or workgroups in which the state environmental agency may coordinate closely with its health, agriculture, or other state agency counterparts on the state's overall PFAS response. These multi-agency workgroups, like the Michigan PFAS Action Response Team (MPART), may be established through executive orders or by state legislatures, for example, and tend to emphasize a statewide approach across programs that may extend beyond the environmental agency's purview and are designed to promote statewide coordination across numerous agencies and programs. Some states that have multi-agency task forces or workgroups noted that they also have an additional task force or workgroup within the environmental agency.

# **Partnerships**

State environmental agencies partner with other governmental and non-governmental entities on PFAS activities.



### **State PFAS Partnerships**

This graph shows the number of states with one or more PFAS partners in a given category. Most states noted that they engage with stakeholders in more than one of the categories above. Some partners may not have been mentioned in the survey responses and are missing from the total count.

In ECOS' outreach to states, about half of the states mentioned working directly with federal entities like EPA or the U.S. Geological Survey (USGS), as well as with DoD, the Centers for Disease Control and Prevention (CDC) and its Agency for Toxic Substances and Disease Registry (ATSDR), the U.S. Food and Drug Administration (FDA), the U.S. Departments of Agriculture (USDA), the U.S Fish and Wildlife Service (FWS), and the National Marine Fisheries Service (part of the National Oceanic and Atmospheric Administration, or NOAA). These federal partners may provide grants, technical assistance, and research support. Twenty-four states partner with academia, like local universities involved in PFAS-related research.

Twenty-one state environmental agencies partner with other state agencies, such as state departments of health, agriculture, natural resources, or transportation, or state fire marshals.

#### **Examples of Interstate Associations:**

National

- ECOS
- Interstate Technology and Regulatory Council (ITRC)
- Association of State Drinking Water Administrators (ASDWA)
- Association of Clean Water Administrators (ACWA)
- Association of State and Territorial Solid Waste Management Officials (ASTSWMO)
- National Association of Clean Air Agencies (NACAA)
- National Governors Association (NGA)

#### Regional

- Northeast Waste Management Officials' Association (NEWMOA)
- New England Interstate Water Pollution Control Commission (NEIWPCC)
- Northeast States for Coordinated Air Use Management (NESCAUM)
- Northeast Association of State Transportation Officials (NASTO)

#### **Examples of NGOs:**

- San Francisco Estuary Institute
- Water Environmental Research Institute of the Western Pacific
- Clean Water Action
- Connecticut Conference of Municipalities
- Delaware Nature Society
- Delaware Environmental Institute
- Maine Water Environment Association
- Georgia Association of Water Professionals
- Defend our Health
- Slingshot
- Ohio River Valley Sanitation Commission

organizations (NGOs), Non-governmental nonprofits, or task forces play important roles in facilitating dialogues and coordination for state environmental agencies on media-specific topics. The chart above and text boxes on this page show different relationships in which states are engaged. "Interstate association" refers to national or regional organizations whose role is to coordinate among states on shared issues, and serve as for convening important partners PFAS workgroups, webinars, or conferences. "Regional partnership" refers to groups that convene states with other stakeholders in a particular region of the country. For instance, the Great Lakes Consortium for Fish Advisories, a regional consortium among Illinois, Indiana, Michigan, Minnesota, New York, Pennsylvania, and Wisconsin, focuses on issues pertaining to fish consumption and water quality for states bordering one of the Great Lakes. Other NGOs not classified as an interstate association or regional partnership, such as the Delaware Nature Society and Georgia Association of Water Professionals, or professional associations, such as the Environmental Professionals Organization of Connecticut or Arizona Water Association, are specific to a single state.

#### **Examples of Regional Partnerships:**

- Great Lakes Consortium for Fish Advisories
- Great Lakes PFAS Task Force
- Ohio River Valley Water Sanitation
  Commission
- Susquehanna River Basin Commission
- Mid-Atlantic Regional Air Management Association
- Toxics Contaminant Workgroup (Chesapeake Bay Program)

## **PFAS Definitions**

Defining PFAS allows states and others to engage in conversations when considering PFAS in policy and other decisions. However, there exist many challenges and considerations when formally adopting or referencing specific definitions. Only twelve states currently have a formal PFAS definition, with seven others planning to formally define the compounds.

States, federal agencies, industry, academia, and intergovernmental agencies use an array of PFAS definitions that are dependent on the intended scope and application of certain compounds. Different definitions may lead to different conclusions on the total number of PFAS.

### Most Adopted and/or Referenced Definition:

Fluorinated organic chemicals containing <u>at least one</u> fully fluorinated carbon atom

Eighteen states have adopted or most often reference a broad, structure-based definition that considers PFAS to be *fluorinated organic chemicals containing <u>at least one</u> <i>fully fluorinated carbon atom*, or similar.<sup>1</sup> A few states that use this definition add that PFAS are *a class* of fluorinated chemicals, or that PFAS are *all manmade* chemicals with at least one fully fluorinated carbon atom. Rhode Island uses this definition but clarifies that the definition is *exclusive of organofluorine pharmaceutical products*; Virginia uses the *at least one fully fluorinated carbon atom* definition but specifies that PFAS are *chemicals with at least one fully fluorinated carbon atom* definition but specifies that PFAS are *chemicals with at least one fully fluorinated methyl or methylene carbon atom and any precursors of such substances*; and Montana references this definition but clarifies that it refers to *at least one alkyl carbon with its hydrogen atoms replaced by fluorine atoms*.

Three states have adopted or most often reference a definition that classifies PFAS as chemicals containing <u>at least two</u> fully fluorinated carbon atoms. The specific definitions are more nuanced than those for the *at least one fully fluorinated carbon* definitions:

#### 1

Any class of fluorinated organic chemicals containing <u>at least two</u> adjacent fluorinated carbon atoms, where one carbon atom is fully fluorinated and the other atom is at least partially fluorinated, excluding gases and volatile liquids, identified by a publicly owned treatment works in its pretreatment program for which there is an EPA approved testing method. 2

Non-polymeric perfluoroalkyl and polyfluoroalkyl substances that contain <u>at least two</u> fully fluorinated carbon 4 atoms, excluding gases and volatile liquids. 3

Contain the chemical structure unit R-(CF2)-C(F)(R') R," with two adjacent, fully fluorinated carbons where R, R', and R" represent any functional group or atom, except H/CI/Br/I (with a few noted exceptions; this description also includes substances with R-CF2-CF2-R' and CF3-CF2-R units. Note, R, R', R" can be the same or different atoms)

<sup>&</sup>lt;sup>1</sup> This widely-referenced definition is used by entities such as the Organization for Economic Co-operation and Development (OECD) and is also cited in the Fiscal Year 2020 National Defense Authorization Act (NDAA).

Other definitions include references to specific PFAS, describe them as chemicals used in certain processes and that make their way into the environment, or follow the ITRC-suggested definition, which states that, in general, PFAS are compounds characterized as having carbon atoms linked to each other and bonded to fluorine atoms at most or all of the available carbon bonding sites.<sup>2</sup>

States that have not yet adopted a definition for PFAS noted that adoption of a definition depends on regulatory requirements; enactment of state legislation; or EPA amending the Resource Conservation and Recovery Act (RCRA), TSCA Section 8(a) reporting rule, or other statutes or rules to include PFAS-specific regulations. There also may be challenges with adopting a definition as it could be program-specific or require consensus among multiple state agencies that deal with PFAS in different capacities. A few states noted that they do not want to adopt a definition that is inconsistent with that of EPA, and others stated that while they do not formally define PFAS, they list certain PFAS as individual compounds separately in state regulations.<sup>3</sup> A few states are not sure if they have plans to formally define PFAS. Details as to which states have formally adopted definitions and which definitions are referenced are in the <u>State Pages</u> portion of this report.

ITRC acknowledges in its PFAS Technical and Regulatory Guidance Document section on chemistry, terminology, and acronyms that inconsistent PFAS definitions may create challenges and confusion among regulators and regulated entities, alike.<sup>4</sup>

# **Regulations & Legislation**

This section highlights the different PFAS regulations and legislation, including information on which states regulate PFAS as hazardous under a state equivalent to CERCLA and/or RCRA.

# **PFAS Regulations Across Environmental Media**

Many federal, state, and international authorities have in recent years established various health-based regulatory values and evaluation criteria for certain PFAS. The largest focus has been on several of the contaminants in drinking water. In April 2024, EPA enacted a federally enforceable <u>National Primary</u> <u>Drinking Water Regulation</u> (NPDWR) under SDWA for <u>PFOA</u>, <u>PFOS</u>, perfluorohexane sulfonate (<u>PFHxS</u>), perfluorononanoic acid (<u>PFNA</u>), hexafluoropropylene oxide dimer acid (<u>HFPO-DA</u>, commonly known as

<sup>&</sup>lt;sup>2</sup> <u>Chemistry, Terminology, and Acronyms</u>, PFAS Technical and Regulatory Guidance Document, ITRC. ITRC is the national coalition focused on developing tools and strategies to effectively deploy innovative environmental technologies and is a program of the Environmental Research Institute of the States (ERIS) (and ECOS).

<sup>&</sup>lt;sup>3</sup> EPA has a structure-based definition of PFAS under the Toxic Substances Control Act (TSCA), and a slightly more inclusive, structure-based definition under the 2022 Drinking Water Contaminant Candidate List 5 (CCL5). The agency provides a large, publicly-available resource for PFAS structures and predicted properties in its <u>CompTox Chemicals Dashboard</u>, some definitions provided by which are designed to be broadly inclusive, and others, like that used under TSCA or the CCL5, are used for regulatory applications and may be more precisely worded.

<sup>&</sup>lt;sup>4</sup> <u>Chemistry, Terminology, and Acronyms</u>, PFAS Technical and Regulatory Guidance Document, ITRC.

GenX chemicals), and perfluorobutane sulfonic acid (PFBS).<sup>5</sup> There are currently no national, enforceable PFAS standards for other PFAS or for PFAS in other environmental media. ATSDR in 2021 finalized minimal risk levels for PFOA, PFOS, PFHxS, and PFNA, but these are not regulatory values and instead serve as screening tools to identify daily exposure estimates below which non-cancer effects are unlikely to occur. If no federal standard exists, states may rely on reference documents like EPA's <u>Regional Screening Levels</u> (RSL) list or may establish their own guidance.

Several states have established legally enforceable values (e.g., drinking water Maximum Contaminant Levels [MCLs]) or non-enforceable values (e.g., guidance values, screening numbers, advisories) for various PFAS across environmental media for which federally-promulgated standards do not exist. ECOS in 2020 published a paper, which is updated annually, on <u>Processes and Considerations for Setting State PFAS</u> <u>Standards</u> to outline the scientific and regulatory bases for how and why states set, or do not set, PFAS guidelines. In this national analysis, ECOS examines more broadly which states have existing or planned regulatory standards or advisory guidelines for different PFAS across drinking water, groundwater, surface water, soil, air, fish and wildlife, and biosolids.

Environmental Media	States with PFAS Regulations and/or Guidance	States with PFAS States with PFAS Regulations and/or Guidance Guidance States with PFAS Regulations and/or Planning to Implement New Regulations and/or Guidance	
Drinking Water	30	18	18
Groundwater	30	13	3
Surface Water	18	5	11
Soil	26	10	3
Air	8	1	0
Fish & Wildlife	21	1	5
Biosolids	10	0	1

#### States with Existing or Planned PFAS Regulations and/or Guidance

This table shows the number of states with regulatory or advisory guidance (left column) and the number of states without existing PFAS regulations and/or guidance that are planning to implement such limits (right column) for PFAS in different environmental media. Some of the states with PFAS regulations and/or guidance (left column) are also planning to implement new PFAS regulations and/or guidance, as shown by the number in the middle column.

<sup>&</sup>lt;sup>5</sup> In March 2025, the District of Columbia Court of Appeals granted EPA requests for 60-day stays on the NPDWR and on the listing of PFOA and PFOS as hazardous substances under CERCLA. The stays temporarily pause ongoing litigation challenging the regulations, which will be reviewed by the newly installed EPA leadership.

Below is the breakdown of the states identified above as having regulations and/or guidance.

Environmental Media	States with Only PFAS Regulations	States with Only PFAS Advisories	States with Both PFAS Regulations and Advisories
Drinking Water	; Water 18 10		2
Groundwater	18	9	3
Surface Water	9	8	1
Soil	11	12	3
Air	3	5	0
Fish & Wildlife	0	21	0
Biosolids	5	5	0

States with Existing PFAS Regulations, Guidance, or Both

This table shows the number of states with existing regulatory standards, advisory levels, or both regulations and advisory limits for PFAS in different environmental media.

A summary of nationwide regulations for each media is below, and media-specific tables of each state's regulations are in <u>Appendix III</u>.

# **Drinking Water**



### States with PFAS Guidelines in Drinking Water

This map shows the distribution of states with enacted or planned regulations and/or guidance for PFAS in drinking water.

Thirty states have guidance for one or more PFAS in drinking water. Eighteen states have regulatory standards, ten have advisory levels, and two have both regulatory and advisory limits. Eighteen of the 30 states with regulatory or advisory limits also plan to enact new guidance.

States with advisory levels may call them action levels, public health goals, notification levels, health risk limits, or remediation screening levels, for example, depending on state regulatory processes and histories with setting policy, which may direct toxicologists to use specific approaches or consider various factors in the development of such limits. Nine of the states (Massachusetts, Michigan, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Wisconsin) with regulatory standards have enacted MCLs (prior to the finalization of EPA's NPDWR).

Eighteen states that do not have guidance plan to enact a regulatory or advisory limit for PFAS in drinking water.

Many states have already implemented, or are in the process of implementing, the federal NPDWR, which sets legally enforceable MCLs for six PFAS in drinking water – PFOA, PFOS, PFHxS, PFNA, and HFPO-DA

- as contaminants with individual MCLs of four parts per trillion (ppt, also expressed as ng/L), 4 ppt, 10 ppt, 10 ppt, and 10 ppt, respectively, and PFAS mixtures containing at least two or more of PFHxS, PFNA, HFPO-DA, and PFBS, using a Hazard Index MCL of 1 (unitless) to account for combined and co-occurring levels of the contaminants. The final rule requires public water systems to complete initial monitoring for these PFAS by 2027, followed by ongoing compliance monitoring, as well as public notification requirements and a five-year deadline to begin implementing solutions to reduce PFAS if the MCLs are exceeded. Given the three-year deadline for monitoring from the time the rule was finalized, states have begun the process of planning for and/or adopting the NPDWR, which includes working through primacy challenges, adding these values to state regulations, and working with their water systems to establish a sampling and compliance plan, depending on state-specific rulemaking processes. All states will be required to lower their limits, if necessary, to meet the federal MCL values, and will be adopting these regulatory standards, if not already implemented. Wyoming does not have primacy (e.g., direct implementation) of the SDWA PWS Supervision Program and as such would not adopt the NPDWR; instead, the NPDWR is applicable and will be used in the state without the state formally adopting it.

## Groundwater



### States with PFAS Guidelines in Groundwater

This map shows the distribution of states with enacted or planned regulations and/or guidance for PFAS in groundwater.

Thirty states have guidance for one or more PFAS in groundwater. Eighteen states have regulatory standards, nine have advisory levels, and three have both regulatory and advisory limits. Thirteen of the 30 states with regulatory or advisory limits also plan to enact new guidance.

States have enacted groundwater quality standards, cleanup criteria, or similar guidelines for a number of PFAS. Many states also indicated that their existing or planned groundwater guidelines are reflective of the NPDWR, as groundwater is often used for drinking water purposes.

Three states that do not have guidance plan to enact a regulatory or advisory limit for PFAS in groundwater.

**Surface Water** 

#### ND OR ID WY IA PA OH IN MD МО KΥ DC ΤN ΟК NM AR SC GA AL MS States with PFAS LA Regulations and/or Guidance in Surface Water States Planning to Implement PFAS Regulations and/or Guidance in Surface Water States with Both Existing and Planned PFAS Regulations and/or Guidance in Surface Water

### States with PFAS Guidelines in Surface Water

This map shows the distribution of states with enacted or planned regulations and/or guidance for PFAS in surface water.

Eighteen states have guidance for one or more PFAS in surface water. Nine states have regulatory standards, eight have advisory levels, and one has both regulatory and advisory limits. Five of the 18 states with regulatory or advisory limits also plan to enact new guidance.

Many states noted that they will adopt or will consider adopting EPA's September 2024 <u>Final</u> <u>Recommended Aquatic Life Criteria and Benchmarks</u>, which established recommended freshwater criteria for short-term (acute) and long-term (chronic) exposure and saltwater benchmarks for acute exposures to PFOA and PFOS, as well as separate acute freshwater benchmarks for eight "data-limited" PFAS under Clean Water Act (CWA) Section 304(a)(3).<sup>6</sup> While not legally binding, states and authorized tribes can adopt the criteria into their water quality standards or adopt science-based criteria dependent on the local and site-specific conditions. Other states also stated their consideration of the NPDWR for surface waters that supply drinking water.

Eleven states that do not have guidance plan to enact a regulatory or advisory limit for PFAS in surface water.



### States with PFAS Guidelines in Soil

Soil

This map shows the distribution of states with enacted or planned regulations and/or guidance for PFAS in soil.

<sup>&</sup>lt;sup>6</sup> PFBA, perfluorohexanoic acid [PFHxA], PFNA, perfluorodecanoic acid [PFDA], PFBS, PFHxS, hexadecafluoro-2-decenoic acid [8:2 FTUCA], and pentadecafluorodecanoic acid [7:3 FTCA]

Twenty-six states have guidance for one or more PFAS in soil. Eleven states have regulatory standards, twelve have advisory levels, and three have both regulatory and advisory limits. Ten of the 26 states with regulatory or advisory limits also plan to enact new guidance.

States have adopted various soil screening levels, remedial action guidelines, reference values, cleanup objectives, or other types of guidelines for PFAS based on exposure scenarios (e.g., residential, commercial, industrial, for the protection of groundwater, etc.). Several states also have soil screening levels that reflect the PFAS included and/or values listed for residential and commercial/industrial exposures in EPA's <u>RSL</u> table.<sup>7</sup>

Three states that do not have guidance plan to enact a regulatory or advisory limit for PFAS in soil.



### States with PFAS Guidelines in Air

Air

This map shows the distribution of states with enacted or planned regulations and/or guidance for PFAS in air.

<sup>&</sup>lt;sup>7</sup> The RSLs, and state soil screening levels reflective of the RSLs, are advisory, as they are developed using risk assessment guidance from EPA's Superfund program and can be used under CERCLA as screening levels, rather than cleanup standards, to determine if further investigation is warranted at these sites.

Eight states have guidance for one or more PFAS in air. Three states have regulatory standards and five have advisory levels. One of the eight states with regulatory or advisory limits also plans to enact new guidance.

While there are currently no federal air emission standards for PFAS, EPA asserted in its PFAS Strategic Roadmap that the Agency is developing the technical basis for regulating specific PFAS as hazardous air pollutants in the future and is exploring opportunities to share data and approaches with states to address this source of PFAS pollution. A few states noted that once federal emission standards, standardized air testing, or inhalation toxicity values are available at the national level, they will take actions such as implementing regulations or adding certain PFAS to the toxic air pollutant lists. While it does not have a regulatory or advisory level for PFAS in air, California did note that its Air Resources Control Board's Chrome Plating Airborne Toxic Control Measures prohibit the use of fume suppressants that contain PFOS.

# Fish & Wildlife



### States with PFAS Guidance in Fish & Wildlife

This map shows the distribution of states with enacted or planned guidance for PFAS in fish & wildlife.

Twenty-one states have issued consumption advisories for one or more PFAS in fish and wildlife. One of the 21 states with an advisory also plans to enact new guidance.

The fish consumption advisories may apply to one section of a waterbody or may apply to a number of waterbodies statewide, and limits may be based on the waterbody, population consuming the fish, and/or fish species. Most states have issued fish consumption advisories for PFOS, but several other states have issued them for other PFAS, and a couple of states have issued consumption advisories for deer, turkey, beef, or milk. Some states indicated that they are evaluating or adopting criteria for fish consumption based on EPA's <u>Final Recommended Aquatic Life Criteria and Benchmark</u>, and another indicated that they adopt meal frequency criteria based on the Great Lakes Consortium for Fish Advisories' <u>Best Practice for PFOS</u> <u>Guidelines</u> document.

Five states that do not have guidance plan to issue consumption advisories for PFAS in fish and wildlife.

# **Biosolids**



## States with PFAS Guidelines in Biosolids

This map shows the distribution of states with enacted or planned regulations and/or guidance for PFAS in biosolids.

Ten states have guidance for one or more PFAS in biosolids. Five states have regulatory standards and five have advisory levels.

Maine was the first state to enact a regulatory ban, with a few exemptions, on the land application of biosolids and biosolids-derived products. In 2024, Connecticut adopted a regulatory ban on the use, sale, or offer for sale as a soil amendment of any biosolids or wastewater sludge that contain PFAS.

Several other states like Maryland, Michigan, Minnesota, and New York are taking tiered approaches to addressing PFAS contamination in biosolids, establishing thresholds for which land application of biosolids is permitted, where land application has restrictions (e.g., application rate, sampling), and where land application is not permitted.<sup>8</sup> Missouri specifically noted that it does not have CWA Section 503 delegated authority, and Montana and Wyoming stated that they do not have biosolids primacy, and therefore do not have guidance for PFAS in biosolids.

One state that does not have guidance plans to enact a regulatory or advisory limit for PFAS in biosolids.

# **PFAS Legislation**

Nearly three-quarters of states in the U.S. have passed or proposed legislation related to PFAS. These administrative policies or acts, bills, and statutes not only serve as the basis for state regulatory standards but also serve as the basis for state funding for PFAS actions, monitoring or sampling requirements, or cleanup actions.



This infographic shows the number of states that have passed PFAS legislation in different categories.

Some notable legislation categories include:

<sup>&</sup>lt;sup>8</sup> For a more detailed discussion of state biosolids actions, read <u>PFAS in Biosolids: A Review of State Efforts &</u> <u>Opportunities for Action</u>.

- Aqueous Film-Forming Foam (AFFF): Twenty-two states have enacted legislation related to the use of PFAS in Class B firefighting foams. Some of the bills prohibit the use of AFFF and require switching to fluorine-free foam (F3). Others address AFFF in firefighting gear, the establishment of AFFF takeback programs, the cleanup of airports or other sites that have historically used AFFF for training or firefighting purposes, or the listing of discarded AFFF as hazardous waste in state law.
- Consumer and Other Products: Sixteen states have enacted legislation related to the use of PFAS in products, notably consumer products, cosmetics, or food packaging. For example, Minnesota's <u>Amara's Law</u> bans the sale, offer for sale, or distribution of products containing intentionally-added PFAS in eleven consumer product categories, and will by 2032 ban non-essential uses of PFAS in all products. Washington's <u>Safer Products</u> program, part of the state's <u>Toxic Pollution Law</u>, restricts or eliminates the use of priority PFAS in certain consumer products when safer alternatives are available. New Mexico's <u>PFAS Protection Act</u> will phase out and ban consumer products containing intentionally-added PFAS, and will require labeling of consumer products made with PFAS to help educate consumers.
- Regulatory Standards: Twelve states have enacted legislation mandating regulations for certain PFAS in different environmental media. This includes bills requiring a state to evaluate the need for setting a standard generally, as well as bills requiring a state to enact an MCL or specify type of limit.

Details on which states have enacted or proposed legislation on PFAS, including bill names and links, are provided in the <u>State Pages</u> portion of this report.

# **Regulating PFAS as Hazardous**

In 2024, EPA finalized its <u>rule</u> designating PFOA and PFOS as hazardous substances under CERCLA, proposed a <u>rule</u> to amend RCRA by adding nine PFAS to the list of RCRA hazardous constituents and to modify the definition of hazardous waste as it applies to cleanups at permitted hazardous waste facilities.<sup>9</sup> Twenty-one states also regulate PFAS as hazardous under a state equivalent to CERCLA and/or RCRA. States may add certain PFAS to hazardous substance lists or related legislation, or include PFAS in RCRA corrective action permits. In March 2025, New Mexico passed <u>House Bill 140</u>, which lists discarded firefighting foams as a hazardous waste in state law and in accordance with its federal primacy under RCRA.

<sup>&</sup>lt;sup>9</sup> These federal regulations have different impacts on states, as outlined in ECOS' paper, <u>Processes and</u> <u>Considerations for Setting State PFAS Standards</u>.



Regulating PFAS as Hazardous Under State Equivalents to CERCLA and/or RCRA

This pie chart shows the number of states that regulate PFAS as hazardous under a state equivalent to CERCLA and/or RCRA. Texas preferred not to answer this question and is not included in the count.

# Sampling, Source Identification, Monitoring, & Testing

This section focuses on how states identify where PFAS are used and found. It examines state actions to identify PFAS in public water systems (PWSs) and nearby military installations, provides information related to known PFAS sources and where states monitor for potential PFAS contamination, and details PFAS test methods.

# **Statewide PFAS Sampling**

States sample for PFAS across all environmental media. While sampling actions are mentioned in different sections of this compendium, ECOS focuses in this section on state-led sampling and sampling requirements of two major entities, PWSs and military installations.

# **Public Water Systems**

Most states have conducted sampling at PWSs for PFAS in drinking water. Given the limited scope of the <u>Unregulated Contaminant Monitoring Rule</u>, 45 states have conducted broader statewide sampling. These efforts may be conducted as part of PFAS action plans or as part of the state-specific MCL development process, required as part of monitoring and reporting programs for National Pollutant Discharge Elimination System (NPDES) permits, directed by bills or statutes through state legislatures, or conducted through voluntary sampling programs. Some states have created online dashboards or maps to display data on where PFAS has been found, and PWS sampling results can help states target resources for remedial activities, develop drinking water mitigation plans, and otherwise characterize drinking water quality.



### State-Led PFAS Sampling of Public Water Systems

This map shows the states that have conducted sampling of PWSs beyond UCMR requirements, and which states have detected, or not detected, PFAS at any level in the finished water.<sup>10</sup>

Under the SDWA, EPA every five years issues a list of unregulated contaminants that PWSs must monitor for and report on. In 2021, the Agency published the fifth round of the <u>Unregulated Contaminant</u> <u>Monitoring Rule</u> (UCMR5), which requires PWSs serving at least 3,300 people (and some smaller systems) to sample finished drinking water for 29 PFAS (and Lithium) between 2023 and 2025 using EPA Methods 537.1 and 533.<sup>11</sup> States use UCMR results to better understand overall PFAS contamination and support their individual sampling actions, and some are targeting their sampling concurrent with the UCMR5 requirements. For example, Tennessee has a statewide sampling strategy to test source water for the same 29 PFAS required in UCMR5 in all PWSs. The state is working to make a dashboard of this source water and UCMR5 sampling to create a picture of both raw and treated drinking water, to begin to characterize

<sup>&</sup>lt;sup>10</sup> In March 2025, the Oklahoma Department of Environmental Quality began work under a small and disadvantaged communities emerging contaminants grant to collect PWS samples for PFAS analysis. At the time of publication, however, results were not yet available for samples collected thus far, so the state remains grey on the map.

<sup>&</sup>lt;sup>11</sup> All 29 PFAS are within the scope of either or both analytical methods. A table with the list of contaminants, minimum reporting levels, sampling locations, and applicable analytical methods is available on EPA's <u>UCMR webpage</u>. Results of the testing will be updated on EPA's UCMR5 <u>Data Finder</u> on a quarterly basis until completion of data reporting in 2026. PWSs serving more than 10,000 people were required to report on six PFAS under the third round of the UCMR (UCMR3); however, UCMR5 is much larger in scope and impacts more states than UCMR3 did.

water quality in the state, to identify contaminated watersheds or aquifers, to characterize groundwater conditions, and to otherwise provide insight into where to target treatment efforts.

States are working with their PWSs to gather monitoring data to meet initial monitoring requirements under the NPDWR. These requirements will initiate continued data collection of targeted PFAS concentrations in drinking water across the nation.

While the NPDWR does not apply to private drinking water wells, EPA announced alongside its final rule that it made available \$1 billion in funding through the Infrastructure Investment and Jobs Act (i.e., Bipartisan Infrastructure Law [BIL]) to help private well owners sample for and address PFAS. As noted in the table in the section of this report on funding for PFAS research and other initiatives, several states have initiated sampling or rebate programs to support private well owners in identifying and treating PFAS contamination. New Jersey also requires testing of private wells for PFOA, PFOS, and PFNA at the time of home sale, every five years at rental properties (N.J.A.C. 7:9E-7:9E-2.1), and in new well installations (N.J.A.C. 7:10-12.30c).

# **Military Installations**

PFAS is often found at and near military installations as a result of DoD's use of AFFF and other activities. DoD is assessing active and former military installations for PFAS contamination. As of September 2024, DoD had completed the preliminary assessments and site inspections phase at 712 installations, 581 of which required further action and are proceeding to the next step in the CERCLA process.<sup>12</sup> DoD also samples groundwater not consumed as drinking water under CERCLA, and samples drinking water on and off-base for PFAS resulting from previous DoD activities. The Department plans to initiate interim actions to sample and address private drinking water well contamination from DoD activities where concentrations are known to be at or above three times the NPDWR, and will prioritize action where PFAS levels from these releases are highest.<sup>13</sup>

While DoD conducts sampling for PFAS, 37 states conduct their own or partner with DOD or other agencies to conduct PFAS sampling near military installations based on known or suspected occurrence, proximity, or statewide surveillance activities. For example, New Mexico states that it sampled for and found some of the highest documented levels of PFAS around Lake Holloman, which is located next to Holloman Air Force Base, and the City of Clovis and rural Curry County, where 3,600 dairy cows were euthanized from PFAS poisoning after the herd consumed groundwater runoff from Cannon Air Force Base. The Minnesota Pollution Control Agency has an interagency agreement with the state's Department of Military Affairs and serves as technical advisors for investigations, led by DoD, at three Army National Guard facilities where PFAS was sampled for and detected. Similarly, California's Water Resources Control Board is working with DoD to identify and sample municipal supply drinking water wells and PWSs that may have PFAS contamination from historic military operations. On its Military PFAS Resources <u>webpage</u>,

<sup>&</sup>lt;sup>12</sup> PFAS Data: Cleanup of PFAS, DoD.

<sup>&</sup>lt;sup>13</sup> <u>Memorandum</u>, Prioritization of Department of Defense Cleanup Actions to Implement the Federal Drinking Water Standards for Per- and Polyfluoroalkyl Substances Under the Defense Environmental Restoration Program, DoD.

the state identifies dozens of facilities with known or suspected PFAS release and provides further information on the sampling actions.



State-Led PFAS Sampling of Military Installations

This map shows the states that have, beyond DOD actions, conducted sampling of military installations and detected PFAS. No states reported sampling military installations and not detecting PFAS.

### **Blood Sampling**

Most people in the U.S. have measurable amounts of PFAS in their blood, according to ATSDR.<sup>14</sup> Blood tests can be used as part of an investigation or health study to show a range of blood PFAS levels in communities and how levels vary among different populations. However, blood tests cannot provide information on when someone was exposed to PFAS; how much PFAS they were exposed to; or if any past, present, or future health problems are due to exposure to PFAS. Regardless, eleven states (California, Colorado, Maine, Michigan, Minnesota, New Hampshire, New Jersey, New Mexico, New York, Pennsylvania, and Vermont) have conducted blood sampling for PFAS and six more states are considering conducting such sampling to better understand public health impacts from particular sources or events.

<sup>&</sup>lt;sup>14</sup> <u>Testing for PFAS</u>, ATSDR. CDC and ATSDR have a <u>PFAS Blood Estimation Tool</u> for community members with exposure to PFOA, PFOS, PFHxS, and PFNA in drinking water. The tool is based on pharmacokinetic models and was evaluated using data from the Agency's <u>PFAS exposure assessments</u>, an effort mandated under the Fiscal Year 2018 NDAA to evaluate PFAS exposure in communities near current or former military bases known to have the contaminants in their drinking water.

Some states offer tests widely and may require insurance to cover the costs, whereas other states may offer tests as part of a health study or have targeted testing to specific communities.



States that have Conducted PFAS Human Blood Sampling



### **Source Inventories**

PFAS contamination can be attributed to many different sources, including manufacturing facilities where PFAS were used, airports where AFFF was used for training or firefighting purposes, landfills where products containing PFAS were disposed of, and more. EPA has collected some data from states, Tribes, and localities that are testing for PFAS pursuant to their own regulatory or voluntary data collection initiatives, and is including the data in its Enforcement and Compliance History Online (ECHO) <u>PFAS</u> <u>Analytic Tools</u> application.<sup>15</sup> Three states that said they have maps of PFAS sources indicated that the maps are integrated with EPA's PFAS Analytic Tools.

EPA also collects data from facilities on releases and other waste management practices for PFAS covered by the <u>Toxics Release Inventory</u> (TRI). PFAS are annually added to the list, as required by the Fiscal Year

<sup>&</sup>lt;sup>15</sup> The application integrates eleven national data sets on PFAS occurrence in communities, and includes information about CWA discharges from permitted sources, facilities that have historically manufactured or imported PFAS, history of transfers of PFAS waste, and other detections and use locations.

2020 NDAA; As of Reporting Year 2024, 196 PFAS are reportable, and PFAS are designated as "chemicals of special concern" and have a reporting threshold of 100 pounds.

In 2023, ECOS formed a workgroup of experts from state environmental agencies, federal agencies, and NGOs to compile and share information in an interactive <u>PFAS Use in Industry Table</u> on industries that use PFAS, in which processes, and where gaps exist so that states can better understand how to implement technical assistance, monitoring, and remediation strategies.<sup>16</sup>

Given that there are still a number of gaps, ECOS asked states if they have inventories of PFAS sources identified in their state (or source categories, such as schools [via PFAS in cleaning products or wastewater from septic systems), airports [via AFFF use], etc.), if they know of companies or sites that have used or are actively using PFAS in their state, and if they have a map (publicly available or not) of identified PFAS sources.

<sup>&</sup>lt;sup>16</sup> The table lists known facilities, PFAS identified, and corresponding North American Industry Classification System (NAICS) codes in over a dozen industrial categories such as sewage treatment, airport operations, electroplating, solid waste landfill, chemical manufacturing, paint and coating manufacturing, paper manufacturing and food service, semiconductor industry, textile manufacturing and coating, and urethane and foam product manufacturing (e.g., AFFF).

State	Inventory of PFAS Sources	Inventory of Companies/ Sites Actively Using PFAS	Neither	Map of Identified PFAS Sources	Information and/or Links
Alabama	√	√			<b>Inventory:</b> Based on EPA-identified source categories and NAICS codes <b>Sites:</b> 3M, Daikin (Manufacturers), current and former military installations
Alaska		√		$\checkmark$	Inventory: Focus on AFFF sources at airports Sites: <u>Alaska PFAS Contaminated Sites</u>
Arizona			√		
Arkansas			$\checkmark$		
California	$\checkmark$			$\checkmark$	<b>Inventory:</b> Limited list based on other state's investigations - Airports, landfills, chrome platers, bulk fuel terminals, refineries have been investigated in the state
CNMI	✓			√	Inventory: Airport firefighting facilities, landfills
Colorado	✓	√		$\checkmark$	Sites: <u>Class B firefighting foam containing PFAS - Certificate of</u> <u>Registration Program</u>
Connecticut			$\checkmark$	$\checkmark$	
DC			√		
Delaware	✓	$\checkmark$		√	Inventory/Sites: Currently developing this information
Florida			√		
Georgia			√		

State	Inventory of PFAS Sources	Inventory of Companies/ Sites Actively Using PFAS	Neither	Map of Identified PFAS Sources	Information and/or Links
Hawaii	$\checkmark$			√	Inventory: Internal list of PFAS sites currently being compiled
Idaho	$\checkmark$				<b>Inventory:</b> Initial inventory list of industry type and potential sites for purposes of public drinking water sampling efforts
Illinois			√		
Indiana	✓				
lowa	✓	✓		✓	Inventory/Sites: Can provide upon request
Kansas	$\checkmark$			$\checkmark$	Inventory: <u>Final Statewide Inventory of Potential PFAS Sites in</u> <u>Kansas</u>
Kentucky	$\checkmark$			$\checkmark$	Inventory: Inventory of potential sources only
Louisiana			√		
Maine			√	$\checkmark$	

State	Inventory of PFAS Sources	Inventory of Companies/ Sites Actively Using PFAS	Neither	Map of Identified PFAS Sources	Information and/or Links
Maryland	✓	✓		V	Inventory/Map: The Maryland Department of Environment (MDE) has conducted a GIS desktop analysis of potential PFAS sources throughout the State to prioritize sampling of CWSs, assist in source track-down efforts, and identify monitoring sites for surface water and fish tissue sampling. An interactive map has not been created however shapefiles can be provided upon request. Sites: MD Legislation (SB0956) required MDE to identify Significant Industrial Users (SIUs) with pretreatment permits that currently use PFAS chemicals. MDE's general permit for industrial stormwater also requires facilities to identify whether PFAS chemicals are used in their activities and have the potential to contaminate stormwater. These lists have not been made publicly available at this time.
Massachusetts	√	✓			<b>Inventory:</b> The Massachusetts Department of Environmental Protection (MassDEP) maintains a spreadsheet of contaminated sites including PFAS, in the cleanup program. The spreadsheet includes where source(s) of contamination have been identified. This is not currently published on the MassDEP website. <b>Sites:</b> Certain PFAS are now included under the MA Toxics Use Reduction Act reporting requirements. See <u>PFAS Tracking</u> <u>Required Under TURA</u> .
Michigan	$\checkmark$	$\checkmark$		√	Inventory: <u>PFAS Sites and Areas of Interest, Identified Industrial</u> <u>Sources of PFOS for Municipal Wastewater Treatment Plants</u> Map: <u>MPART 's PFAS Geographic Information System</u>

State	Inventory of PFAS Sources	Inventory of Companies/ Sites Actively Using PFAS	Neither	Map of Identified PFAS Sources	Information and/or Links
Minnesota	√	√		√	<b>Inventory:</b> <u>Facilities Included in the PFAS Monitoring Plan</u> <b>Sites:</b> <u>PFAS Monitoring Plan Dataset</u> . Sampling data collected while implementing the PFAS Monitoring Plan lists results from individual facilities. This list does not represent all PFAS sources in MN.
Mississippi			√		
Missouri			√		Map: Missouri PFAS Viewer Tool
Montana	√			√	<b>Inventory:</b> Known sources are given on the Montana Department of Environmental Quality PFAS website, along with associated reports
Nebraska	$\checkmark$	✓		$\checkmark$	Inventory/Sites: <u>Nebraska Statewide Perfluorinated Compounds</u> Inventory
Nevada	$\checkmark$	$\checkmark$		$\checkmark$	
New Hampshire	$\checkmark$			$\checkmark$	Inventory: <u>Status Report on the Occurrence of PFAS</u> Contamination in New Hampshire
New Jersey			√	$\checkmark$	
New Mexico			√		<b>Inventory:</b> Currently not a requirement to maintain a state inventory but limited voluntary reporting of PFAS in RCRAInfo

State	Inventory of PFAS Sources	Inventory of Companies/ Sites Actively Using PFAS	Neither	Map of Identified PFAS Sources	Information and/or Links
New York	√	√			<b>Inventory:</b> New York monitors sources across multiple categories but does not have a centralized or publicly available database. However, the <u>Division of Water PFAS and 1,4-Dioxane</u> <u>Information Portal</u> provides information related to discharges of these emerging contaminants and their concentrations observed in the environment.
North Carolina	$\checkmark$	$\checkmark$			
North Dakota	$\checkmark$			$\checkmark$	Inventory: All PFAS reports identify source categories
Ohio			√		
Oklahoma			√		
Oregon	$\checkmark$			$\checkmark$	
Pennsylvania			√		<b>Inventory:</b> The Pennsylvania Department of Environmental Protection's (PADEP) Bureau of Environmental Cleanups and Brownfields maintains a list of properties with PFAS contamination. PADEP's Bureau of Waste Management conducted a landfill leachate PFAS study starting in late 2021, but it didn't include all landfills in Pennsylvania. So, PA has data on PFAS in some landfills, but not a comprehensive inventory.
Rhode Island	√			√	Inventory: <u>Rhode Island Department of Environmental</u> <u>Management Statewide PFAS Source Investigation Report</u> <u>November 2023</u>
South Carolina	$\checkmark$	$\checkmark$			<b>Inventory/Sites:</b> South Carolina has identified some categories and found contamination at legacy sites (NPLs) and DoD installations

State	Inventory of PFAS Sources	Inventory of Companies/ Sites Actively Using PFAS	Neither	Map of Identified PFAS Sources	Information and/or Links
South Dakota	√	√		V	<b>Inventory/Sites:</b> <u>Waste Management in South Dakota</u> . The state is aware of certain potential sources such as airports, landfills, POTW's, etc. This is not a comprehensive inventory.
Tennessee			$\checkmark$		
Texas			$\checkmark$		
Utah	√				Inventory: In process
Vermont			√		Inventory/Map (Sampling): Vermont Natural Resources Atlas
Virginia	✓				<b>Inventory:</b> From a survey of pre-treatment programs, but it has data gaps
Washington	√				<b>Inventory:</b> Potential sources are identified in Washington's PFAS Chemical Action Plan <b>Map:</b> <u>PFAS Testing Results Dashboard - PFAS in Drinking Water</u> <u>Data</u>
West Virginia		✓		$\checkmark$	Sites: PFAS Protection Act required them to report to the state
Wisconsin			√		
Wyoming	√			V	<b>Inventory:</b> Potential sources identified include fire stations, refineries, airports, biosolids disposal, landfills, military sites, wastewater discharges, industrial users, natural gas plants

This table lists which states have an inventory of PFAS sources identified in the state, which states know of companies/sites that have used or are actively using PFAS in the state, and/or have a map of identified PFAS sources.

# **Monitoring Activities**

Monitoring is a critical, long-term component of state PFAS actions. Regular monitoring (through state monitoring plans, under NPDES or UCMR5 requirements, or through other actions) helps states identify potential sources and PFAS plume movement, inform regulatory actions, and determine where remediation efforts should be targeted.



This infographic shows the number of states that monitor for PFAS in different environmental media.

As expected, based on increasing requirements for identifying PFAS in drinking water, 45 states actively monitor PWSs for PFAS, and 29 states monitor for PFAS in private wells. Some monitoring actions for drinking water, surface water, or other media may be routine. However, in other states, while selective monitoring may have been conducted on some listed media, a routine monitoring program may not yet be established. A few states noted that certain types of monitoring, like those of groundwater and soil for example, are performed as part of source site investigations. Other states require facilities to test landfill leachate or other sources where elevated levels are expected, like waste coming from manufacturers with known PFAS use.

Details on specific monitoring activities are provided in the <u>State Pages</u> portion of this report.
### **Analytical Methods**

States use a number of methods to test for PFAS in different environmental media. In its paper on *Processes and Considerations for Setting State PFAS Standards*, ECOS describes in detail the use of and targeted PFAS for different methods (e.g., EPA Methods 537.1, 533, 1633, etc.), and outlines which states use each method and for which media. This compendium provides updates to and expands upon the methods states use, and includes other methods not otherwise described in ECOS' paper. While the numbers of how many states use each method and to which media they are applied are provided in the table below, there are a few noteworthy themes and considerations for the data:

- A number of states referenced using <u>DoD Quality Systems Manual</u> Version 5.1 or later (i.e., 5.2, 5.3, 5.4) for consideration as additional guidance and quality control requirements or at DoD sites: eight states use it for drinking water analysis, nine states for surface water analysis, six states for groundwater analysis, six states for wastewater analysis, nine states for soil and sediment analysis, eight states for biosolids and sludge analysis, three states for air analysis, nine states for landfill analysis, and seven states for fish tissue analysis.
- ECOS removed the row for <u>EPA Solid Waste (SW)-846 Method 1314</u>, Liquid-Solid Partitioning as a Function of Liquid-Solid Ratio for Constituents in Solid Materials Using an Up-Flow Percolation Column Procedure, as no state uses this method as validated. Hawaii developed guidance for a modified use of this method (soil column leaching test) for use with testing of soil and sludge, and it is included in the "other" methods row.
- Four states specifically noted that they are transitioning to <u>EPA Method 1633</u> for all applicable media.<sup>17</sup>
- Most states use <u>EPA Method 537.1</u> to analyze PFAS in drinking water, but some states noted that <u>EPA Method 533</u> is becoming the preferred method and is widely used. States may allow PWSs to use either method for analysis. Additionally, six states said they use EPA Method 537.1 version 2.0 for drinking water analysis, and two states referenced using both versions 1.0 and 2.0.<sup>18</sup>
- Some states also modify certain methods for use in different media. For example, Washington modified EPA Method SW-846 8321B using the QuECHERS extraction procedure based on an

<sup>&</sup>lt;sup>17</sup> EPA Method 1633, which was finalized in 2024, analyzes 40 PFAS in non-drinking water media. In December 2024, EPA published <u>Method 1633</u>, <u>Revision A</u> (1633A), which includes minor changes to the final version of Method 1633 that was validated, made in response to comments from study participants and others. As EPA recommends use of either its Method 1633 or 1633A, and because ECOS surveyed states on analytical methods prior to the release of the revision, ECOS will refer to both collectively as EPA Method 1633 in this report.

<sup>&</sup>lt;sup>18</sup> In its final NPDWR, EPA determined that its Methods 533 and 537.1 v2.0 are the two available for quantification below the MCL levels and allowable for initial monitoring. Initially, there were concerns that this may create challenges with meeting timing requirements for the rule, since not all laboratories have adopted or obtained certification for these methods, and not all states use Method 537.1 version 2.0 yet. In January 2025, EPA published a Federal Register Notice for "Expedited Approval of Alternative Test Procedures for the Analysis of Contaminants Under the Safe Drinking Water Act; Analysis and Sampling Procedures," which expedited approval of Method 537.1 version 1.0 for initial monitoring under the NPDWR, addressing that timing gap. UCMR5 specifies the use of Methods 533 and 537.1 version 2.0 for monitoring.

FDA method for fish tissue, and another uses its own state modification of EPA Method 537.1 (called 537M DNREC REM) for remediation of 37 PFAS in non-drinking water media.

- A few listed methods may be used for media not listed. For example, Minnesota uses EPA Methods SW-846 3512 and 8327 for stormwater (although it specifies that its industrial stormwater program will require the use of EPA Method 1633 moving forward). New York uses SGS MLA 110 for biota, and the District of Columbia uses AXYS Method MLA-110 Revision 02 Version 12, equivalent to EPA Method 1633, for fish tissue.
- Some states have the capacity to conduct testing of certain PFAS, while others may need to contract out analysis to private or other laboratories. Wyoming noted that its fish tissue monitoring is conducted under the National Aquatic Resource Survey; therefore, state fish tissue samples are analyzed by EPA rather than in a state or privately-contracted laboratory.

				Environ	nental Media				
Laboratory Method	Drinking Water	Surface Water	Groundwater	Wastewater	Soil / Sediment	Biosolids / Sludge	Air	Landfills	Fish Tissue
<u>537.1</u>	42*	4	5						1
Modified 537.1	9	25	20	19	19	6		3	7
<u>533</u>	39	5	7	2				1	1
SW-846 <u>3512</u> & <u>8327</u>		3	3	5	3	4		2	1
<u>1633</u>	3	38	31	35	30	26	1	22	26
<u>OTM-45</u>							9		
OTM-50							7		
<u>SW-846</u> <u>8321B</u>									1
<u>SW-846 1312</u>					4	2			
<u>1621</u>	3	2	3	5	1	1	1	1	
TOP Assay	2	4	8	4	10	3	1	2	1
<u>SGS MLA 110</u>	4	4	4	4	4	4	1	2	4
<u>ISO</u> 25101:2009	1								
State Method	1	1	1	1	1	1			1
Other	4	6	6	5	5	4	3	2	6

### State Use of Analytical Methods in Different Environmental Media

	Environmental Media								
Laboratory Method	Drinking Water	Surface Water	Groundwater	Wastewater	Soil / Sediment	Biosolids / Sludge	Air	Landfills	Fish Tissue
(Other Specified)	1. <u>Total PFAS Risk</u> - SGS MLA 119 (EOF), SGS MLA120 (ultrashorts), 537M (ultrashorts) 2. Non-target analysis using High Resolution Mass Spectrometry 3. 200.7	1. <u>DEP SOP LC-001-3</u> 2. <u>Total PFAS</u> <u>Risk</u> - SGS MLA 119 (EOF), SGS MLA120 (ultrashorts), 537M (ultrashorts) 3. SW-846 Isotope Dilution Methods 4. Other in-house methods for proprietary/ specialty needs 5. User Defined Methods approved through state's Office of Quality Assurance, in addition to 1633	1. DEP SOP LC- 001-3 2. Total PFAS Risk - SGS MLA 119 (EOF), SGS MLA120 (ultrashorts), 537M (ultrashorts) 3. LCMSMS compliant with DOD QSM v5.3 or later 4. Other in- house methods for proprietary/ specialty needs 5. User Defined Methods approved through state's Office of Quality Assurance, in addition to 1633	1. DEP SOP LC- 001-3 2. Total PFAS Risk - SGS MLA 119 (EOF), SGS MLA120 (ultrashorts), 537M (ultrashorts) 3. LCMSMS compliant with DOD QSM v5.3 or later 4. Other in-house methods for proprietary/ specialty needs 5. User Defined Methods approved through state's Office of Quality Assurance, in addition to 1633	1. <u>DEP SOP</u> <u>LC-001-3</u> 2. <u>Total PFAS</u> <u>Risk</u> - SGS MLA 119 (EOF), SGS MLA120 (ultrashorts), 537M (ultrashorts) 3. LCMSMS compliant with DOD QSM v5.3 or later 4. Modified SW-846 1314 5. Other in- house methods for proprietary/spe cialty needs	1. <u>Total PFAS</u> <u>Risk</u> - SGS MLA 119 (EOF), SGS MLA120 (ultrashorts), 537M (ultrashorts) 2. LCMSMS compliant with DOD QSM v5.3 or later 3. Modified SW-846 1314 4. User Defined Methods approved through state's Office of Quality Assurance, in addition to 1633	1. 320 2. Modified TO-15 3. SGS MLA- 076	1. <u>Total</u> <u>PFAS Risk</u> - SGS MLA 119 (EOF), SGS MLA120 (ultrashorts), 537M (ultrashorts) 2. LCMSMS compliant with DOD QSM v5.3 or later	1. LCMSMS compliant with DOD QSM v5.3 or later 2. Non-target analysis using High Resolution Mass Spectrometry 3. SGS MLA-110 Rev.02 v.12 4. PACE ENV-SOP- MIN4-0178 - biological tissues 5. Modified SW-846 8321B using QuENCHERS extraction procedure 6. User Defined Methods approved through state's Office of Quality Assurance, in addition to 1633

### State Use of Analytical Methods in Different Environmental Media

6 states noted that they use 537.1 v2.0 for drinking water analysis, and 2 states noted that they use both 537.1 v1.0 and v2.0.

This table identifies the number of states that use analytical methods for PFAS in different environmental media.

# Remediation, Destruction, & Disposal

This section focuses on PFAS treatment, destruction, and disposal technologies, and highlights actions to remediate and reduce PFAS contamination in the U.S.

### **Remediation Technologies**

A range of technologies exist for treating PFAS-contaminated media (i.e., removing PFAS) and/or for destroying PFAS (i.e., breaking down PFAS molecules) in different environmental media, but there are not many proven, long-term remedial solutions.<sup>19</sup> Both granular activated carbon (GAC) and reverse osmosis (RO) have proven effective at removing PFAS from drinking water, while other technologies are less-studied or used. And given the high costs of implementation, changing regulatory requirements, necessary maintenance needs, and need for additional scientific studies supporting their effectiveness, many methods for PFAS treatment are not yet widely available to states and other entities (e.g., PWSs, landfills, etc.).

The table below shows the number of states that use or plan to deploy different technologies to target PFAS, as well as examples of environmental media for which they have been applied. GAC, RO, incineration, solidification and landfilling, and ion exchange resin are the most deployed technologies. A few states specified other technologies or treatment "methods" for PFAS removal, including nanofiltration and adsorptive medias for drinking water, sludge dryers and digesters to reduce PFAS in sludge and expand landfill capacity, excavation of significantly contaminated soil from source areas, and product replacement. No state uses or plans to deploy photocatalysis, thermal reactivation, electron beam treatment, and ball milling, but they are not used so are therefore not included in the table.

Technology	Number of States that Use It	Number of States that Plan to Deploy It	Examples of Media Where States Have Applied or are Exploring Application of These Technologies
		PFAS Removal	Technologies
Granular Activated Carbon	21	11	Drinking water (public and private), groundwater, surface water, wastewater (including industrial), stormwater, landfill leachate, air
Reverse Osmosis	11	13	Drinking water (public and private), groundwater, surface water, landfill leachate
Ion Exchange Resin	8	10	Drinking water, groundwater, landfill leachate
Foam Fractionation	2	9	Biosolids, landfill leachate, AFFF (to concentrate waste), other wastes
Soil Washing	1	1	Soil

#### State Use of PFAS Removal, Destruction, and Disposal Technologies

<sup>&</sup>lt;sup>19</sup> <u>Treatment Technologies</u>, PFAS Technical and Regulatory Guidance Document, ITRC.

Technology	Number of States that Use It	Number of States that Plan to Deploy It	Examples of Media Where States Have Applied or are Exploring Application of These Technologies
		PFAS Destructio	n Technologies
Gasification/Pyrolysis	0	2	Biosolids
Incineration	6	7	AFFF, soil, sediment, spent filter media, other waste
Supercritical Water Oxidation	2	7	AFFF, biosolids, other waste
Electrochemical Oxidation	1	4	Drinking water, groundwater, surface water, biosolids, other waste
Thermal Degradation	3	3	Soil, AFFF, other waste
Hydrothermal Alkaline Treatment	0	2	Biosolids, other waste
Thermal Oxidation	1	1	Sewage sludge
Sonolysis	0	1	Soil, groundwater
Plasma	0	1	Biosolids, other waste
Ultraviolet Light	0	1	Groundwater
	PFAS Dispo	osal or Containme	ent Technologies/Solutions
Solidification and Landfilling	8	4	Soil, AFFF, biosolids, landfill leachate, other waste
Underground Injection	1	3	Drinking water

### State Use of PFAS Removal, Destruction, and Disposal Technologies

This table shows the number of states that use or plan to deploy a range of technologies to treat, destroy, or dispose of/contain PFAS in different environmental media.

### Landfilling

PFAS enter landfills as part of the general municipal solid waste (MSW) stream, in biosolids disposed of as waste, through waste form manufacturing facilities, and other sources, and are often present in significant concentrations. Solid waste landfills aim to contain waste, and thereby restrict the release of contaminants within the landfill from entering the environment.<sup>20</sup> While some landfill features, like flexible membrane liners or leachate management systems, may help to contain PFAS, landfills are not effective long-term

<sup>&</sup>lt;sup>20</sup> Interim Guidance on the Destruction and Disposal of Perfluoroalkyl and Polyfluoroalkyl Substances and Materials Containing Perfluoroalkyl and Polyfluoroalkyl Substances - Version 2, April 2024, U.S. EPA.

containment sites, and have been found to emit PFAS via leachate into groundwater and surface water or by "burped" gas into the air.<sup>21</sup>

27 states have identified landfills as a known source of PFAS contamination in their state.



#### States with Landfills as a Known Source of PFAS Contamination

This map shows the states where landfills have been identified as a known source of PFAS contamination.

Maryland has not yet identified landfills as a known source of PFAS contamination but noted that it will soon add PFAS monitoring requirements to landfill permits, and that data will be used to determine whether landfills are known sources. Arizona similarly said that its groundwater sampling results show PFAS in monitoring wells at landfills, but that the source has not yet been definitively identified. Pennsylvania is aware of PFAS in leachate and PFAS leaching out of some closed landfills into groundwater at some Hazardous Sites Cleanup Act and Superfund sites, but active landfills are not currently a known source of contamination to nearby groundwater or surface water. The state also raised the concern over landfill liability, noting that landfills are not "sources" as they are receiving PFAS from elsewhere.

<sup>&</sup>lt;sup>21</sup> Landfill Gas: A Major Pathway for Neutral Per- and Polyfluoroalkyl Substance (PFAS) Release, June 2024, American Chemical Society.

Five states have state-level restrictions or requirements about disposing of PFAS-containing materials in landfills:

- Alaska issued guidance that AFFF should not be disposed of into landfills.
- In Connecticut, contractors disposing of PFAS-containing waste under state-funded projects are discouraged from using incineration; landfilling (Under RCRA Subtitle C) is the state's preferred disposal method.
- In Maryland, the only restriction for the disposal of PFAS-containing materials is state bill 0273, which states that Class-B Firefighting Foams that contain intentionally-added PFAS cannot be disposed of in a landfill.
- Oklahoma requires a Non-Hazardous Industrial Waste Certification that would capture known PFAS wastes, like AFFF or AFFF wash water, and not the incidental PFAS in discarded material, like carpet.
- Washington has <u>dangerous waste regulatory guidance</u> and <u>guidance on AFFF disposal</u>, both of which reference PFAS and landfills.

New York noted that while it has <u>regulations</u> on PFAS-containing wastes as hazardous substances at Superfund and corrective action sites, it does not have a RCRA hazardous waste classification for PFAS, so those wastes are considered solid waste and can be disposed of in Part 360 landfills in the state. The state said that there are differing tolerances amongst landfills for accepting known PFAS-containing waste, with some accepting it and others refusing waste containing certain materials (e.g., AFFF-contaminated soil, etc.). The New York Department of Environmental Conservation continues to implement the state's Inactive Landfill Initiative to investigate emerging contaminants, including PFAS, in groundwater at closed landfills, legacy Superfund sites, and other closed contaminated sites to ensure the most current data is available.

States have noted in this assessment and in ERIS' 2024 <u>report</u> on state environmental agency needs that PFAS contamination in and emissions from landfills are one of the areas needing more research, especially regarding the development of methods for identifying total PFAS from different sources (including landfill gas emissions); monitoring PFAS in landfill gas (including which types of landfills are most likely to have PFAS in landfill gas emissions); understanding whether PFAS in landfill gas are transformed or destroyed when flared or burned at a landfill gas-to-energy facility; and other challenges, including potential groundwater impacts from PFAS at legacy and unlined landfills, leachate limitations, and the amount of PFAS-contaminated GAC sent to landfills from PWSs.

### **Quantifying PFAS Reduction**

#### State Quantification of PFAS Reduction



This graphic shows the number of states that use different methods to quantify PFAS reduction.

There are several ways states, federal agencies, and other stakeholders can measure pollution reduction. 23 states use data on how much PFAS is found in drinking water to measure their PFAS reduction progress. Arizona is developing a metric to quantify reduction in communities based on drinking water levels that meet the NPDWR, and a couple of states said they analyze progress based on the number of treatment systems installed or on the levels in drinking water after drinking water treatment is implemented. Eleven states quantify the amount of PFAS collected. For example, states with AFFF takeback programs track the gallons of concentrate collected and the number of facilities that have transitioned to fluorine-free foams. Other states measure how PFAS levels have dropped in agricultural products or through biosolids monitoring, the number of regulated facilities that are regularly monitoring for PFAS, metrics related to pollution reduction grants and estimated releases to the environment, or the phasing-out or banning of PFAS in products. The states that do not quantify PFAS reduction noted that it is because it is too early in their monitoring processes and enough data has not yet been collected, or because they have not yet decided how they want to track various metrics.

Details on specific reduction activities are provided in the State Pages portion of this report.

## **PFAS in Products & Firefighting Foams**

This section highlights state actions on PFAS in products and the supply chain, including consumer products and firefighting foams.

### **Consumer Products**

States have been increasingly focused on upstream sources of PFAS to better understand how contaminants are used in industry, how they are discharged into the environment, and how they transfer across media. ECOS asked states to identify what actions they currently take on PFAS in products.



#### State Actions on PFAS in Products

This chart shows the number of states that take specific actions on PFAS in products.

Some states take these actions based on enacted (or proposed) legislation that requires bans or other requirements on PFAS in certain types of consumer products, food packaging, or firefighting foam. For example:

 Minnesota recently began implementation of its <u>Amara's Law</u>, which prohibits the sale or offer for sale of consumer products with intentionally-added PFAS in 11 product categories (as of January 1, 2025). The law will extend to a ban on all products that do not meet the definition of "currently unavoidable use" by January 1, 2032. The state will also implement reporting and fee requirements associated with products sold or offered for sale between 2026 and 2032. Rulemaking is underway for the reporting and fee requirements, as well as to determine what constitutes a "currently unavoidable use" and how to evaluate and address those uses.

- The <u>Safer Products for Washington</u> program operates under the state's Toxic Pollution Law to reduce PFAS and other toxic chemicals in consumer products by restricting or eliminating the chemicals when safer alternatives are available. Washington is authorized to regulate chemicals in consumer products through rulemaking in five-year cycles.
- In March 2025, New Mexico passed its <u>PFAS Protection Act</u>, a prospective phase out and ban on consumer products containing intentionally-added PFAS. The bill will allow for the labeling of consumer products that contain PFAS to help educate consumers.
- A number of states have bills on sales and distribution bans, labeling requirements, or other use restrictions of PFAS in consumer products, food packaging, or AFFF, additional details for which are available in the legislation and products sections of the State Pages portion of this report.

Twenty-seven states reported that they are aware of industries or specific companies that have taken steps to reduce or eliminate PFAS use in products in their state. For example, Alabama and Minnesota both discussed 3M's plans to cease all PFAS manufacturing by the end of 2025 (although the company will continue to use PFAS that are manufactured elsewhere). In Park City, Utah, companies have partnered to lead a <u>takeback program</u> for ski wax containing PFAS. And in West Virginia, The Chemours Company is required to treat its new PFAS manufacturing line with three carbon beds to achieve 99.999 percent removal. Overall, states reported that industries such as fire training facilities, large retail suppliers, restaurants, airports, metal finishers, and chrome platers are among those taking steps to reduce or eliminate PFAS in products.

Eleven states have taken steps to phase PFAS out of state purchases of products such as food packaging, firefighting foams, and firefighting personal protective equipment. Michigan has an executive directive aimed at reducing state purchases with intentionally-added PFAS, Colorado has a bill on purchasing preferences for environmentally-preferable products, New York is implementing the <u>GreenNY</u> <u>Environmentally Preferable Purchasing Program</u>, and Washington similarly has a green purchasing guide.

There are challenges in regulating PFAS use in the supply chain given the number of contaminants found in manufacturing processes and products, essential uses of some of the compounds, varying regulatory considerations, and lack of science and known risks about most PFAS. States recognize that they cannot tackle the challenges alone, and there are opportunities for increased collaboration and coordination across the federal and congressional levels, as well as with stakeholders more broadly, to ensure that alternatives are available and negative externalities are prevented. At the direction of Congress, the U.S. Department of Energy (DOE) in 2024 released a report, *Assessment of Fluoropolymer Production and Use with Analysis of Alternative Replacement Materials*, that contains a lifecycle assessment and cost-benefit analysis of common PFAS currently in use, and potential replacements for commerce. EPA is tracking PFAS production, use, disposal, and other information as well through its <u>reporting and recordkeeping requirements</u> under TSCA Section 8(a)(7), whereby manufacturers and importers of PFAS or PFOS-containing articles in any year between 2011 and 2022 must submit reports on use, production volumes, disposal, exposures, and hazards, enabling the Agency to better characterize sources and quantities of manufactured PFAS in the U.S.<sup>22</sup>

<sup>&</sup>lt;sup>22</sup> In September 2024, EPA announced a direct final rule and parallel <u>proposed rule</u> to delay the reporting period until July 2025 due to budgetary constraints.

Details on specific state actions on products or state purchasing requirements are available in the <u>State</u> <u>Pages</u> portion of this report.

### **Firefighting Foams**

PFAS has been used in AFFF for fighting liquid fuel fires, like those started by oil or gasoline, since the 1960s.<sup>23,24</sup> This Class B firefighting foam "blankets" the fire by cutting off the oxygen between the flammable liquid and the air, making it an effective method for suppression at airports, military installations, chemical plants, or fire training facilities. However, given PFAS' mobility and persistence in the environment, AFFF is one of the commonly known sources of contamination of drinking water, groundwater, and other media. As a result, there has been an effort to collect and dispose of AFFF, as well as a shift to fluorine-free foams (F3).

### **AFFF Takeback Programs**

Nineteen states have implemented AFFF takeback (or collection) programs, and seven states are currently considering implementing one.



#### States With or Considering AFFF Takeback Programs

This map shows the states that have or are considering implementing AFFF takeback programs

<sup>&</sup>lt;sup>23</sup> <u>Firefighting Foams: PFAS vs. Fluorine-Free Foams</u>, U.S. Fire Administration.

<sup>&</sup>lt;sup>24</sup> For a history of use and environmental considerations of legacy PFOS AFFF, legacy fluorotelomer AFFF, and modern fluorotelomer AFFF, see ITRC's <u>PFAS Technical and Regulatory Guidance Document and fact sheets</u> on firefighting foams.

Takeback programs may consist of different components, the most commonly reported being:

- Survey fire departments statewide, collect AFFF, and replace with F3.
- Host a collection day, and request that fire departments and other AFFF users bring their AFFF to a specified location.
- Pay fire departments and commercial service airports per gallon to take unspent AFFF out of service and store it until the state is able to collect it for safe disposal.
- Collect AFFF concentrate containers from municipal and state fire departments.
- Replace regional firefighting foam trailers with F3 trailers.
- Reimburse fire departments for apparatus foam draining and decontamination.

Costs for these programs are born by the state; funds may be allocated by the legislature through AFFFfocused bills or statutes, or they may be a responsibility of the state environmental agency.

States dispose of collected AFFF in several ways:

- Hazardous waste landfill (ten states use this method, four of which specifically noted that these landfills are out of state).
- Incineration out of state (three states use this destruction method).
- Battelle's PFAS ANNIHILATOR Destruction technology using supercritical water oxidation (SCWO) (two states use this destruction method).

To date, states have collected over 1,672,500 pounds of AFFF through takeback programs.

• Interim storage until a safe method is identified, or disposal method under development (three states reported this).

A couple of states noted that AFFF is solidified prior to landfilling or incineration. ITRC outlines other AFFF disposal and best management practices in its <u>PFAS Technical and Regulatory Guidance Document and fact</u> <u>sheets</u> on firefighting foams, and EPA explores destruction methods in its <u>interim guidance</u> on the destruction and disposal of PFAS. Specific takeback program details, including what is done with collected foam, are provided in the <u>State Pages</u> portion of this report.

### Fluorine-Free Foam

After significant research and pressure to find a solution to the human health and environmental concerns posed by AFFF, DoD in January 2023 published an <u>F3 military specification</u> (MILSPEC), which outlines the functional requirements for firefighting foams used at military installations. The F3 MILSPEC includes laboratory testing and manufacturer product certification requirements to meet PFAS content limits (a maximum of 1 part per billion [ppb] of unintentionally-added PFAS). In December 2022, Congress directed the Federal Aviation Administration (FAA) to prepare a <u>transition plan</u> for its move to MILSPEC-approved F3 for aircraft firefighting. While military installations and FAA-regulated airports account for the majority of foam use, states are increasingly looking to F3 requirements at their fire training and other facilities.



Thirty-two states have already transitioned at least one fire department or airport to the use of F3. It is important to note that just because a state authorizes its use does not mean that every fire company has already switched to it; the transition may take time, and some states still have both F3 and AFFF in use, or they retain AFFF for use in fires but prohibit its use for fire training activities. A few states noted that it is hard to track where F3 is being used. However, 21 states have bills or statutes prohibiting the use of AFFF or otherwise mandating the use of F3 or establishment of AFFF takeback programs.

### **AFFF Outreach**

Thirty-three states have conducted outreach to fire departments, airports, and other users of AFFF.

- Eight states have surveyed fire departments, airports, and other state-certified fire training facilities to determine how much Class B firefighting foam is stored, to locate where there are sources of potable water, and/or to identify the location and condition of stockpiles of the PFAS-containing foams. The information gathered is used to target AFFF collection efforts.
- Seven states coordinate with their state fire marshals, collaborating on developing fact sheets, assessing statewide AFFF inventories, sending surveys or emails, and developing best practices.
- Six states have informational webpages or guidance specifically for fire departments and other AFFF users. Three of the states noted that this guidance is to assist in a coordinated transition to F3, helping fire departments obtain the PFAS-free foam and connecting the departments with cleanup companies for information on best practices.
- Two states created fact sheets for annual state fire school attendees, and two other states attended conferences to talk about their takeback programs.
- One state partnered with its state Department of Transportation to facilitate outreach to municipal airports on the history of PFAS use, and to conduct a series of Airport Managers' Meetings on AFFF and proposed sampling under the Superfund Pre-Remedial Program. The state collected sampling results from nearby sources that were shared with the airport managers after the investigation.
- One state provided airports with funding for input-based test boxes.
- One state wrote letters to manufacturers about recalling AFFF it sold.
- One state established AFFF user training protocol, and another conducted a PFAS-specific training as part of an annual hazardous materials training requirement on the use of AFFF for emergency purposes only.
- Other states noted partnerships with their state Departments of Emergency Management on training on the appropriate use of AFFF, conducted fire apparatus decontamination projects, or conducted other outreach actions to AFFF users on its use for emergency purposes only or about state takeback programs.

#### Examples of State AFFF-Focused Fact Sheets:

- Connecticut on Decontamination of AFFF-Impacted Fire Apparatus
- Maine on <u>Class B AFFF Firefighting Foam</u>
- Michigan on <u>Best Practices for Using AFFF</u>
- Minnesota on <u>Firefighting Foam Use</u>, <u>Replacement</u>, and <u>Disposal</u>
- New Hampshire on State Law Prohibiting PFAS in Firefighting Foam, Best Practices for AFFF Use
- New Mexico on <u>State Law Classifying PFAS Firefighting Foams as "Hazardous Waste"</u>
- New York on <u>Storage and Use of Firefighting Foams</u>
- North Dakota on <u>Precautions with Class B Firefighting Foam</u>
- Washington on <u>AFFF Guidance for Firefighting Organizations</u>

# Managing PFAS in Biosolids & Air

This section highlights state management of PFAS in sewage sludge and biosolids and in air emissions.

### Sewage Sludge and Biosolids

A number of states have been managing or are looking to manage sewage sludge and biosolids, which may be contaminated with PFAS as a result of its discharge from industrial, domestic, or commercial sources to sewer systems and subsequent accumulation in, and incomplete removal from, the solids resulting from municipal wastewater treatment processes. The three management approaches for biosolids (incineration, landfilling, and land application) each pose different challenges, including but not limited to cost, capacity, and movement through soils, groundwater, air, or leachate, which can ultimately contaminate drinking water, wildlife, and other media.<sup>25</sup> There are also a host of liability concerns, as well as challenges regarding interstate transfer of biosolids and products derived from biosolids, that point to better understanding source contributions and control as a long-term need.

Many states have undertaken biosolids regulatory and management strategies, with bans or tiered recommendations for land application, requirements about landfilling biosolids, and requirements for monitoring. Twenty-eight states collect information on where biosolids from wastewater treatment plant (WWTP) processes go (e.g., landfills, land application, or incineration) that is not already reported under CWA Section 405(d), which regulates the standards for use or disposal of sewage sludge under <u>40 CFR Part</u> <u>503</u>.<sup>26</sup> A number of states have also started a process, created a group, or considered ways to address PFAS in biosolids in different scenarios:

<sup>&</sup>lt;sup>25</sup> <u>Stakeholder Meeting Facilitation for Issues Related to PFAS and Biosolids</u>, Page 6, December 2024, U.S. EPA.

<sup>&</sup>lt;sup>26</sup> When this rule was adopted, EPA offered states the option to become delegated to administer the biosolids program if they met regulatory and enforcement requirements, enabling those states to streamline reporting of how facilities manage biosolids. Nine states (Arizona, Idaho, Michigan, Ohio, Oklahoma, South Dakota, Texas, Utah, and Wisconsin) are <u>authorized</u> through the NPDES Program to administer Part 503 regulations and to be the permitting authority for one or more management options for biosolids. EPA annually collects biosolids reports from about 2,250 larger facilities in the 41 states where EPA is the permitting authority. EPA discusses some available biosolids and sewage sludge management methods in its 2024 updated interim guidance on the destruction and disposal of PFAS and

- Twelve states are evaluating flexibility or capacity for changing the preferred biosolids management option (i.e., among incineration, landfilling, and land application).
- Twenty-one states are pursuing source reduction approaches for biosolids (e.g., using pretreatment authorities, conducting publicly-owned treatment works (POTW) influent studies, and partnering with likely industrial dischargers). Four of these states are using Clean Water State Revolving Fund (CWSRF) emerging contaminant funding from the BIL for these types of activities.
- Twelve states are developing communications products on PFAS in biosolids (i.e., using different risk communication materials on reducing PFAS at the source or PFAS in consumer products, etc.).

Thirteen states are considering changes to how they manage biosolids. A few states are looking to implement tiered approaches or risk-based levels for regulating the land application of biosolids. States are evaluating storage requirements, considering adding biosolids monitoring requirements for certain PFAS to NPDES or similar permits, gathering data on distribution, or focusing actions on source identification and reduction, among other efforts. A couple of states noted their intent on waiting for EPA to advise on best practices for sludge management. No states, other than Maine and Connecticut who have already implemented some sort of biosolids use or sales ban, are considering bans on land application at this time.



#### State Actions to Address PFAS in Biosolids

This chart shows the number of states undertaking different actions on biosolids as it pertains to PFAS and management of the sludge.

PFAS-containing materials, and in January 2025 the Agency published its <u>Draft Sewage Sludge Risk</u> <u>Assessment</u> for PFOA and PFOS.

Details on anticipated changes in states' management practices of PFAS in biosolids are provided in the <u>State Pages</u> portion of this report.

### **Air Emissions**

Air is one of the less studied and regulated environmental media pathways for PFAS exposure. While the focus of many federal and state air programs has been on emissions from chemical production sites or industrial manufacturing, PFAS can be detected in indoor air as well, resulting from PFAS in consumer products and lower air ventilation rates.

Some states have done work to analyze, collect data on, or regulate PFAS in air emissions. Thirteen states have collected (or been provided with) data on PFAS emissions from one or more facilities in their state, and ten states are working with facilities to generate data on PFAS emissions.



#### Availability of State Data on PFAS Emissions

This chart shows the number of states taking actions on PFAS emissions.

Maryland is not currently working with facilities to generate data on PFAS but noted that permit applications received for a potential source of PFAS emissions must quantify the emissions. Pennsylvania clarified that it collects data on PFAS emissions with select permittees (not statewide). Delaware noted that for all air emissions, it compares the maximum downwind concentration of a pollutant to the health-based standards and cannot issue an air permit unless that concentration is 100 times less than the health-based standard. As cited in the analytical methods section of this report, 16 states use either Other Test Method (OTM)-45 or OTM-50, although not many states have conducted air monitoring analysis yet, and therefore

data on PFAS emissions is limited.<sup>27</sup> States acknowledge that it is often difficult for a state to request that a facility test air emissions.

In its <u>Strategic Roadmap</u>, EPA commits to building the technical foundation to address PFAS in air emissions and to sharing data with states to better understand and address these upstream sources of pollution by developing monitoring approaches for stack emissions and ambient air, developing cost-effective mitigation technologies, and increasing understanding of the fate and transport of emissions. While there are currently no federal PFAS emissions standards, New Jersey, New Mexico, and North Carolina in August 2024 <u>petitioned</u> EPA to add PFOA, PFOS, HFPO-DA, and PFNA to its list of Hazardous Air Pollutants under Section 112 of the Clean Air Act. The states argue that the PFAS are air pollutants causing adverse effects to human health or the environment and noted that they hope that the Agency will consider this action under its Roadmap goal of addressing PFAS emissions.

### Permitting

The <u>NPDES program</u> is an important tool established by the CWA to help states and EPA regulate point source discharges to waterbodies.<sup>28</sup> Forty-seven of 50 states have the delegated authority for one or more components of the NPDES program, including permits, regulating federal facilities, pretreatment programs, general permits, or biosolids programs. The NPDES program also requires a federal <u>Multi-Sector General</u> <u>Permit</u> (MSGP) specifically for stormwater discharges from certain industrial activities in 29 sectors. As is the case with NPDES permits, states with permitting authority can amend (e.g., strengthen) the federal permit requirements and issue NPDES stormwater general permits modeled after EPA's MSGP.<sup>29</sup> The <u>proposed 2026 MSGP</u> would require a majority of sectors to conduct quarterly "report-only" indicator monitoring for PFAS listed in EPA Method 1633. While monitoring stormwater for PFAS under such permits can create challenges for some industries (e.g., AFFF may be used for fire training and is subject to an MSGP, but may not be considered part of the airport's industrial processes; facilities for industries like automotive shredding are required to monitor for PFAS but PFAS may be added from other process, like fabric treatment in cars), a number of states have requested that EPA include PFAS monitoring requirements in the MSGP and to develop practices to minimize PFAS introduction to stormwater.

Twenty-six states include PFAS in NPDES, MSGP, or other permits. Twenty-four states are considering implementing at least one of the recommendations from EPA's December 2022 <u>memorandum</u> to states, which provided guidance for addressing PFAS discharges through NPDES permits and through pretreatment and monitoring programs.<sup>30</sup> Recommendations for including PFAS in NPDES permits are:

<sup>&</sup>lt;sup>27</sup> OTM-45 measures 50 specific PFAS at stationary sources and can identify other PFAS that may be present in air samples, and OTM-50 measures 30 volatile fluorinated compounds in air emissions from stationary sources. EPA's <u>updated interim guidance</u> on the destruction and disposal of PFAS recommends the use of OTM-50 to collect data and reduce uncertainty about products of incomplete combustion from the thermal treatment of PFAS-containing materials.

<sup>&</sup>lt;sup>28</sup> If the waterbody is a drinking water source, the NPDWR may influence what the criteria and related permit limits are in some states.

<sup>&</sup>lt;sup>29</sup> EPA issues this permit where it directly implements the NPDES program (e.g., states without delegated authority, certain tribal reservations or federal facilities, etc.).

<sup>&</sup>lt;sup>30</sup> While a number of states were already using their water programs to control PFAS prior to the release of this memorandum (e.g., adding PFAS sampling to some NPDES permit compliance sampling inspections,

- Adding monitoring requirements for effluent and wastewater residuals (industrial) and effluent, influent, and biosolids (POTW) using EPA Method 1633;
- Incorporating best management practices for reducing PFAS (i.e., addressing discharges, addressing AFFF for stormwater permits, for pollution prevention); and
- Evaluating and imposing site-specific, technology-based effluent limits.

Most states plan to add monitoring requirements to permits. Five states already implement one or more recommendations, for at least one PFAS, consistent with the memorandum. New York implements its own <u>State Pollutant Discharge Elimination System</u> (SPDES) permit program, approved by EPA for the control of surface wastewater and stormwater discharges in accordance with, but broader in scope than, the CWA; it controls point source discharges to groundwaters, as well as surface waters. On March 15, 2023, the New York Department of Environmental Conservation released final ambient water quality guidance values for PFOA and PFOS through an update to its <u>Technical and Operational Guidance Series</u> (TOGS, or state water guidance memorandums) 1.1.1. The Department simultaneously released TOGS 1.3.13, "Industrial Permitting Strategy for Implementing Guidance Values for PFOA, PFOS, and 1,4-Dioxane," and in January 2024, released the draft TOGS 1.3.14, "Publicly Owned Treatment Works (POTWs) Permitting Strategy for Implementing Strategy for Implementing Strategy for Implementing Strategy for PFOA, PFOS, and 1,4-Dioxane," and in January 2024, released the draft TOGS 1.3.14, "Publicly Owned Treatment Works (POTWs) Permitting Strategy for Implementing Strategy for Implementing Strategy for PFOA, PFOS, and 1,4-Dioxane," and in January 2024, released the draft TOGS 1.3.14, "Publicly Owned Treatment Works (POTWs) Permitting Strategy for Implementing Guidance values identified in TOGS 1.1.1 for PFOA and PFOS into SPDES wastewater permits.

Permits and associated monitoring requirements will enable states and other entities to collect as much information on PFAS use as possible. As a result, states will need to implement compliance strategies to help industrial facilities authorized under the NPDES to meet applicable criteria and use tools like the TRI to identify PFAS sources. Information on how states include or plan to include PFAS in permits, as well as if they are implementing or considering implementing the recommendations provided in EPA's 2022 memorandum, is outlined in the table below.

requiring POTWs to submit certain information on PFAS sampling, etc.), the guidance, which updated an April 2022 memorandum to EPA regions, was intended to make it easier for states to do so, thereby better regulating discharges and assisting with general PFAS management, cleanup liability, and other considerations.

	If not already implemented, which recommendations from U.S PFAS in Permits December 2022 NPDES PFAS guidance memo is your state con implementing?				ions from U.S. EPA's our state considering	
State	Are PFAS included in NPDES permits, MSGPs, or other permits?	Capacity	Adding monitoring requirements (Methods 1621, 1633)	Incorporating BMPs for reducing PFAS	Evaluating technology- based effluent limits	N/A - Recommendations Already Implemented
Alabama	✓	Monitoring - NPDES and indirect discharge permits (For 10+ years)	✓	✓		
Alaska	$\checkmark$	Stormwater industry permits (For 5+ years)	√			
Arizona	✓	Monitoring - discharge permit for PFAS treatment (Since 2021)	√	$\checkmark$	$\checkmark$	
Arkansas						
California	✓	Monitoring and reporting - NPDES permits; Sampling and testing - existing landfill MRPs (Since 2024)	✓			
СММІ		Monitoring and discharge limits - NPDES permits (Since 2020)	✓	~		
Colorado	✓	Sampling - NPDES permits; Monitoring at POTWs - general permits requiring WPCFs (Since 2024)				$\checkmark$
Connecticut	~		~	√		
DC						

		PFAS in Permits	If not already implemented, which recommendations from U.S. EPA's December 2022 NPDES PFAS guidance memo is your state considerin implementing?				
State	Are PFAS included in NPDES permits, MSGPs, or other permits?	Capacity	Adding monitoring requirements (Methods 1621, 1633)	Incorporating BMPs for reducing PFAS	Evaluating technology- based effluent limits	N/A - Recommendations Already Implemented	
Delaware			$\checkmark$	$\checkmark$	✓		
Florida							
Georgia							
Hawaii							
Idaho	✓	(Since 2023)	$\checkmark$	$\checkmark$			
Illinois	√	NPDES permits	$\checkmark$	$\checkmark$			
Indiana							
lowa							
Kansas							
Kentucky			√				
Louisiana							
Maine							

		PFAS in Permits	If not already implemented, which recommendations from U.S. EPA's December 2022 NPDES PFAS guidance memo is your state considering implementing?			
State	Are PFAS included in NPDES permits, MSGPs, or other permits?	Capacity	Adding monitoring requirements (Methods 1621, 1633)	Incorporating BMPs for reducing PFAS	Evaluating technology- based effluent limits	N/A - Recommendations Already Implemented
Maryland	V	Monitoring - NPDES municipal wastewater individual discharge permits, NPDES industrial wastewater individual discharge permits, municipal groundwater discharge permits; PFAS identification in stormwater pollution prevention plans and pollution prevention measures - general permit for industrial stormwater; PFAS requirements - general permit for application of pesticides; Monitoring and address contamination - SIUs with pretreatment permits that use PFAS	✓	√		
Massachusetts	$\checkmark$	Monitoring - surface water discharge permits (Since 2020)	$\checkmark$	√	$\checkmark$	

		PFAS in Permits	If not already implemented, which recommendations from U.S. EPA's December 2022 NPDES PFAS guidance memo is your state considering implementing?			
State	Are PFAS included in NPDES permits, MSGPs, or other permits?	Capacity	Adding monitoring requirements (Methods 1621, 1633)	Incorporating BMPs for reducing PFAS	Evaluating technology- based effluent limits	N/A - Recommendations Already Implemented
Michigan	V	Municipal NPDES permits (Since FY2021): effluent and biosolids monitoring/reporting, local limit development for WWTPs with Industrial Pretreatment Program (IPP)/confirmed sources, effluent limits for IPP WWTPs with confirmed sources, effluent goals for some without confirmed sources, Pollutant Minimization Plan (PMP) and source evaluation programs. Industrial NPDES permits (new discharges and where treatment already exists): monitoring/reporting, technology-based effluent limits, media changeout reporting Existing industrial and industrial stormwater discharges: short-term stormwater/waste characterization study, consent order/permits with effluent goals/limits, PMPs or Corrective Action Plans, monitoring requirements	✓	✓		

		PFAS in Permits	If not already implemented, which recommendations from U.S. EPA's December 2022 NPDES PFAS guidance memo is your state considering implementing?			
State	Are PFAS included in NPDES permits, MSGPs, or other permits?	Capacity	Adding monitoring requirements (Methods 1621, 1633)	Incorporating BMPs for reducing PFAS	Evaluating technology- based effluent limits	N/A - Recommendations Already Implemented
Minnesota	1	Monitoring, effluent limits (new) - NPDES permits Monitoring (new) - NPDES general permits for industrial stormwater, maybe MS4 permits for AFFF use; Emissions testing - one Title V air permit	V	✓		
Mississippi	1	Monitoring - individual stormwater permit and state operating pretreatment permit - single facility (Since 2023)				
Missouri	✓	Voluntary monitoring for municipalities that request to have sampling and reporting conditions in permit				
Montana						
Nebraska						
Nevada			1			

		PFAS in Permits	If not already implemented, which recommendations from U.S. EPA's December 2022 NPDES PFAS guidance memo is your state considering implementing?			
State	Are PFAS included in NPDES permits, MSGPs, or other permits?	Capacity	Adding monitoring requirements (Methods 1621, 1633)	Incorporating BMPs for reducing PFAS	Evaluating technology- based effluent limits	N/A - Recommendations Already Implemented
New Hampshire	√	U.S. EPA has primacy on NPDES permits in NH. Upon reissuance - sampling requirements				
New Jersey	V	Monitoring, technology-based limits (some) in surface water permits (Since 2022), groundwater permits (Since 2021)	√	√	$\checkmark$	
New Mexico			✓	✓	$\checkmark$	
New York	V	Monitoring – SPDES permits for industrial discharges (Since 2023); SPDES permits for discharges from POTWs (Since 2024); Additional monitoring, action levels, effluent limitations (Expected)				√
North Carolina	√	Monitoring	√		$\checkmark$	
North Dakota						
Ohio						

		PFAS in Permits	If not already implemented, which recommendations from U.S. EPA's December 2022 NPDES PFAS guidance memo is your state considering implementing?			
State	Are PFAS included in NPDES permits, MSGPs, or other permits?	Capacity	Adding monitoring requirements (Methods 1621, 1633)	Incorporating BMPs for reducing PFAS	Evaluating technology- based effluent limits	N/A - Recommendations Already Implemented
Oklahoma	✓	BMPs - stormwater municipal permits (Since 2023)				√
Oregon						
Pennsylvania	~	Limits - NPDES permits; Monitoring - major sewage and industrial NPDES permits	✓			✓
Rhode Island	1	Influent, effluent, and IU monitoring - permits for POTWs (Since 2022); Source reduction BMPs - MSGPs (Since 2024); Monitoring and treatment - remediation general permit (Since 2024)	√	√	V	
South Carolina						
South Dakota		Limits or "report only" monitoring - single permit with PFAS limits so far				
Tennessee	~					
Texas						
Utah						

		PFAS in Permits	If not already implemented, which recommendations from U.S. EPA's December 2022 NPDES PFAS guidance memo is your state considering implementing?			
State	Are PFAS included in NPDES permits, MSGPs, or other permits?	Capacity	Adding monitoring requirements (Methods 1621, 1633)	Incorporating BMPs for reducing PFAS	Evaluating technology- based effluent limits	N/A - Recommendations Already Implemented
Vermont	~	Pilot treatment of landfill leachate for PFAS prior to discharge to a POTW			$\checkmark$	
Virginia			$\checkmark$			
Washington	√	Monitoring - major POTWs and industries identified in EPA's memo as permits are renewed; Monitoring for discharges to groundwater from specific industries - draft industrial stormwater general permit	√	√		
West Virginia	√	(Since 2015)	√	✓		
Wisconsin	~	Monitoring - permits for discharge of wastewater (Since 2022); Limits - PFAS in surface water (Since 2022); Limits for 2 PFAS - state hazardous air pollutant rule permits (Since 1988)				$\checkmark$
Wyoming						

This table outlines which states include PFAS in permits, in what capacity, and whether they plan on incorporating any of the major aspects of the 2022 EPA memorandum to states regarding including PFAS in NPDES permits.

### **Risk Communication**

Risk communication is a critical, and challenging, step in addressing PFAS. It is difficult to explain to general audiences what levels (e.g., parts per trillion [ppt]) of PFAS mean in terms of risk or how they are derived, as well as risk assessment and management considerations are associated with PFAS use and contamination. Given the rapidly-evolving science and toxicology; the technical uncertainties to sources and fate and transport; the patchwork of regulations; and the varying, and sometimes competing, priorities for PFAS management among stakeholders, it is important to effectively communicate about what PFAS are, how they impact human health and the environment, and what actions can and should be taken to minimize risks and exposure.

#### State PFAS Outreach



States are working to communicate to the public about PFAS in a variety of ways, sharing information about what PFAS are, results of state sampling, fish and wildlife advisories, and other topics that may help their constituents better understand potential risks to, or actions they should take to protect human health and the environment. Forty-seven states have a PFAS-specific webpage on their environmental agency website. Forty-one states have also developed PFAS fact sheets, and 25 states have mapping tools or have otherwise worked to display geographical information about PFAS sampling and contamination detected across their states. Twenty-one states have conducted trainings for drinking water and wastewater systems, staff, real estate organizations, schools, boards of health, and other entities.

States have also engaged with other entities to provide input on and highlight best practices in risk communication. For example, ITRC in 2023 published a Risk Communication Toolkit for Environmental Issues and Concerns, which uses PFAS as an example of how to develop communication plans and stakeholder outreach activities. ERIS in 2018 partnered with the Association of State and Territorial Health Officials (ASTHO) to develop a PFAS Risk Communication Hub, which highlights state-level risk communication of PFAS. ERIS compiled FAQs for different audiences and developed case studies on state-specific risk communication practices. EPA in 2024 updated its PFAS Communications Toolkit with materials for PWSs, local officials, and other entities to communicate about what PFAS are and what the agency is doing. And other stakeholders, like the American Association for the Advancement of Science, have partnered with states, federal agencies, and others to host risk communication workshops and explore effective messaging. While there are some

key themes across these actions, like the need to establish trust with communities among local officials, there are still many gaps in how to best conduct messaging about PFAS.

Details on specific public outreach activities and state PFAS webpages are provided in the <u>State Pages</u> portion of this report.

# Funding

Funding for state PFAS activities comes from a range of federal, state, academic, and other sources. This section will highlight different funding mechanisms for state actions, as well as information on cost-benefit analyses and legal settlements.

### **Priorities for Bipartisan Infrastructure Law Funding**

In November 2021, Congress passed the BIL, which provides more than \$50 billion over fiscal years 2022 to 2026 to EPA for drinking water, wastewater, and stormwater infrastructure – the single largest federal government investment in water.<sup>31</sup> Some of the funding is specifically targeted to emerging contaminants like PFAS, including \$4 billion to the Drinking Water State Revolving Fund (<u>DWSRF</u>), \$1 billion to the <u>CWSRF</u>, and \$5 billion to support small and disadvantaged communities address drinking water contamination (<u>EC - SDC Grant</u>). In April 2024, when EPA announced the final NPDWR for six PFAS, it announced that Congress authorized additional funding under the fiscal year 2024 BIL EC – SDC Grants to support testing and treatment for private well owners, who are not subject to the MCLs.<sup>32</sup> States, tribes, and communities can apply for BIL funding to support infrastructure investments across the country.<sup>33</sup>

Forty-four states have either already received funding for prioritized PFAS project(s) or have prioritized PFAS project(s) in hopes of receiving funding using BIL funds from at least one of the three pots of funding dedicated to emerging contaminants.

<sup>&</sup>lt;sup>31</sup> <u>Fact Sheet: EPA & The Bipartisan Infrastructure Law</u>, November 2021, EPA. The funding for private well owners has not yet been authorized for future fiscal years.

<sup>&</sup>lt;sup>32</sup> Processes and Considerations for Setting State PFAS Standards, Page 47, April 2024, ECOS.

<sup>&</sup>lt;sup>33</sup> While there is not a federal database outlining all BIL appropriations, EPA in <u>February 2023</u> and <u>April 2024</u> sent memorandums to the Agency's Regional Water Division Directors providing information on allotments of BIL appropriations for the EC - SDC grant in fiscal years 2022-23, and fiscal year 2024, respectively. EPA also has a <u>map</u>, current as of July 2023, that highlights a subset of investments made nationwide under the BIL and in 2024, the Agency published a <u>report</u> on progress made under the law.



#### States Using BIL Funding for PFAS Actions

This map provides an overview of which states have identified specific priorities (and/or already received funding for prioritized projects) using BIL funds from at least one of the three pots of funding (EC -SDC, DWSRF, or CWSRF).

Most states have identified projects specifically focused on reducing and/or treating PFAS contamination. However, since the three funding mechanisms are geared towards emerging contaminants broadly, several states mentioned that some of the funding they received is also directed towards manganese, 1,4-dioxane, harmful algal blooms, or other emerging contaminants. Several states specified that funding is attributed to specific projects in a Project Priority List based upon EPA pre-approved and public-notified screening criteria, as well as those outlined in a state Intended Use Plan. States provide annual reports on project updates and funding status to EPA. Some states that identified priorities specified that they are those they expect to be funded by 2026.

States' priorities for funding and/or projects that have been funded under the EC - SDC grant, DWSRF for emerging contaminants, and/or CWSRF for emerging contaminants are outlined in the table below.

State	Small or Disadvantaged Communities Emerging Contaminant Grant (EC - SDC)	Drinking Water State Revolving Fund (DWSRF) Emerging Contaminants Grant	Clean Water State Revolving Fund (CWSRF) Emerging Contaminants Grant
Alabama	Source, remediation, and consolidation projects; Emerging contaminant testing	Source, remediation, and consolidation projects; Emerging contaminant testing	Remediation of the waste streams associated with the drinking water projects
Alaska	Sample Community Water Systems for PFAS	PFAS treatment projects; Sample PWS raw water sources for PFAS; Help small utilities address emerging contaminants based on the outcome of the source water monitoring efforts; Purchase Liquid Chromatography-Mass Spectrometry equipment so that the state can analyze water samples in-state	Address PFAS in biosolids
Arizona	Support PFAS Mitigation Program efforts to assist eligible water systems with sampling, options evaluations, interconnections, and treatment system construction	Eligible projects through the states' <u>Water Infrastructure</u> Financing Authority	Eligible projects through the states' <u>Water Infrastructure Financing</u> <u>Authority</u>
Arkansas			Purchase PFAS surface water testing equipment
California	Support disadvantaged communities with drinking water treatment	Support PFAS investigation at public water systems serving disadvantaged communities	
CNMI	Sampling and mapping entry point and groundwater PFAS levels	Install GAC filters; Evaluate other treatment alternatives	
Colorado	Support drinking water systems that have already tested and have results above the NPDWR	Support drinking water systems that have already tested and have results above the NPDWR	Funding transferred to DWSRF EC program as the state has not yet received funding requests for CWSRF EC projects

State	Small or Disadvantaged Communities Emerging Contaminant Grant (EC - SDC)	Drinking Water State Revolving Fund (DWSRF) Emerging Contaminants Grant	Clean Water State Revolving Fund (CWSRF) Emerging Contaminants Grant
Connecticut	Support PWSs; Media campaigns; Develop the water sector workforce and assist private well owners with PFAS or other emerging contaminant issues	Address PFAS and other emerging contaminants in public drinking water; Staff to implement the provisions of the DWSRF EC allotment	Conduct pilot testing of PFAS removal technologies on landfill leachate in coordination with NEIWPCC
DC	Build DC's capacity for labs to perform analysis of ECs	Build DC's capacity for labs to perform analysis of ECs	Build DC's capacity for labs to perform analysis of ECs
Delaware	Identify and reduce PFAS in drinking water to levels below the NPDWR by providing financing for treatment and/or connecting communities with private wells to public water systems; Groundwater and surface water sampling of hard-rock aquifers; Statewide air dispersion modeling; Private well sampling; Cost analysis; Contaminant mitigation	Drill a new well in a confined aquifer to eliminate concerns of elevated PFAS levels at a site; Incorporate GAC (or otherwise most cost-efficient treatment) at two plant sites; Comprehensive review of treatment at a surface water treatment plant and provide necessary upgrades to storage and distribution	Wastewater treatment plant projects to eliminate PFAS
Florida		Plan and design PFAS remediation	Pilot to remediate PFAS in biosolids
Georgia	No information available - Projects managed by a separate state government financing entity	No information available - Projects managed by a separate state government financing entity	No information available - Projects managed by a separate state government financing entity
Hawaii			
Idaho		PFAS projects - undefined	PFAS projects - undefined
Illinois	Grant received - project information unavailable	Funding is currently being awarded to projects on the state's Intended Use Plans list	Funding transferred to DWSRF EC program as the state has not yet received funding requests for CWSRF EC projects

State	Small or Disadvantaged Communities Emerging Contaminant Grant (EC - SDC)	Drinking Water State Revolving Fund (DWSRF) Emerging Contaminants Grant	Clean Water State Revolving Fund (CWSRF) Emerging Contaminants Grant
Indiana	Baseline monitoring, planning and design, and treatment projects at systems identified through DWSRF voluntary sampling program	Voluntary PFAS sampling at all state Community PWSs that focused on various sizes of water systems and on surface waterbodies that are used for drinking water	Planning and design project in a system with documented PFAS in biosolids
lowa	Initial sampling; AFFF take-back program; Sampling at contaminated sites; Infrastructure projects	Infrastructure projects	
Kansas	PFAS sampling in drinking water in small utilities during initial monitoring through 2027	Replacement of wells	Pilot incineration of municipal biosolids; Treatment of influent from old military installations into municipal collection systems
Kentucky	Additional raw and finished drinking water monitoring for PFAS; Installation of a waterline for an alternative drinking water source for one community; Treatment upgrades to address PFAS in drinking water	Installation of a new regional reverse osmosis water treatment plant and granular activated carbon contactor tanks to remove PFAS from drinking water	Installation of a flood pumping station to reduce PFAS reaching the Ohio River
Louisiana			PFAS delineation and remediation at the state's Fire and Emergency Training Institute
Maine	Grant received - project information unavailable	Grant received - project information unavailable	Improvements to a sanitary district's regional PFAS treatment system; Funding for three water utilities and a solid waste utility for various PFAS solutions, wastewater infrastructure, and water pollution control projects

State	Small or Disadvantaged Communities Emerging Contaminant Grant (EC - SDC)	Drinking Water State Revolving Fund (DWSRF) Emerging Contaminants Grant	Clean Water State Revolving Fund (CWSRF) Emerging Contaminants Grant
Maryland	Address contamination exceeding NPDWR at community water systems in small and disadvantaged communities by installing new treatment systems, access to new water sources, or connections to uncontaminated systems	Address contamination exceeding NPDWR at community water systems by installing new treatment systems, access to new water sources, or connections to uncontaminated systems	Develop technology to destroy PFAS in biosolids
Massachusetts	Projects at public water systems including constructing treatment to remove PFAS; Other projects including personnel, contracts, and purchase of PFAS testing equipment for the state laboratory		
Michigan	Proactive residential drinking water sampling in disadvantaged communities and connecting residents to municipal water	Municipal water hook up for communities impacted by PFAS	PFAS treatment; PFAS source control through infrastructure rehabilitation or replacement (reduction of PFAS contaminated infiltration/inflow); Projects at municipal WWTPs (both NPDES and Groundwater Discharge), mostly at those without an Industrial Pretreatment Program and with elevated levels of PFAS in either effluent, biosolids, groundwater, and/or monitoring wells (604b BIL funds)
Minnesota			Planning and pilot testing for leachate sources going to municipal wastewater treatment facilities
Mississippi		Project information on Intended Use Plan on state Department of	

State	Small or Disadvantaged Communities Emerging Contaminant Grant (EC - SDC)	Drinking Water State Revolving Fund (DWSRF) Emerging Contaminants Grant	Clean Water State Revolving Fund (CWSRF) Emerging Contaminants Grant
		Health's Bureau of Public Water Supply website	
Missouri	Grant received - project information unavailable		
Montana			
Nebraska			
Nevada	PFAS sampling and analysis; Source water activities (hydrologic risk assessment model development, update plans to include ECs); Public communication (web-based map of PFAS results); Technical assistance (lab equipment and training, facilitated discussions w/ SDC about solutions to ECs); Research (Total Organic Fluorine [TOF] as PFAS surrogate to monitor for treatment breakthrough); Emergency mitigation and response (investigate source contamination and provide POU treatment for PFAS); Engineering (Preliminary Engineering Reports to respond to PFAS, projects to address PFAS).	PFAS projects for drinking water remediation	Funding is available but no current PFAS projects are on the state's priority list
New Hampshire	Improve drinking water infrastructure; Conduct private well sampling; Enhance laboratory capabilities at the state's public health lab; Projects focused on source water protection	Infrastructure projects to remediate drinking water through treatment or connecting to a larger public water system	Explore landfill leachate treatment alternatives

State	Small or Disadvantaged Communities Emerging Contaminant Grant (EC - SDC)	Drinking Water State Revolving Fund (DWSRF) Emerging Contaminants Grant	Clean Water State Revolving Fund (CWSRF) Emerging Contaminants Grant
New Jersey	Projects to address contamination at small and/or disadvantaged water systems	Grant received – Additional information on funds awarded and projects are available on the state's <u>Water Bank Spending</u> <u>Dashboard</u> and <u>Priority Lists</u> .	Grant received – Potential projects to remove emerging contaminants, including pilot testing
New Mexico	Initial PFAS Rule monitoring at approximately 650 eligible public water systems and outreach to system customers; Follow-up source water monitoring and assistance with treatment where contamination is found	PFAS projects at PWSs	
New York			
North Carolina	Projects to address PFAS contamination and treatment	PFAS to study and address PFAS treatment, compliance	Projects to treat PFAS in landfill leachate, other contaminated media
North Dakota			
Ohio	Sample private wells to identify accessible public water extensions and understand prevalence of PFAS in state groundwaters	Plan, design, and construct treatment and new water sources at PWSs through regionalization or production wells	Plan and construct, install lab equipment in, and plan studies to identify sources for future pretreatment projects at wastewater treatment facilities
Oklahoma	Sample and remediate PFAS for qualifying small community public water supplies; Projects partnered with DWSRF to extend funding capabilities	Treatment and sampling projects; Projects partnered with EC - SDC grant funds for infrastructure	Evaluate potential industrial sources and the impact of wastewater treatment processes
## State Allocations of BIL Emerging Contaminant Grant Funding

State	Small or Disadvantaged Communities Emerging Contaminant Grant (EC - SDC)	Drinking Water State Revolving Fund (DWSRF) Emerging Contaminants Grant	Clean Water State Revolving Fund (CWSRF) Emerging Contaminants Grant
Oregon	Initial sampling for PFAS at all small or disadvantaged communities serving less than 3,300 people in the state that have not already sampled for PFAS; Plan and design needed remediation for those water systems with detections; Planning/design/ construction projects for disadvantaged communities with PFAS detections on the existing ECs project priority list	Address and mitigate exposure to PFAS in drinking water	Projects that address ECs of concern as a primary focus or as part of a larger strategy and lead to a capital project and/or outcomes to address ECs; Monitor, mitigate, and/or treat ECs; Reduce or eliminate ECs in water systems; Purchase monitoring equipment that would determine treatment needs for addressing PFAS
Pennsylvania	Help small/disadvantaged systems complete necessary engineering to obtain permits needed to apply for Pennsylvania Infrastructure Investment Authority funding	Information about funded projects is available on <u>PENNVEST's</u> <u>website</u> , and can be filtered by project type (i.e., drinking water, wastewater, etc.), or by PFAS projects specifically by using the "Application Type" field	Funding is available but no current PFAS projects on the state's priority list
Rhode Island	Implementation of investigations identified in November 2023 Statewide PFAS Source Investigation Report; Provide treatment to impacted private wells determined by source investigations	Local technical assistance	Funding for design and implementation of landfill leachate pretreatment systems; Enhancements to laboratory capacity to support PFAS testing in wastewater
South Carolina	Planning and design studies; Interconnection projects (i.e., tying systems onto new public water sources)	Planning and design studies; Interconnection projects (i.e., tying systems onto new public water sources)	Funding transferred to DWSRF EC program
South Dakota	Grant funds requested for PFAS projects when identified	Grant received - project information unavailable	Funding transferred to DWSRF EC program as biggest needs currently pertain to drinking water

## State Allocations of BIL Emerging Contaminant Grant Funding

State	Small or Disadvantaged Communities Emerging Contaminant Grant (EC - SDC)	Drinking Water State Revolving Fund (DWSRF) Emerging Contaminants Grant	Clean Water State Revolving Fund (CWSRF) Emerging Contaminants Grant
Tennessee	Will make an announcement of the grant in Spring 2025		
Texas		Address contamination at PWSs not included under UCMR5	
Utah			
Vermont	Projects to address contamination at PWSs	Projects to address contamination at PWSs	
Virginia	Determine presence of PFAS and other ECs in drinking water, waterworks serving small and disadvantaged communities; Identify needs for small and disadvantaged community waterworks; Develop and disseminate a public outreach campaign on the presence of emerging contaminants in the state's drinking water; Address PFAS at a groundwater treatment plant; Provide a county with public water at a restaurant and a few residential properties; Other waterworks needs as they arise to address PFAS	Projects to address waterworks with PFAS contamination	Projects to address PFAS contamination
Washington	Wastewater and stormwater facility reconstruction/construction projects; PWS support	Projects in identified disadvantaged communities under state Emergency Rule definitions	Projects to address PFAS in partnership with the EC - SDC grant, including a project at a drainage system to install bioretention cells, provide treatment, and reduce flows by increasing stormwater filtration
West Virginia	Drinking water facility upgrades or studies	Drinking water facility upgrades or studies	Drinking water facility upgrades or studies

## State Allocations of BIL Emerging Contaminant Grant Funding

State	Small or Disadvantaged Communities Emerging Contaminant Grant (EC - SDC)	Drinking Water State Revolving Fund (DWSRF) Emerging Contaminants Grant	Clean Water State Revolving Fund (CWSRF) Emerging Contaminants Grant
Wisconsin	Grant funding, in conjunction with the DWSRF, for projects that address PFAS contamination in municipal drinking water systems; Grant funding for projects that address PFAS or manganese in other than municipal (OTM) and non-transient non-community systems	Principal forgiveness loan funding for projects that address PFAS contamination in municipal drinking water systems	Principal forgiveness loan funding for projects that address PFAS contamination in municipal wastewater systems
Wyoming	Statewide monitoring of PFAS in drinking water; Develop a Statewide PFAS Action Plan; Source Water Protection; Provide assistance to public water supplies to address PFAS contamination	Funding allocated to projects in Intended Use Plan	Funding allocated to projects in Intended Use Plan

This table details state priorities on PFAS projects under three pots of BIL emerging contaminant funding. Many of these projects have already been funded.

### **Funding for PFAS Research & Other Initiatives**

In addition to the BIL, state funding for PFAS sampling, treatment, and other projects can come from different sources. For example, states can apply for federal grants like the <u>EPA Multipurpose Grant</u> for states and tribes, which funds high-priority activities to complement activities funded under established environmental statutes. Funding may be available to state agencies that implement the categorical grant programs. States may also fund PFAS research, partnering with universities or other entities to better understand PFAS fate and transport, environmental uptake, treatment efficacy, and other topics. Finally, many state environmental agencies receive funding from their state legislatures that is appropriated for specific activities related to PFAS.

The table below provides information on non-BIL funding sources and funded activities for state PFAS projects.

State	Funding Source	Funding Activity
Alabama	Not available	Pilot testing for individual project-type research
	State Legislature	Emerging contaminant projects
Alaska	State Legislature	AFFF Disposal Reimbursement Program for rural communities
	U.S. EPA - Cooperative Agreement	Site discovery efforts related to releases of AFFF
Arizona	U.S. Air Force	Construct and operate a PFAS treatment system - near an Air Force base, Tucson
	ARPA	Construct PFAS treatment at a federal Superfund site - City of Tucson
	ARPA	Surface water and fish tissue sampling, site remediation, and outreach efforts
	Arizona Board of Regents (ABOR)	Conduct PFAS research related to the development of PFAS sensors and cost- effective sorbents, and on the effectiveness of ion exchange resin regeneration - in partnership with universities (UA, ASU, and NAU)
	Arizona Board of Regents (ABOR)	Examine the fate of PFAS and other contaminants in biosolids
	State Legislature	Support PFAS sampling and mitigation primarily at small and/or disadvantaged public drinking water systems
Arkansas		
California	State Legislature - AB-178, Budget Act of 2022	Develop and validate a broad-spectrum test method for the class of PFAS; Sample nearly 4,000 public water wells serving disadvantaged and several disadvantaged communities; Develop a treatment-based regulatory approach for PFAS as a class
CNMI	U.S. Department of Commerce, U.S. Economic Development Administration; U.S. Department of the Interior, Office of Insular Affairs	Install GAC treatment facility

State	Funding Source	Funding Activity
	U.S. EPA - Office of Research & Development Pilot Study	Foam fractionation and GAC regeneration
Colorado	U.S. EPA	PFAS site assessments to support fish and biosolids work
	CDPHE - PFAS Grant Program	Research on potential impacts of PFAS in ski wax, septic systems, and wildfires
	State Legislature - SB 20-218/PFAS Cash Fund	PFAS Takeback Program and PFAS Grant Program to support communities with testing, infrastructure, and emergency assistance
Connecticut	Department of Public Health	Laboratory analytical equipment, consumables and staffing
	Department of Emergency Services and Public Protection	Reimbursement of state/municipal fire departments for apparatus decontamination and AFFF disposal
	Department of Energy and Environmental Protection	AFFF takeback program; Replacement of eight regional foam trailers with new PFAS- free trailers; Conduct private well testing and treatment and provide bottled water and filtration systems where needed; Conduct environmental media testing statewide; Assist municipalities to investigate and cleanup municipally-owned properties polluted with PFAS; Manage PFAS data; PFAS rebound testing
	State Legislature	PFAS remediation of an AFFF-contaminated elementary school property - Town of Canton
	Department of Economic and Community Development	Statewide background soil study
DC	Not available	Monitor PFAS levels in groundwater and in fish tissue
	Territory Legislature	Sampling and regulation development

State Allocations of Non-BIL F	<b>Funding Sources</b>
--------------------------------	------------------------

State	Funding Source	Funding Activity
Delaware	U.S. EPA - Multipurpose Grant	Not available
	U.S. EPA	Preliminary assessment/site inspection
	Not available	Sampling technologies
	Not available	PFAS water treatment
Florida	Not available	Investigate PFAS transformations in thermal treatment of contaminated soils to assess destruction feasibility
	State Legislature	Assessments and corrective actions for fire training facilities on state-owned lands
	State Legislature	Alternative drinking water sources for private potable supply wells
Georgia	U.S. EPA - Performance Partnership Grant	Emerging contaminants; PFAS-related laboratory supplies and equipment
Hawaii	U.S. EPA - State Response Program & Multipurpose Grants	Test WWTPs, landfills, AFFF release sites; Field study of PFAS uptake into food crops
ldaho	U.S. EPA - Public Water System Supervision Grant	Conduct non-regulatory sampling at public water system sources
Illinois	U.S. EPA - Public Water System Supervision Grant	Supported contractual employees conducting PFAS sampling and assisted with assessment, and associated sampling/analytical support and supplies
	U.S. EPA - Great Lakes Restoration Initiative grant	Purchased LC-MS/MS (Liquid Chromatography -Mass Spectrometry and Liquid Chromatography -Tandem Mass Spectrometry) equipment for Illinois EPA Laboratory capable of analyzing PFAS in fish tissue (and drinking water)
Indiana	State Legislature - Indiana Code 10- 19-13	Establish a PFAS biomonitoring pilot program for firefighters as part of <u>PFAS Testing</u> <u>Pilot Program</u>

State	Funding Source	Funding Activity
lowa		
Kansas	U.S. EPA - CWA 604b funds	PFAS analyses
Kentucky	U.S. EPA - Public Water System Supervision Grant	Source water sampling study for emerging contaminants
Louisiana		
Maine	Congress - ARPA	Sample private drinking water wells and providing whole home filtration systems and ongoing monitoring of these systems
	State Legislature - Cooperative Agreements with University of Maine	Maine Department of Inland Fisheries and Wildlife and UM to conduct 3 projects evaluating PFAS exposure and impacts on wildlife health, and PFAS impacts on hunter behavior from consumption of game meat and fish
	USGS, Maine Department of Environmental Protection	Study on PFAS movement through environment
	Maine Department of Environmental Protection	Assessed landfill capacity for biosolids; Evaluated leachate treatment approaches in Maine
	Maine Department of Administrative and Financial Services, The Bureau of General Services	Study on relationship between disposal of sludge in landfills and bulking agents needed
	State Legislature - PFAS Fund for Agriculture	Maine Department of Agriculture to fund study on PFAS in agriculture - grants available soon
	State Legislature	Sludge and septage soil and groundwater investigation
	State Legislature	Increase laboratory capacity for PFAS

State	Funding Source	Funding Activity
Maryland	U.S. EPA - Multipurpose Grant	PFAS monitoring in WWTPs, fish tissue, and surface water
	U.S. EPA - Pre-Remedial Grant	Investigate potential industrial sources of PFAS
	Not available	Studies on PFAS characterization of drinking water, municipal wastewater, biosolids, fish tissue, surface water, and groundwater
	Not available	NTA PFAS analysis of drinking water and fish tissue samples
	State Legislature - SB0273	Establish a fire-fighting foam disposal program
Massachusetts	MassDEP	Conducted a study testing the effectiveness of homeowner Point of Use treatment devices (such as an under the sink treatment system) to remove PFAS - In partnership with the University of Massachusetts
	MassDEP	Research on PFAS in pesticides, which identified fluorination of containers as a PFAS source
	Massachusetts Capital Budget	Research for the PFAS biosolids plan on sludge capacity and PFAS reduction
	State Legislature	Assist specific communities with PFAS remediation over the past few years
	State Legislature	Five grant programs to public water supplies/municipalities
	State Legislature	MA State Revolving Fund for additional PFAS assistance
	State Legislature	Bolstering the AFFF Take Back Program
Michigan	State Legislature	Support MPART and its statewide PFAS initiatives
Minnesota	U.S. EPA - EnPPA & PPG Agreements	Investigate PFAS in wildlife

State	Funding Source	Funding Activity
	State Legislature	Quantify exposure and health risk of mercury and PFAS on raptors in Minnesota - Hawk Ridge and Minnesota Department of Natural Resources (DNR)
	State Legislature	Help municipal wastewater facilities, landfills, and compost facilities to address PFAS in land-applied biosolids
	State Legislature	Develop technologies to remove PFAS from point source discharge - Minnesota DNR and Dem-Con Companies
	State Legislature	Develop and examine methods for destruction of PFAS in landfill leachate - University of Minnesota
	State Legislature	Study the presence of PFAS and microplastics in agricultural supply chains and to research how to communicate ways to reduce plastic and PFAS use - University of Minnesota (UM) West Central Research and Outreach Center
	State Legislature	Develop a treatment process to use "liquid-phase plasma discharge technology" to remove PFAS in drinking water - UM Southern Research and Outreach Center
	State Legislature	Develop and test "various types of waste wood chips and fungi" to use as sequestration of PFAS at contaminated waste sites; Research into using Fungal-Wood Chip filtering system for PFAS removal - UM
	State Legislature	Design and implement a way to protect aquatic resources from PFAS migration from landfills using engineered wetland treatment systems - In partnership with St. Louis County
	State Legislature	Develop new methods to detect and sequester PFAS in lakes and rivers - UM
	State Legislature - Clean Water Fund	Assess mercury and other fish contaminants, including PFAS, and monitoring to track the status of impaired waters over time - DNR
	State Legislature - Clean Water Fund	Address emerging threats to drinking water supply and suppliers, including PFAS contamination, among other things

State	Funding Source	Funding Activity
	State Legislature - MPCA Source Identification & Reduction and Planning/Design of Treatment Technologies Grants	Identify sources of PFAS entering facilities and/or waste management facilities; Develop pollution prevention and reduction initiatives to reduce PFAS entering facilities, prevent releases, and monitor the effectiveness of these projects
	State Legislature	Determine ambient PFAS levels in Minnesota soils to help develop management strategies for PFAS-contaminated soil
	State Legislature	Identify fluorinated pesticides and pharmaceuticals that degrade into potentially persistent or toxic byproducts - UM
	State Legislature	Conduct a full-scale pilot evaluating supercritical water oxidation of biosolids and drinking water treatment residuals to destroy PFAS and recover energy in the process - Barr Engineering, City of St. Cloud, and MnTAP (UM)
	State Legislature	Identify enzymes and microbes capable of breaking down PFAS-bound soil into nontoxic elements - UM
	State Legislature	Reduce microplastics and PFAS pollution to the environment through better management of solid waste streams - UM
	State Legislature - Clean Water Fund	Test for mercury, PFAS, and other contaminants in fish and to track impaired waters - $DNR$
	State Legislature - 604b and PFA funds	PFAS Monitoring Plan efforts for Municipal Wastewater
Mississippi	U.S. EPA - Brownfield funding under 128a/104k	Sample for PFAS in at least 1 Phase 2 assessment
Missouri	Missouri Department of Natural Resources	Emerging contaminants projects, including PFAS
Montana	U.S. EPA - Multipurpose Grant	Laboratory analytical costs for PFAS samples (surface water, sediment and groundwater) and development of PFAS GIS layers (project period is from 10/01/2020 through 09/30/2022)

State	Funding Source	Funding Activity
	U.S. EPA	PFAS surface water and fish tissue monitoring
	Not Available	Public Water Supply (PWS) Program sampled emerging contaminants such as PFAS
Nebraska	U.S. EPA - Section 128(a) & Superfund Pre-Remedial Cooperative Agreements	Completed statewide inventories and databases and conducted sampling for PFAS in environmental media
	University of Nebraska Lincoln	Sample the influent, effluent, and biosolids/sludge in mechanical WWTFs throughout the state (Samples will be taken inside the disinfection season as well as outside of the disinfection season to determine the effects of disinfection on concentrations of PFAS compounds)
	University of Nebraska Lincoln	Use different sampling apparatuses to find the most user-friendly; Develop technical assistance guidance for wastewater treatment operators to sample for PFAS compounds
	State Legislature - RO Tax Credit through Dep of Revenue	Reverse osmosis systems used to address PFAS
Nevada	Not available	Develop the use of TOF as PFAS surrogate to identify potential treatment breakthrough at PWS
New Hampshire	Congress - ARPA	PFAS infrastructure projects to remediate drinking water either through treatment of connecting to a larger public water system
	State Legislature – PFAS Remediation Grant and Loan Fund	Address PFAS MCL violations at PWSs and wastewater facilities
	State Legislature – PFAS Removal Rebate Program for Private Wells	Rebates for eligible private well owners to install treatment system or for connecting to a PWS
	Not available	Shellfish/bivalve sampling; Sediment, surface water and fish tissue sampling; Garden vegetable study; Loon egg sampling; Domestic septage sampling; School-derived waste sampling; Sampling of Sludge Quality Certification holders

State	Funding Source	Funding Activity
	Not available	Contributed to the NEIWPCC Regional Sludge Study
	USGS	Soil & sludge leachability study
New Jersey	U.S. EPA - Performance Partnership Agreement	Research related to PFAS occurrence, treatment and removal of PFAS in wastewater, novel treatment of PFAS in water samples using plasma and electrochemical processes, and assessment of PFAS in air and precipitation
	State - Specific Source Not Available	Research that supports fish consumption advisories, a statewide survey of PFAS in soils, a study on the efficacy of the synthetic precipitation leaching procedure (SPLP) for PFAS compounds, development of bioaccumulation factors in freshwater and saline fish species, PFAS occurrence and transport through vegetation, and track down of PFAS from unknown discharges, analytical/synthetic chemistry, and developmental toxicology studies related to the alternative PFAS used or formed at Solvay
	State Legislature	Reimbursement of eligible municipalities for cost of replacing AFFF
New Mexico	Not available	Baseline investigations of PFAS in drinking water sources (groundwater and surface water), and private well water and blood surveillance sampling near a known PFAS groundwater plume at Cannon Air Force Base (AFB) and offsite
	State Legislature	Private well sampling
	State Legislature	Groundwater sampling, modeling and ecological sampling around Cannon and Holloman AFBs
New York	Federal - Specific source not available	Monitoring ambient surface water for PFAS in lakes and streams
	U.S. EPA - Brownfield State Response BIL Grant	Cleanup projects through the state Brownfield Cleanup Program and at EPA-lead Superfund sites for PFAS and other contaminants
	State Legislature - Clean Water Infrastructure Act	Address emerging contaminants generally, as well as PFAS contamination at state Superfund sites

State	Funding Source	Funding Activity
North Carolina	Not available	Toxicology research; Wildlife monitoring; Fish consumption advisories; Fate and transport
	State Legislature	Specific positions related to PFAS work
North Dakota	North Dakota State University	Research on PFAS in biosolids and the uptake into plants
Ohio	U.S. EPA - Great Lakes Restoration Initiative funding	Not available
	State Legislature	Sample PFAS in Ohio's large rivers as part of the H2Ohio Rivers Program
Oklahoma	U.S. EPA - Multipurpose Grants	Provide the Oklahoma DEQ State Environmental Laboratory Division with laboratory equipment capable of analyzing PFAS in drinking water
Oregon	U.S. EPA - Columbia River Basin Restoration Funding Assistance Program	Safeguard waterways from pesticides and mercury; Clean up distressed properties in communities historically impacted by toxic pollutants; Implement actions to address PFAS; Develop diverse partnerships to advance innovative toxic reduction or prevention activities
	U.S. EPA - Columbia River Basin Toxics Lead Reduction Grant	Finalize the Department of Environmental Quality's strategic plan for addressing PFAS, prioritizing implementation activities and administering funds to implement priority activities
Pennsylvania	U.S. EPA - Multipurpose Grants	Review source test protocols and test reports for PFAS in air
	PADEP	Studied the presence of PFAS in landfill leachate for some landfills in Pennsylvania
	PADEP	Clean Water Program monitoring for PFAS in surface waters
Rhode Island	U.S. EPA - 604b Water Quality Planning Grant	Ambient surface water monitoring for PFAS
South Carolina	Federal - Specific Source Not Available	Review of DoD and DOE PFAS investigations

State	Allocations	s of Non-BIL	Funding	Sources
-------	-------------	--------------	---------	---------

State	Funding Source	Funding Activity
	State Legislature	PFAS activities related to large systems, small systems and private wells
South Dakota		
Tennessee		
Texas		
Utah	U.S. EPA - Multipurpose Grant	PFAS testing in Jordan River
	Not available	PFAS in fish tissue for consumption advisories and evaluation of wastewater and other sources
	Not available	Development of program for consumption advisories for PFAS including fish and waterfowl testing
Vermont	Not available	Study of public water system treatment efficacy
	State Legislature - Contaminants of Emerging Concern Fund	Address PFAS contamination at public water systems before federal funds became available for this purpose
Virginia	State Legislature - HB30 Item 280 #1c	Conduct a cost analysis of implementing federal PFAS regulations for Virginia local water systems and implementing pending U.S. EPA Copper Rules for water system lead service lines; Publish report with the results of the cost analysis, possible funding models, and identify federal funding that may be available - Virginia Department of Health
	State Legislature	Monitored ambient surface waters and groundwater
	State Legislature	Three staff positions to support implementation of the 2024 PFAS legislation to identify sources of PFAS in public drinking water supplies
	State Legislature	Study emerging contaminants
Washington	Not available	Safer alternatives to PFAS in food packaging and certain consumer products

State	Funding Source	Funding Activity
	State Legislature	Cleanup and remediation activities at specified sites, alternatives assessments, and an Environmental Impact Statement for AFFF disposal
West Virginia	U.S. EPA - Environmental Justice Government-to-Government Grant	Not available
	Not available	Tested the raw water for every public drinking water in the state as well as the finished water for the public drinking water sources that had the highest hits
Wisconsin	Not available	Ambient levels of PFAS in shallow drinking water wells
	State Legislature - PFAS Trust Fund	Not available
	State Legislature	AFFF Collection and Disposal Program
	Diversion from Existing Funding	Temporary in-home water services
Wyoming	State Legislature	Full-time position to coordinate emerging contaminant activities, the primary focus of which is PFAS
	U.S. EPA - Clean Water Act Section 106 & Multipurpose Grant funds	Supported groundwater monitoring
	U.S. EPA - Clean Water Act Section 106 funding	Collect surface water samples and fish tissue samples as part of the National Aquatic Resource Surveys
	U.S. EPA	Analyze stream and river ambient samples for PFAS - In partnership with EPA Region 8 laboratory

This table provides information on state funding sources for PFAS actions and associated activities the funding targeted or will target.

#### **Economic Impact & Cost Analyses**

Costs associated with PFAS research, remedial, and regulatory actions are significant. Identifying and cleaning up contamination across environmental media can cost states, federal agencies, utilities, and others millions of dollars, with expenditures targeting actions such as investigation of PFAS releases; sampling; monitoring; installing treatment technologies; storing AFFF; certifying labs, analyzing samples, and other research; establishing standards and rulemaking processes; communicating about risk; paying for staff hours; tracking fate and transport; and more.<sup>34</sup>

Sixteen states have conducted cost-benefit analyses and seven states are required to analyze costs spent on PFAS activities as part of administrative procedures for developing regulatory or advisory guidance, compliance initiatives, or defining economic impact of overall state actions. Ten states are planning to consider PFAS costs.



#### **States Analyzing PFAS Expenditures**

This map shows the distribution of state requirements or actions related to conducting cost-benefit analyses on, or considering costs of, PFAS actions.

<sup>&</sup>lt;sup>34</sup> <u>Processes and Considerations for Setting State PFAS Standards</u>, Page 46, April 2024, ECOS.

At a glance:

- 6 states spent a cumulative total of \$57,050,000 on PFAS activities and estimate that \$1,028,500,000 will be expended for their future actions related to investigation, treatment, cleanup, remediation, full-time employees, and more.
- States report that most lab sample matrices cost between **\$275 and \$500 per sample**.
- The Minnesota Pollution Control Agency conducted a <u>study</u> on potential statewide PFAS treatment and destruction costs and estimated that over 20 years, it would take an estimated \$14-28 billion to remove and destroy PFAS from wastewater. The study cited that PFAS can be *bought* for \$50-1,000 per pound, but costs between \$2.7-18 million per pound to remove and destroy from municipal wastewater, depending on facility size, emphasizing the need to consider upstream solutions.

While cost-benefit analyses are typically performed for individual state rulemakings, some states provided specific totals spent on full-time employees dedicated to PFAS work, AFFF takeback programs, characterization and remediation, sampling, drinking water mitigation, infrastructure, and other activities. Details on specific cost estimates are provided in the State Pages portion of this report.

## **Legal Settlements**

States may be engaged in, or aware of, lawsuits and settlements with PFAS manufacturers and/or users. Eight states have received money from legal settlements, and a few others are aware of lawsuits in the state (e.g., via utilities), or are part of lawsuits or pending settlement discussions (e.g., on behalf of state Attorneys General against manufacturers due to PFAS contamination). Funding for state environmental agencies from legal settlements is directed to staff work hours to enforce interim consent orders against manufacturers, environmental media assessments, research and development initiatives, natural resource restoration, reimbursement of previously-incurred investigation and remediation costs, treatment solutions; and/or supporting impacted communities. A few notable lawsuits include:

- In February 2018, Minnesota settled a <u>lawsuit</u> with the 3M Company for \$850 million to invest in drinking water and natural resource projects in the Twin Cities east metropolitan region. In May 2023, Minnesota settled a <u>lawsuit</u> with Douglas Corporation for \$1.375 million for natural resource damages in three metropolitan area lakes.
- In February 2022, Colorado filed a <u>lawsuit</u> seeking compensation from PFAS manufacturers for harm to Colorado's residents, lands, and natural resources, including water supplies.
- In November 2023, Ohio settled a <u>lawsuit</u> with DuPont for **\$110 million** over contamination from its Washington Works plant in Parkersburg, WV.
- In 2024, New Jersey finalized the settlement of its <u>lawsuit</u> against Solvay for discharges at and from its West Deptford plant for a total of approximately **\$393 million** in remediation, natural resource damages, and funding of remedial projects.

A January 2025 article contends that there may be an uptick in litigation as more becomes known about PFAS health and environmental impacts, citing the European Union's 2023 proposed ban on PFAS and the subsequent impacts on manufacturing sectors, as well as the TSCA Section 8(a)(7) PFAS reporting

obligations.<sup>35</sup> A number of states are also engaging in discussions on liability; for example, ratepayers should not bear the costs for PFAS treatment at utilities where contamination comes from upstream manufacturing sources. As more states investigate PFAS contamination, there will be an increased focus on source control and conversations around data and PFAS fate and transport.

## **Next Steps**

## **State Priorities**

ECOS asked states to identify their biggest PFAS priorities for the next year. States want to focus on implementing the NPDWR, assessing PFAS levels in drinking water and other media, testing private wells, developing action plans, and implementing strategies for PFAS in biosolids. Priorities were categorized, tallied, and are displayed in the word cloud below.

State PFAS Priorities for 2025-2026

## **Data Collection** Permitting Strategies schar Biosoli osa apacity em Imp ١Ø Source Identif cation / Minimization er System Monitoring Uptake in Food Public Sma VST **Fish Tissue Sam** sories onsur DutreachCleanup Liability ducation

This word cloud shows what states identified as their biggest priorities for the next year, with bigger words representing topics that more states identified.

<sup>&</sup>lt;sup>35</sup> <u>Pulling the Threads of the 'Complicated Patchwork of Federal and State Law' around PFAS Class Action</u> <u>Lawsuits</u>, TSCAblog, January 2025, Bergeson & Campbell LLC.

## **State Needs from Federal Government**

ECOS asked states to identify an action the federal government could take to help states best tackle PFAS challenges. The most common responses advocated for:

- **Guidance on destruction and disposal:** states would like the federal government to provide definitive guidance on destruction and disposal, including guidance on disposal of PFAS waste, destruction at a large scale, and cost-effective methods that can be consistently used across states.
- **Emphasis on source control:** states would appreciate source control strategies and a focus on mitigating the impact from PFAS sources to avoid liability downstream (e.g., PWSs, etc.).
- Increased funding: states would like for the federal government to maintain funding through the BIL, the Superfund program, DoD, and other avenues, while also advocating for increased funding to support treatment at PWSs, response to private wells that exceed the NPDWR, agricultural operations, PFAS actions in disadvantaged communities, state capacity to implement federal requirements, source water protection programs, exposure reduction, and research (e.g., for testing, monitoring, cleanup, developing safer alternatives, etc.).

States ask that the federal government establish additional regulatory standards (e.g., human healthrecommended water quality standards, risk-based remediation standards for soil and groundwater, etc.) to help compel investigations and cleanup, and to back the standards with resources for states to implement and enforce them. To that end, targeted and direct risk communication materials and best practices would help states talk to the public. States would like for the federal government to develop testing requirements and criteria for PFAS in air emissions, guidance on biosolids management and strategies for PFAS contamination at farms, and guidance on PFAS in consumer products using a risk-based approach. Expanded research, development of additional test methods, and improved understanding of PFAS exposures and toxicities will help states looking to better understand and further regulate PFAS. One state also suggested that federal agencies develop and publish for states a list of staff and offices that can answer technical questions, including information on their areas of expertise and on when and how states can contact them. States are looking for consistency and support to implement federal programs and build capacity to tackle PFAS challenges.

## State Needs from ECOS

ECOS asked states to identify an action ECOS could take to help states best tackle PFAS challenges. The most common responses advocated for the same as those for the federal government, but with different nuances:

- **Guidance on destruction and disposal:** states would appreciate continued advocacy for national guidance on treatment technologies and methods to accompany regulations and unify state efforts in this area.
- **Emphasis on source control:** states would like assistance with identifying and developing source control strategies, best practices for source identification, and similar actions to help states more efficiently target programs to remediate PFAS upstream.

93

• **Increased funding:** states continue to look to ECOS to encourage the federal government to build state capacity and to increase funding for PFAS actions both to comply with federal rules and to enable states to implement policies to improve public health and the environment.

States ask that ECOS continue to foster coordination and knowledge sharing among states and federal agencies, and with Congress, and to build upon efforts like this compendium to share information on key initiatives, private well testing approaches, PFAS sampling, and other activities at both the state and federal levels. States would appreciate more assistance with developing educational materials and risk communication tools for working with industries, the public, and other entities. Finally, states would like to continue to engage in conversations on topics like biosolids and air emissions, and would welcome a PFAS conference hosted by ECOS.

## Conclusion

States play a critical role in implementing federal regulations, developing policies and science, and advocating for programs to improve public health and the environment. As states continue to tackle PFAS challenges, they will build on the successes and lessons learned from other states and stakeholders. The information provided in this compendium can help states identify others with similar or new programs that they may wish to implement and can help other stakeholders understand the leadership role states have taken on PFAS. Although programs vary and there is a great deal of research yet to be conducted on PFAS, states are actively engaged in actions to reduce contamination and communicate with the public. ECOS hopes this compendium will help states and other regulators, businesses, and communities identify best practices and needs related to PFAS. The association will continue to develop resources and advocate for mechanisms that build on state capacity to investigate and remediate PFAS contamination.

State Pages

## Alabama

Alabama Department of Environmental Management <u>PFAS Webpage</u>



## **PFAS DEFINITION**

Plans to formally define PFAS upon regulatory requirements, if deemed appropriate, and references EPA's definition for now.

#### **PFAS PRIORITIES**

Continuing its assessment of PFAS levels in discharges, levels in drinking water, and levels in the environment.

#### **PFAS MONITORING**



**Public Water Systems** 

Private Wells

)

Groundwater

Surface Water

Soil

Landfill Leachate

Alabama has required facilities to test certain landfill leachate (landfills associated with PFAS manufacturers and other expected elevated level sources). The state has conducted surface water testing, and required all drinking water sources to be tested from 2020-2022, and some sources are required to monitor for PFAS on a routine basis. Alabama has required facilities to conduct environmental characterization and assessment of certain known and suspected PFAS release sites (e.g., at PFAS manufacturing sites and disposal site, military installations, etc.).

### **QUANTIFYING REDUCTION**



**PFAS Levels in Drinking Water** 



Number of Fishing Advisories/Impaired Waters



PFAS Levels in Wastewater Discharges

PFAS levels in drinking water: based upon installation of controls installed by systems.

Number of advisories/impaired waters: The state currently has one waterbody impaired for PFOS due to fish advisory.

PFAS levels in wastewater: based upon installation of controls and/or minimization plans required through enforcement or NPDES permitting.

## Alaska

Alaska Department of Environmental Conservation <u>PFAS Webpage</u>



## **PFAS DEFINITION**

Does not address PFAS as a group but lists individual compounds, PFOS and PFOA, separately in regulations.

#### **PFAS PRIORITIES**

The biggest priority for the state's Drinking Water Program is to complete baseline monitoring for PFAS for Community Water Systems.

## **PFAS MONITORING**



Public Water Systems

## **PFAS LEGISLATION**

<u>SB67</u>: Relating to firefighting substances; and providing for an effective date.

## **QUANTIFYING REDUCTION**



**PFAS Levels in Drinking Water** 

Number of Facilities/Sites That Have Conducted PFAS Cleanup

## AFFF TAKEBACK PROGRAM

Reimbursement program for disposal of AFFF, beginning January 2025.

## **PFAS IN PRODUCTS**



Phase-outs in State Purchases

This applies specifically to AFFF.

## Arizona

Arizona Department of Environmental Quality <u>PFAS Webpage</u>



## **PFAS ACTION PLAN**

Access <u>here</u>. Updated annually or as necessary.

## **PFAS MONITORING**



**Public Water Systems** 

**Private Wells** 

Groundwater

Surface Water

Soil

#### **PFAS PRIORITIES**

Continuing to focus on its PFAS mitigation plan, which is helping to ensure that the state's small water systems are provided with free sampling to meet initial monitoring requirements under the NPDWR and that impacted systems are provided PFASmitigation assistance, including alternatives analyses and construction of treatment where necessary.

### **PFAS LEGISLATION**

<u>SB1526</u>: An act amending title 36, chapter 13, Arizona Revised Statutes, by adding article 9; relating to firefighting foam regulation.

#### **QUANTIFYING REDUCTION**



Amount of PFAS Collected

The Population Served Drinking Water That Meets EPA's NPDWR

## AFFF TAKEBACK PROGRAM

Developed a <u>2023 Pilot Program</u>, which has not been implemented as a full-scale effort. The pilot program surveyed fire departments about AFFF use and then worked directly with 52 departments to collect 9,910 gallons of AFFF and replace them with 6,510 gallons of PFAS-free alternative foam. The foam was disposed of at a hazardous waste landfill in Nevada.

## Arizona (Cont.)

Arizona Department of Environmental Quality <u>PFAS Webpage</u>



## **COST-BENEFIT ANALYSIS**

Recently conducted an estimate of its PFAS spending, which represents nearly all of the PFAS spending by state government to date. Federal funding (e.g. BIL grant funding) was not included in the estimate. 2017-2022

 ~\$420K spent on PFAS sampling and screening efforts (drinking water, groundwater, wastewater, and biosolids).

2020 and 2021

 ~\$2.5M spent on PFAS plume characterization and remediation of PFAS threatening a drinking water wellfield near a military base.

2023

• ~\$400K spent on an AFFF takeback and replacement program.

2024

- ~\$600K on activities related to its PFAS drinking water mitigation program (sampling, interconnections, treatment)
- \$4.4M expected to be spent on drinking water mitigation over the next 1-2 years.

## Arkansas

Arkansas Department of Energy and Environment



## **PFAS LEGISLATION**

<u>Act315/HB1351</u>: An Act Concerning the Use of Certain Chemicals in Firefighting Foam.

## **PFAS PRIORITIES**

Plans to continue to monitor proposed federal regulation.

## California

California Environmental Protection Agency <u>PFAS Webpage</u>



#### **PFAS DEFINITION**

Does not plan to define PFAS due to different directives within CalEPA and sister agencies. The California State Legislature references the definition of "Perfluoroalkyl and polyfluoroalkyl substances' or 'PFAS' to mean a class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom."

The state's Department of Toxic Substances Control's Safer Consumer Products Program, which regulates PFAS-containing carpets and rugs, as well as treatments for converted textiles or leathers, uses the PFAS definition in Buck et al. (2011). This definition originates from Biomonitoring California, which designated all PFAS as Priority Chemicals for biomonitoring in California, thus automatically adding this definition to the Safer Consumer Products list of Candidate Chemicals.

## **PFAS MONITORING**



**Public Water Systems** 

Groundwater

Surface Water

Soil

Ambient monitoring is performed of surface water in selective regions in the state for CECs, including PFAS. Other monitoring of groundwater and soil is performed as part of source site investigations.

#### **PFAS LEGISLATION**

AB347: An act amending Section 108945 of, to add Chapter 3 (commencing with Section 108075) to Part 3 of Division 104 of, to repeal the heading of Chapter 3 of Part 3 of Division 104 of, and to repeal Article 7 (commencing with Section 108087) of Chapter 3 of Part 3 of Division 104 of, the Health and Safety Code, relating to consumer protection. including household product safety, toxic substances, and testing and enforcement. AB2515: An act to add Article 15 (commencing with Section 25258) to Chapter 6.5 of Division 20 of the Health and Safety Code, relating to public health, including menstrual products and PFAS. AB2771: An act to add Sections 108981, 108981.5, and 108982 to the Health and Safety Code, relating to public health, including cosmetic products and safety. AB1817: An act to add Chapter 13.5 (commencing with Section 108970) to Part 3 of Division 104 of the Health and Safety Code, relating to public health, including product safety of textile articles and PFAS. AB652: An act to add Chapter 12.5 (commencing with Section 108945) to Part 3 of Division 104 of the Health and Safety Code, relating to product safety of juvenile products and chemicals/PFAS. AB1200: An act to add Chapter 15 (commencing with Section 109000) to Part 3 of Division 104 of the Health and Safety Code, relating to product safety, including plant-based food packaging, cookware, and hazardous chemicals. B1044: An act to add Sections 13029, 13061, and 13062 to the Health and Safety Code, relating to fire protection, including firefighting equipment/foam and PFAS. AB178: An act to amend the Budget Act of 2022 relating to the state budget, and making an appropriation budget bill.

## California (Cont.)

**California Environmental Protection Agency PFAS Webpage** 



## **QUANTIFYING REDUCTION**

**PFAS Levels in Drinking Water** 

Number of Facilities/Sites That Have Conducted PFAS Cleanup

**DTSC-Safer Consumer Products** Program; Banning PFAS from carpets/rugs and treatment products "helped prevent up to 100 metric tons of PFASs from reaching California homes and workplaces each year"

## CHANGES IN BIOSOLIDS MGMT.

Has a General Order that regulates land application of biosolids. It includes the minimum standards established by the Part 503 Rule and expands upon them to fulfill obligations to the California Water Code. Upon acceptance, the discharger may land apply biosolids at an agricultural, horticultural, silvicultural. or land reclamation site as a soil amendment under the General Order. However, the applicability of the land application under this Order does not include CECs, including PFAS.

## **PFAS PRIORITIES**

Will begin the process for the establishing MCLs for PFOA, PFOS, and PFHxS in drinking water.

## **PFAS IN PRODUCTS**



Sales Bans

**Use Bans** 



Labeling Requirements

Phase-outs in State Purchases for Food Packaging

The Department of Toxic Substances Control regulated carpets and rugs containing PFAS and treatment products for converted textiles or leathers containing PFAS as Priority Products and continues to investigate other product categories where PFAS are used for possible regulation as Priority Products.

## **COST-BENEFIT ANALYSIS**

Conducted: CA has FTEs dedicated to enforcement of its regulation but doesn't consider FTEs for rule development in cost estimates.

# **Commonwealth of the Northern Mariana Islands**

CNMI Bureau of Environmental and Coastal Quality



## **PFAS DEFINITION**

"PFAS" means per-or polyfluoroalkyl substances and pertains to all man-made chemicals that contain at least one fully fluorinated carbon, orCnF2n+1 alkyl moiety.

#### **PFAS MONITORING**



**Public Water Systems** 

## **QUANTIFYING REDUCTION**



**PFAS Levels in Drinking Water** 

## **PFAS PRIORITIES**

Will complete its groundwater modeling and prioritize treatment facilities at appropriate systems.

#### **PFAS LEGISLATION**

Public Law 22-06/SB22-40: To protect the people of the Commonwealth of the Northern Mariana Islands from Per and Polyfluoroalkyl Substances (PFAS) contamination.

#### AFFF TAKEBACK PROGRAM

Considering.

#### **COST-BENEFIT ANALYSIS**

Plans to consider; estimated \$2 million/year moving forward.

## **PFAS IN PRODUCTS**



Looking into Banning Products

## Colorado

Colorado Department of Public Health and Environment <u>PFAS Webpage</u>

#### **PFAS DEFINITION**

Definition from HB 19-1279 that is also used in other bills banning the sale and distribution of certain products containing intentionally added PFAS: "Perfluoroalkyl and polyfluoroalkyl substances" or "PFAS chemicals" means a class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom.

#### **PFAS MONITORING**

Public Water Systems

Private Wells

Groundwater

Surface Water

Soil

Sediment

Biosolids

Fish & Wildlife

### **PFAS PRIORITIES**

Will implement its 2024 PFAS Action Plan.

#### **PFAS LEGISLATION**

HB22-1345: Concerning Measures To **Increase Protections From Perfluoroalkyl And Polyfluoroalkyl Chemicals** SB24-081: Concerning Measures To Increase Protections from Perfluoroalkyl And **Polyfluoroalkyl Chemicals** HB19-1279: Concerning The Use Of Perfluoroalkyl And Polyfluoroalkyl Substances, And, In Connection Therewith, Making An Appropriation HB20-1119: Concerning The Authority Of The State Government To Regulate Perfluoroalkyl And Polyfluoroalkyl Substances, And, In Connection Therewith, Making An Appropriation SB20-218: Concerning Measures By The **Department Of Public Health And Environment To Protect The Public From** Certain Hazardous Substances, And, In **Connection Therewith, Making An** Appropriation

#### **PFAS ACTION PLAN**

Access <u>here</u>. Updated in 2024 after stakeholder engagement.

## Colorado (Cont.)

Colorado Department of Public Health and Environment <u>PFAS Webpage</u>





Amount of PFAS Collected PFAS Levels in Drinking Water



PFAS Levels in Fish & Wildlife



Number of Fishing Advisories/Impaired Waters



PFAS Levels in Wastewater Discharges

Number of Facilities/Sites That Have Conducted PFAS Cleanup

## AFFF TAKEBACK PROGRAM

Pays eligible Colorado fire departments and commercial service airports \$40 per gallon to take unspent firefighting foam containing PFAS out of service and safely store it until the state knows of a safe disposal method and can collect it for transport and safe disposal. Participating entities are providing interim storage until a safe disposal method is identified.

#### **PFAS IN PRODUCTS**



Sales Bans

Use Bans



Labeling Requirements

Phase-outs in State Purchases

Sales and distribution bans and labeling requirements through HB 22-1345 and SB 24-081

Certain use bans on firefighting foam containing PFAS in HB 19-1279, HB 20-1119, HB 22-1345

From HB 22-1345: Purchasing preference for environmentally preferable products. "Environmentally preferable products" means products, including products that do not contain intentionally added PFAS chemicals, that have a lesser or reduced adverse effect on human health and the environment when compared with competing products that serve the same purpose.

## **COST-BENEFIT ANALYSIS**

Plans to consider.

## Connecticut

Connecticut Department of Energy & Environmental Protection <u>PFAS Webpage</u>

#### **PFAS DEFINITION**

Section 1.(a)(1) of Public Act No. 21-191: (1) "Perfluoroalkyl or polyfluoroalkyl substance" means a class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom.

#### **PFAS MONITORING**



Public Water Systems

Private Wells

Soil

Groundwater

Surface Water

Biosolids

Landfill Leachate

Fish & Wildlife

Influent, Effluent, Sludge, and POTW Scrubber Water. Non-POTWs

Connecticut has conducted select monitoring of the above media, but a routine monitoring program is not yet established for any media.

#### PFAS ACTION PLAN

Access <u>here</u>. Last updated when published in 2019.

#### **PFAS PRIORITIES**

Department of Energy and Environmental Protection: To conduct a statewide background soil and groundwater study, establish PFAS surface water protection criteria and update existing remediation criteria, and continue to conduct private residential well testing/provide treatment in communities with known PFAS sources.

Department of Public Health: To adopt and begin implementation of the National Primary Drinking Water Rule for PFAS and to support small and disadvantaged communities to address PFAS in public drinking water.

#### **PFAS LEGISLATION**

<u>Public Act No. 21-191</u>: An Act Concerning the Use of PFAS in Class B Firefighting Foam <u>Public Act No. 23-74</u>: An Act Establishing an Account in the General Fund to Provide Grants to Towns that Need PFAS Testing and Remediation

<u>Public Act No. 24-59</u>: An Act Concerning the Use of PFAS in Certain Products

#### **COST-BENEFIT ANALYSIS**

Conducted; the economic impact has not yet been defined/evaluated, several million dollars in bond commission funding have been allocated to support PFAS related work since 2020.

## **Connecticut (Cont.)**

Connecticut Department of Energy & Environmental Protection <u>PFAS Webpage</u>

## **PFAS IN PRODUCTS**



Sales Bans

Phase-outs in Consumer Products

**Phase-outs in State Purchases** 



Labeling Requirements

Refer to <u>Public Act No. 24-59</u>: An Act Concerning the Use of PFAS in Certain Products.

Phase-out of State Purchases: All statepurchased firefighting foam is now PFAS free; Dept. of Administrative Service contracts prohibit/limit PFAS in certain items (e.g., food service ware).

## AFFF TAKEBACK PROGRAM

Phase 1: AFFF concentrate container takeback program. Connecticut hired a consultant to organize 'milk run' collections from municipal and state fire departments.

Phase 2: Eight regional firefighting foam trailers were replaced by the state with new trailers containing PFAS-free foam; old trailers are in the process of being drained and contaminated tanks/components disposed of. Phase 3: Reimbursement program for state and municipal fire departments for apparatus foam draining and decontamination. Fire department hires a contractor to conduct the work and submits to the state for reimbursement.

All AFFF concentrate, PFAS-contaminated rinsewater and PFAS-contaminated apparatus components have been or will be sent to a Class C hazardous waste landfill for disposal.

## **QUANTIFYING REDUCTION**



Amount of PFAS Collected



**PFAS Levels in Drinking Water** 

PFAS Levels in Fish & Wildlife



Number of Private Wells Tested & Treatment Systems Installed

AFFF Takeback Program Gallons of Concentrate Collected & Number of Facilities that have Transitioned to Fluorine Free Foams

Other than AFFF not actively tracking progress towards reduction yet as the state is still working to establish baselines in most cases.

## CHANGES IN BIOSOLIDS MGMT.

Ban on use/sale/offer for sale of soil amendments derived from wastewater sludge or biosolids was passed in 2024. DEEP is currently working with the state Department of Agriculture to evaluate how to implement/enforce this ban.

## **ADDITIONAL LINKS**

DPH PFAS Webpage PFAS Information for Public Water Systems Fish Consumption Advisory

## **District of Columbia**

D.C. Department of Energy and Environment



## **PFAS DEFINITION**

To date, DC's efforts have focused on a subset of PFAS, including PFOS, PFOA, PFNA, and PFUnDA.

## **PFAS PRIORITIES**

Plans to consider.

Revising its fish consumption advisories upon EPA's release of their screening values for PFAS compounds.

## **PFAS MONITORING**



Groundwater

Fish & Wildlife

## **CHANGES IN BIOSOLIDS MGMT.**

**COST-BENEFIT ANALYSIS** 

Partnering with regional wastewater utility to first measure PFAS in biosolids and quantify risk associated with biosolid applications. Changes to biosolids management would be considered if that risk analysis shows it is warranted.

## QUANTIFYING REDUCTION

Still early into any PFAS monitoring, beginning to collect baseline data and understanding the nature and extent of PFAS contamination in the District. DC has not been collecting data long enough to provide a point of comparison that would allow them to evaluate if PFAS reductions are occurring.

## Delaware

Delaware Department of Natural Resources and Environmental Control <u>PFAS Webpage</u>



#### **PFAS DEFINITION**

Most referenced: A class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom

Will define PFAS upon promulgation of legislation.

#### **PFAS MONITORING**



**Private Wells** 



Surface Water

Soil

Sediment

Biosolids

Fish & Wildlife

## **PFAS ACTION PLAN**

In development.

## **COST-BENEFIT ANALYSIS**

Plans to consider.

#### **PFAS PRIORITIES**

Delaware has 3 Priorities: Protect public health, identify sources, and eliminate sources. Protecting public health from exposure to PFAS through consumption, continued identification and communication of sources through data collection/analysis and data sharing, and working to eliminate sources and pathways of exposure.

#### **PFAS LEGISLATION**

House Concurrent Resolution 20: Requesting The Delaware State Fire School To Develop A Program For The Disposal Of Aqueous Film Forming Foam Currently In The Possession Of The State Of Delaware Fire Companies And Departments HB8: An Act To Amend Title 29 Of The Delaware Code Relating To Drinking Water

#### **QUANTIFYING REDUCTION**



**PFAS Levels in Drinking Water** 



PFAS Levels in Fish & Wildlife

D PF/

PFAS Levels in Air Emissions

For most media (with regard to monitoring), there hasn't been enough data collected over any period of time to quantify reduction progress. The above topics reflect how the state would like to measure.
# Delaware (Cont.)

Delaware Department of Natural Resources and Environmental Control <u>PFAS Webpage</u>



### AFFF TAKEBACK PROGRAM

Reclaimed all the foam from every fire department in the state. It has since ended. A fire department was provided an opportunity to submit AFFF, and receive F3 in return (it was a gallon for gallon exchange). Tanks were cleaned and reclaimed with new safe alternative. Cost was born by the state. AFFF was appropriately removed by a state approved vendor.

### CHANGES IN BIOSOLIDS MGMT.

Primarily focusing on source identification and reduction, and is also conducting sampling to determine if exposure to drinking water is occurring.

# Florida

Florida Department of Environmental Protection <u>PFAS Webpage</u>



### **PFAS DEFINITION**

"PFAS" means perfluoroalkyl and polyfluoroalkyl substances, including perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS).

#### **PFAS PRIORITIES**

Continuing to track federal actions related to PFAS and take any necessary parallel state actions.

#### **PFAS MONITORING**



Private Wells

Groundwater

Soil

### **PFAS LEGISLATION**

<u>Statute 376.91</u>: Statewide cleanup of perfluoroalkyl and polyfluoroalkyl substances.

### **PFAS ACTION PLAN**

Access here. Updated March 2022.

# Georgia

Georgia Department of Natural Resources <u>PFAS Webpage</u>



### **PFAS MONITORING**



Public Water Systems

Surface Water

Groundwater

Biosolids

### **PFAS PRIORITIES**

Analyze and assess the initial PFAS monitoring samples for all Georgia public water systems.

## **PFAS ACTION PLAN**

Access <u>here</u>. Updated as needed.

# Hawaii

Hawaii State Department of Health <u>PFAS Webpage</u>

#### **PFAS DEFINITION**

Plans to define. The currently most referenced definition is "Compounds with carbon atoms linked to each other and bonded to fluorine atoms at most or all of the available carbon bonding sites."

### **QUANTIFYING REDUCTION**



Public Water Systems

Private Wells



Surface Water

Soil

Sediment

Biosolids

Landfill Leachate

#### **PFAS ACTION PLAN**

Access <u>here</u>. Updated annually or more frequently.

#### **ADDITIONAL LINKS**

DPH Environmental Hazard Evaluation and Environmental Action Levels

#### **PFAS PRIORITIES**

00

C EN

#### **PFAS LEGISLATION**

<u>Act 152/HB1644</u>: A bill for an act relating to Environmental protection.

#### CHANGES IN BIOSOLIDS MGMT.

Uses biosolids in compost in select scenarios suspended pending further testing and assessment of potential health risk.

#### **PFAS IN PRODUCTS**



Sales Bans



Use Bans

Phase-outs in State Purchases

Act 152 (2022). Prohibits the manufacture, sale or distribution for sale or use of paper food packaging containing PFASs. Act 152 (2022). Prohibits the manufacture, sale or distribution for sale or use of paper food packaging containing PFASs.

# Idaho

Idaho Department of Environmental Quality <u>PFAS Webpage</u>



### **PFAS DEFINITION**

Plans to define as per adopted regulations, and currently references EPA's definition.

#### **PFAS PRIORITIES**

Adopting and implementing the drinking water standard and managing the related disposal of any potential treatment.

### **PFAS MONITORING**



Private Wells

**Public Water Systems** 

### **COST-BENEFIT ANALYSIS**

Required to conduct; for individual rules, a cost/benefit analysis is typically performed.

### **QUANTIFYING REDUCTION**



**PFAS Levels in Drinking Water** 

# Illinois

Illinois Environmental Protection Agency <u>PFAS Webpage</u>



## **PFAS MONITORING**



Groundwater

#### **PFAS PRIORITIES**

Finalizing state groundwater quality standards for certain PFAS and developing holistic PFAS strategy.

### **PFAS IN PRODUCTS**



AFFF Phase-outs

### **PFAS LEGISLATION**

<u>Public Act 102-0290</u>: An Act Concerning Safety <u>Public Act 103-1077</u>: Safe Public Drinking Water Act

### **COST-BENEFIT ANALYSIS**

Plans to consider.

### CHANGES IN BIOSOLIDS MGMT.

Still implementing PFAS monitoring in biosolids, and evaluating EPA's risk assessment on biosolids.

AFFF TAKEBACK PROGRAM

Considering; subject to appropriation. No appropriation as yet. Illinois has not physically taken back any AFFF.

# Indiana

Indiana Department of Environmental Management <u>PFAS Webpage</u>



### **PFAS DEFINITION**

Does not plan to define - this is up to the legislature. IDEM uses applicable federal regulatory definitions for the programs it implements.

#### **PFAS PRIORITIES**

Discussions are underway with municipal airports to collect AFFF firefighting foam. The state legislature would need to provide the funding for this effort.

### **PFAS MONITORING**



Public Water Systems

**Private Wells** 

Groundwater

Surface Water

### **PFAS LEGISLATION**

Indiana Code 36-8-10.7: Use of Firefighting Foam Containing PFAS Chemicals Indiana Code 36-8-27: PFAS-free Firefighter Gear

Indiana Code 10-19-13: PFAS Biomonitoring Pilot Program

#### **QUANTIFYING REDUCTION**



Amount of PFAS Collected

AFFF TAKEBACK PROGRAM

IDEM has partnered with the Indiana Department of Homeland Security and the State Fire Marshal's Office to collect PFAScontaining firefighting foam from fire departments around the state. The IDHS Division of Fire and Building Safety provides more information on this joint initiative <u>here</u>. The foam is collected and solidified. It is goes to a hazardous waste landfill in Grand Ville, Idaho, for final disposal.

# lowa

Iowa Department of Natural Resources <u>PFAS Webpage</u>



### **PFAS ACTION PLAN**

Access here. Last updated 2020.

#### **PFAS PRIORITIES**

Will be focusing on addressing PFAS in drinking water.

#### **PFAS MONITORING**



**Public Water Systems** 

**Private Wells** 

Groundwater

Surface Water

#### AFFF TAKEBACK PROGRAM

Considering; will be hiring a contractor to collect and dispose of AFFF, still looking into disposal methods

### **COST-BENEFIT ANALYSIS**

#### **PFAS IN PRODUCTS**



Phase-outs: Planning AFFF Takeback Program to Phaseout AFFF Conducted; the state estimates contract costs for two rounds of PFAS sampling from 2021-2023 to total \$350K; staffing costs for 0.5 FTEs for PFAS sampling and 2 FTEs for combined leadership and staff time related to PFAS in the state to total \$350K; and annual travel costs to total \$25K per year. IA will now start a new sampling contract for \$180K with the State Hygienic Laboratory to complete sampling for 125 water supplies over the next three years.

# Kansas

Kansas Department of Health and Environment <u>PFAS Webpage</u>

## **PFAS DEFINITION**

Most references PFAS as being those that EPA identifies in the NPDWR, UCMR5, and EPA Methods 533 and 1633.

### **PFAS PRIORITIES**

Plans to stand up 1633 capability at the state lab. Evaluating PFAS at contaminated sites.

### **PFAS MONITORING**



**Public Water Systems** 

Surface Water

Fish & Wildlife

## **QUANTIFYING REDUCTION**



**PFAS Levels in Drinking Water** 

PFAS Levels in Wastewater Discharges

# Kentucky

Kentucky Department for Environmental Protection <u>PFAS Webpage</u>



### **PFAS MONITORING**



Public Water Systems

Private Wells Groundwater

Biosolids

Landfill Leachate

Surface Water

Fish & Wildlife

### **PFAS ACTION PLAN**

Updates annually and as necessary; public link not available.

### **PFAS LEGISLATION**

Acts Chapter 105/SJR149: A Joint Resolution directing the Energy and Environment Cabinet to provide guidance and consultation on best management practices for perfluoroalkyl and polyfluoroalkyl substances (PFAS) to entities that discharge directly or indirectly into Kentucky's waterways.

### **PFAS IN PRODUCTS**

The state is unsure if it plans to formally define PFAS. Most referenced: PFAS and applicable site-specific COPCs and COCs of specific species of PFAS.

# Louisiana

Louisiana Department of Environmental Quality Louisiana Department of Health's <u>PFAS Webpage</u>



### **PFAS DEFINITION**

No current plans to formally define PFAS, but the Louisiana Department of Health defines PFAS on its <u>webpage</u>.

### **PFAS MONITORING**



Public Water Systems

Groundwater

## **QUANTIFYING REDUCTION**



PFAS Levels in Drinking Water

# Maine

Maine Department of Environmental Protection <u>PFAS Webpage</u>



### **PFAS DEFINITION**

"Perfluoroalkyl and polyfluoroalkyl substances" or "PFAS" means any member of the class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom (38 M.R.S. § 1614(F)).

#### **PFAS MONITORING**



Public Water Systems

Private Wells

Groundwater

Surface Water

Soil

Sediment

**Biosolids** 

Landfill Leachate

Fish & Wildlife

**Agricultural Products** 

Wastewater Effluent

### **PFAS PRIORITIES**

To continue forward with all PFAS programming at the various agencies and determine best path forward with legislative input. Each agency has its own mission and so determining whose priorities is most important depends on what is going on at any given moment. Likely discussions this year at the legislature will focus on funding, private wells impacted by PFAS, and management of sludge and AFFF.

### **QUANTIFYING REDUCTION**



PFAS Levels in Drinking Water PFAS Levels in Fish & Wildlife



Number of Fishing



PFAS Levels in Wastewater Discharges

**Advisories/Impaired Waters** 



**PFAS Levels in Agricultural Products** 

PFAS levels in agricultural products have dropped (dairy cows, feed, crops, etc.

#### **PFAS IN PRODUCTS**



Sales Bans

Labeling Requirements

\_\_\_\_\_

# PFAS ACTION PLAN

Access here. Updated in 2020.

# Maine (Cont.)

Maine Department of Environmental Protection <u>PFAS Webpage</u>



### **PFAS LEGISLATION**

<u>Public Law Chapter 277</u>: An Act To Protect the Environment and Public Health by Further Reducing Toxic Chemicals in Packaging

<u>Resolve Chapter 82</u>: To Protect Consumers of Public Drinking Water by Establishing Maximum Contaminant Levels for Certain Substances and Contaminants

<u>Public Law Chapter 449</u>: An Act To Restrict the Use of Perfluoroalkyl and Polyfluoroalkyl Substances in Firefighting Foam

<u>Public Law Chapter 477</u>: An Act To Stop Perfluoroalkyl and Polyfluoroalkyl Substances Pollution <u>Public Law Chapter 478</u>: An Act To Investigate Perfluoroalkyl and Polyfluoroalkyl Substance Contamination of Land and Groundwater

<u>Public Law Chapter 117</u>: An Act Regarding Uncontrolled Hazardous Substance Sites <u>Public Law Chapter 328</u>: An Act Regarding the Statute of Limitations for Injuries or Harm Resulting from Perfluoroalkyl and Polyfluoroalkyl Substances

<u>Public Law Chapter 641</u>: An Act To Prevent the Further Contamination of Soils and Waters of the State with so-called Forever Chemicals

<u>Public Law Chapter 635</u>: An Act To Make Supplemental Appropriations and Allocations for the Expenditures of State Government, General Fund and Other Funds and To Change Certain Provisions of the Law Necessary to the Proper Operations of State Government for Fiscal Years Ending June 30, 2022 and June 30, 2023

<u>Resolve Chapter 172</u>: To Address Perfluoroalkyl and Polyfluoroalkyl Substances Pollution at Stateowned Solid Waste Landfills

<u>Public Law Chapter 138</u>: An Act to Support Manufacturers Whose Products Contain Perfluoroalkyl and Polyfluoroalkyl Substances

<u>Public Law Chapter 500</u>: An Act to Clarify Liability Under the Uncontrolled Hazardous Substance Site Law and to Waive a Fee Regarding Voluntary Response Action Plans

<u>Public Law Chapter 630</u>: An Act to Amend the Laws Relating to the Prevention of Perfluoroalkyl and Polyfluoroalkyl Substances Pollution

#### **CHANGES IN BIOSOLIDS MGMT.**

Prohibition on sludge and sludge derived products land application is already in effect in Maine. No plans at this time to change this.

# Maine (Cont.)

Maine Department of Environmental Protection <u>PFAS Webpage</u>



#### **COST-BENEFIT ANALYSIS**

In 2024, the <u>Maine Department of Agriculture, Conservation and Forestry</u> (DACF) <u>PFAS Fund</u> (\$60 million, originally) provided \$2.25 million financial assistance to commercial farms impacted by PFAS contamination to support income replacement payments, professional services, etc. The Fund has an open research grant solicitation for \$3 million and is acquiring PFOS-contaminated properties from willing sellers. The Fund also established contracts totaling over \$2 million, including a contract with <u>Maine CDC</u> for public health oversight of blood testing, a soil exposure study, exploration of options for reducing PFAS body burden, and data analysis and communications to support commercial farms; a contract with University of Maine Cooperative Extension for the creation of a "navigator" program to connect impacted producers with resources; and a contract with Farm First for consultation on the design of a program for mental health services. The PFAS Fund employs three full-time staff positions.

DACF's PFAS Response Program works with commercial farms to identify PFAS contamination and implement strategies to reduce or eliminate contamination in farm products. This work includes providing individualized technical support as well as financial assistance. The Program has provided over \$3.1 million since 2022 in direct financial support to farms to maintain viability. Staff have spent over 30,000 hours communicating with farmers/landowners, collected over 3,000 samples for analysis, and worked to communicate with the public. The Program has seven full-time staff positions, one shared position, and one part-time consultant. It received \$13 million between FY21 and FY22 allocations, and an annual allotment of \$750,000 beginning in FY24.

The Maine Department of Environmental Protection (DEP) has spent just under \$18M on PFAS since 2019. Since late 2021, Maine DEP has had 17 full-time employees dedicated solely to PFAS. Several additional staff work on PFAS but are also responsible for other core work. The Maine CDC has PFAS toxicologists and epidemiologists on staff and receives approximately \$50,000 per year from DACF's interagency MOU to support work investigating PFAS exposures on non-commercial farms. Its Drinking Water Program has spent \$4,126,225 in federal funds in reimbursements to PWSs since 2021. The Maine Department of Inland Fisheries and Wildlife spent about \$250,000 in FY24 and has one full-time employee on PFAS. An additional \$350,000 was allocated to fund collaborative PFAS research in FY24.

# Maryland

Maryland Department of the Environment **PFAS Webpage** 



#### **PFAS DEFINITION**

Most referenced: Maryland Legislation (SB0273) passed in April 2022 referred to as the George "Walter" Taylor Act defined "PFAS chemicals" as a class of fluorinated organic chemicals that contain at least one fully fluorinated carbon atom, including perfluoroalkyl and polyfluoroalkyl substances. Not specified whether the state plans to formally define PFAS.

#### **PFAS MONITORING**

**Public Water Systems** 



**Private Wells** 

Surface Water

**Biosolids** 

Landfill Leachate

Fish & Wildlife

Fish tissue and private well monitoring has been conducted in isolated cases related to site investigations, but is not done routinely.

#### **PFAS ACTION PLAN**

Access here. Completed in 2023.

#### **PFAS PRIORITIES**

Maximizing federal funding to water systems to reduce the risk of exposure to PFAS through drinking water and developing a PFAS risk management strategy for various potential PFAS exposure pathways such as biosolids and other media.

#### **QUANTIFYING REDUCTION**

MDE does not currently quantify PFAS reduction progress. MDE will be able to track progress following implementation of actions to reduce PFAS through the following approaches:

- Its AFFF disposal program begins in 2025. MDE is soliciting information from local fire departments to inventory AFFF stockpiles at these facilities.
- It will track the number of community water systems in compliance with the MCLs after treatment systems are upgraded using BIL DWSRF and EC-SDC funds.
- It will quantify reductions in Municipal WWTP discharges once SIUs discharging to sanitary sewer systems reduce their loadings to meet MDE designated action levels as required by SB0956.
- It established several PFAS fish consumption advisories and impairment listings and will track progress based on the removal of the advisories/listings as sources of PFAS contamination are addressed.

#### **ADDITIONAL LINKS**

Water Supply PFAS Webpage

# Maryland (Cont.)

Maryland Department of the Environment <u>PFAS Webpage</u>



### **PFAS LEGISLATION**

SB0420/HB0581: Environment-Use of Fire-**Fighting Foam and PFAS Chemicals** SB0273/HB0275: Environment-PFAS **Chemicals-Prohibitions and Requirements** (George "Walter" Taylor Act) SB0158/HB0319: Pesticides-PFAS Testing-Study SB0956/HB1153: Environment-Water **Pollution Control-Protecting State Waters** from PFAS Pollution HB1147: Environment-Playground Surfacing **Materials-Prohibitions** HB0643: Public Health-Cosmetic Products-**Ingredient Prohibition** HB1190: Pesticides-PFAS Chemicals-Prohibitions (Did not pass/may be resubmitted in 2025) SB0225/HB0499: Environment-Publicly **Owned Treatment Works-PFAS Monitoring** (Withdrawn in 2023 Session)

#### AFFF TAKEBACK PROGRAM

SB273 requires that MDE dispose of Class B AFFF from fire departments. The legislation appropriates \$500,000 to MDE to implement the takeback and disposal program. MDE hired for three new positions (administrator, chemist, and environmental compliance specialist) to track and coordinate AFFF collections, review certifications and supporting analysis, and assist with enforcement, respectively. MDE is developing an RFP for the AFFF disposal program, and implementation should begin next year. The bill bans the disposal of AFFF through incineration or in a landfill in the state: disposal will have to occur out-of-state. unless an alternative method of destruction becomes available within Maryland.

#### CHANGES TO BIOSOLIDS MGMT.

MDE released interim guidance on the land application of biosolids with PFAS contamination in August 2024. The guidance requests that applicators limit or cease application based on the PFAS levels in the biosolids (tiered approach). The guidance will also require that sewage sludge generators monitor for PFAS beginning in January 2025. MDE intends to reevaluate their guidance using EPA's biosolids risk assessment when finalized. The interim guidance is available here. A fact sheet on PFAS in biosolids is available <u>here</u>.

#### **PFAS IN PRODUCTS**

Sales Bans

Use Bans

Disposal Bans

Phase-outs in Consumer Products

SB 0273 prohibits the manufacturing, sale, and use of certain fire-fighting foams containing PFAS, and prohibits the manufacturing or sale of certain rugs or carpets, food packaging, and food packaging components containing intentionally-added PFAS. Certain foams may not be disposed of via incineration or landfill, but there are no disposal restrictions on the other products. Maryland will send notification letters to the affected industries regarding requirements of the law and to request the certifications to prove that products sold in Maryland do not contain PFAS.

# Massachusetts

Massachusetts Department of Environmental Protection <u>PFAS Webpage</u>



#### **PFAS DEFINITION**

Not planning to formally define PFAS, but considering PFAS legislation that will likely include a definition. Most referenced: A firefighting gear law did include a specific definition for personal protective gear. (Chapter 182 of Acts of 2024). "Perfluoroalkyl and polyfluoroalkyl substances" or "PFAS chemicals", a class of fluorinated organic chemicals containing at least 1 fully fluorinated carbon atom.

### **QUANTIFYING REDUCTION**

Amount of PFAS Collected
PFAS Levels in Drinking Water
PFAS Levels in Surface and Groundwater
PFAS Levels in Fish and/or Wildlife
PFAS Levels in Wastewater Discharges
Number of Facilities/Sites That Have Conducted PFAS Cleanup



**PFAS** Levels in Biosolids



#### **PFAS PRIORITIES**

Addressing biosolids disposal capacity and PFAS reduction and determining next steps. MassDEP is also addressing impacts from and cleanup of sites when they impact private wells.

#### **PFAS MONITORING**



Public Water Systems

**Private Wells** 

Groundwater

Surface Water and Surface Water Foams



Sediments

Soil

Biosolids

- Landfill Leachate
- Fish & Wildlife

**Bottled Water** 

**Certain Containers and Products** 

Massachusetts has tested certain pesticide formulations for PFAS and the results helped to identify fluorination treatments of containers as a source.

# Massachusetts (Cont.)

Massachusetts Department of Environmental Protection <u>PFAS Webpage</u>



#### **PFAS LEGISLATION**

<u>Chapter 182</u>: An Act Relative To The Reduction Of Certain Toxic Chemicals In Firefighter Personal Protective Equipment

#### AFFF TAKEBACK PROGRAM

The MassDEP AFFF takeback program, in partnership with the Massachusetts Department of Fire Services, is continuing to collect and destroy PFAS-containing AFFF. The program began in 2018 and has collected (through June 2024) more than 400,000 pounds (over 47,000 gals) of foam from 157 fire departments and facilities across the Commonwealth. Legacy foam has been transported for destruction (incineration) out of state.

#### **COST-BENEFIT ANALYSIS**

Plans to consider.

#### **PFAS IN PRODUCTS**



Sales Bans

**Use Bans** 

**Phase-outs in Consumer Products** 

Phase-outs in State Purchases

Labeling Requirements for Firefighter Personal Protective Equipment

Other actions are being considered legislatively for certain consumer goods.

#### **CHANGES IN BIOSOILDS MGMT.**

Being considered within the MA PFAS Omnibus Bill (see legislation section) Section 3 – MassDEP shall promulgate regulations to phase out use, sale, and distribution of sludge that does not have MassDEP site specific approval. MassDEP is working on a plan for sludge disposal capacity estimates and PFAS reduction opportunities.

# Michigan

Michigan Department of Environment, Great Lakes, and Energy <u>PFAS Webpage</u>



#### **PFAS DEFINITION**

No plans to formally define PFAS, but there is a <u>working description</u> that is subject to change. Most referenced: PFAS contain the chemical structure unit R-(CF2)-C(F)(R') R," with two adjacent, fully fluorinated carbons where R, R', and R" represent any functional group or atom except H/Cl/Br/l; i.e., with a few noted exceptions. This description also includes substances with R-CF2-CF2-R' and CF3-CF2-R units. Note, R, R', R" can be the same or different atoms.

#### **PFAS MONITORING**



Public Water Systems

**Private Wells** 

Surface Water

Groundwater

Stormwater

Sediment

Biosolids

Landfill Leachate

Wastewater Effluent

Fish & Wildlife

#### **PFAS PRIORITIES**

Developing a rule set for updates to the existing Drinking Water MCL's.

#### **QUANTIFYING REDUCTION**



Amount of PFAS AFFF Collected

**PFAS Levels in Drinking Water** 



Number of Fishing Advisories/Impaired Waters



PFAS Levels in Wastewater Discharges

Number of PFAS Sites Identified

#### **COST-BENEFIT ANALYSIS**

Conducted in 2021; MI allocated \$23.4M and 131,296 staff hours to implement PFAS activities.

# Michigan (Cont.)

Michigan Department of Environment, Great Lakes, and Energy <u>PFAS Webpage</u>



#### AFFF TAKEBACK PROGRAM

EGLE contracted with US Ecology (USE) to provide the pickup services. Fire departments and airports contact EGLE staff with their pickup requests and they are scheduled with USE for pickup. Collected AFFF is solidified and landfilled.

#### **PFAS IN PRODUCTS**



Use Ban for State Purchases

A PFAS Products ban has been introduced by the state legislature; no other actions are currently planned. Executive Directive 2021-8 Reducing State Purchases of Products Containing Intentionally Added PFAS.

# Minnesota

Minnesota Pollution Control Agency **PFAS Webpage** 

### **PFAS DEFINITION**

Minnesota defines PFAS in some statutes (e.g., 116.943, Subd. 1(p) [Amara's Law], 325F.072, Subd. 1(c) [firefighting foam], 18B.01, Subd. 15c [prohibition of PFAS in pesticides] as "Perfluoroalkyl and polyfluoroalkyl substances" or "PFAS" means a class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom.

### **PFAS PRIORITIES**

Implementing Amara's Law prohibitions. Implementing the Biosolids Land Application Strategy. Developing and implementing permitting strategies in Air, Water (Wastewater and Stormwater), and Solid Waste programs. Conducting investigations and responsible party (RP) searches for known impacted drinking water sources.

#### PFAS ACTION PLAN

Access here. No plans to update.

### CHANGES IN BIOSOLIDS MGMT.

In January 2025, Minnesota published its **Biosolids Land Application Strategy. The** strategy's intent is to ensure protection of human health while retaining the benefits of biosolids applied to land.

#### **PFAS MONITORING**



- **Private Wells**
- Groundwater
- Surface Water
- **Biosolids**
- Fish & Wildlife

Private wells, groundwater, and sediment are typically sampled for PFAS in cases where there is suspected or known nearby contamination. Minnesota agencies regularly monitor/sample for PFAS in fish tissue. Oneoff projects to sample for PFAS (as opposed to media consistently monitored) include biosolids (2007/2008) (though some biosolids will be monitored regularly starting in 2025); industrial sludge (2009/2010); compost/compost sites (2019); air (deposition) (2022); snow, stormwater, process water, wastewater influent, and air emissions inventory reporting (Monitoring Plan, 2023-2024); deer and waterfowl (2023); and there are planned projects for additional snow sampling, air deposition onto coniferous tree needles, and soil.

# Minnesota (Cont.)

Minnesota Pollution Control Agency <u>PFAS Webpage</u>



### **QUANTIFYING REDUCTION**

Rulemaking progress for water quality standard development.

Number of regulated facilities that are regularly monitoring for PFAS.

Measurable and/or estimated reductions of PFAS are achieved and their relationship to underserved communities (metrics related to pollution reduction grants and estimated reductions of PFAS release to the environment through granted projects).

Implementation of PFAS monitoring in ambient networks (surface water, groundwater, and fish) (metric is a yes/no on whether PFAS monitoring has been implemented in ambient networks).

### **COST-BENEFIT ANALYSIS**

Conducted; Minnesota conducted a study on potential statewide PFAS treatment and destruction costs - over 20 years, it would take an estimated \$14-28 billion to remove and destroy PFAS from wastewater. PFAS can be bought for \$50-1,000 per pound, but costs between \$2.7- 18 million per pound to remove and destroy from municipal wastewater, depending on facility size. Implementing the EPA's draft drinking water MCLs, including investigation, treatment, and cleanup, the state said future costs estimates have exceeded \$1 billion.

### **PFAS IN PRODUCTS**



Sales Bans

Use Bans

Phase-outs in Consumer Products

The use of firefighting foams with intentionally added PFAS for testing or training purposes was prohibited as of July 1, 2020. Additional prohibitions on the use of firefighting foams with intentionally added PFAS went into effect Jan 1, 2024 (airports being an exception), with other uses being phased out through January 1, 2026 (petroleum refineries and terminals only).

The use of food packaging containing intentionally-added PFAS were prohibited as of Jan 1, 2024.

Amara's Law (Minn. Stat. 116.943) prohibits the sale or offer for sale of consumer products with intentionally-added PFAS in 11 categories (started January 1, 2025); the ban will go broadly into effect for all products by January 1, 2032, for all products that don't meet the definition of a "currently unavoidable use". There will be reporting and fee requirements associated with products sold or offered for sale between 2026 and 2032; those requirements are currently undergoing rulemaking, as is the determination of what constitutes a "currently unavoidable use".

More information on PFAS in products here.

# Minnesota (Cont.)

Minnesota Pollution Control Agency <u>PFAS Webpage</u>



### **PFAS LEGISLATION**

#### HF2123/SF1915

<u>HF359/SF321</u>: An act relating to health; prohibiting the use of certain flame-retardant chemicals in certain products; allowing certain exemptions; amending Minnesota Statutes 2018, section 325F.071; proposing coding for new law in Minnesota Statutes, chapter 325F.

#### <u>SF7</u>

#### <u>SF20/HF5</u>

<u>HF3765/SF4043</u>: An act relating to natural resources; appropriating money from environment and natural resources trust fund; providing for extensions and transfers; modifying requirements for expending trust fund money; requiring a report; amending Minnesota Statutes 2020, section 116P.08, subdivision 2.

#### HF2310/SF2438

#### HF100/SF73

#### HF2310/SF1955

<u>HF1999</u>: An act relating to state government; appropriating money from outdoor heritage, clean water, parks and trails, and arts and cultural heritage funds; modifying prior appropriations; modifying provisions related to outdoor heritage fund and parks and trails fund; modifying Clean Water Legacy Act; requiring reports; amending Minnesota Statutes 2022, sections 85.53, subdivision 2, by adding a subdivision; 85.536, subdivisions 1, 2; 97A.056, subdivisions 2, 11, 22; 114D.20, subdivision 2; 114D.30, subdivisions 4, 6, 7; 114D.50, subdivision 4; 129D.17, by adding a subdivision; Laws 2020, chapter 104, article 1, section 2, subdivision 5, as amended.

#### HF 5247/SF 5234

<u>HF3377</u>: An act relating to natural resources; appropriating money from environment and natural resources trust fund; modifying previous appropriations; amending Laws 2019, First Special Session chapter 4, article 2, section 2, subdivision 9; Laws 2021, First Special Session chapter 6, article 6, section 2, subdivision 9; Laws 2022, chapter 94, section 2, subdivisions 9, as amended, 10; Laws 2023, chapter 60, article 2, section 2, subdivision 9.

#### HF 3911/ SF 3887

<u>HF 4124/SF 5116</u>: An act relating to state government; appropriating money from the outdoor heritage fund, clean water fund, parks and trails fund, and arts and cultural heritage fund; modifying and extending prior appropriations; amending Laws 2023, chapter 40, article 3, sections 2, subdivision 1; 3; 4; article 4, section 2, subdivision 3.

HF 4975/SF 4942

#### **ADDITIONAL LINKS**

<u>Department of Health PFAS Webpage</u> <u>Department of Agriculture Products with Added PFAS</u>

# Mississippi

Mississippi Department of Environmental Quality <u>PFAS Webpage</u>



## **PFAS DEFINITION**

Most referenced: Mississippi observes federally regulated hazardous substances under CERCLA and RCRA and federal drinking water standards.

## **PFAS PRIORITIES**

Adopting federal rules and regulations related to PFAS.

### **PFAS MONITORING**



Public Water Systems

## **COST-BENEFIT ANALYSIS**

Plans to consider.

### **QUANTIFYING REDUCTION**



**PFAS Levels in Drinking Water** 

Follow-up analysis post treatment.

# Missouri

**Missouri Department of Natural Resources PFAS Webpage** 



### **PFAS DEFINITION**

Most referenced: Per- and Polyfluoroalkyl Substances (PFAS) as defined by EPA, generally.

#### **PFAS PRIORITIES**

Completing drinking water occurrence monitoring and ensuring that PFAS exposure pathways are limited, particularly focused on areas where groundwater is used as a source of drinking water.

#### **PFAS MONITORING**



**Public Water Systems** 

**Private Wells** Groundwater



Surface Water

Fish & Wildlife

### **QUANTIFYING REDUCTION**



**PFAS Levels in Drinking Water** 

### AFFF TAKEBACK PROGRAM

Considering; will leverage pesticide and ewaste takeback knowledge to partner with community and municipal fire districts to take back AFFF from those entities. Disposal in landfill.

# Montana

Montana Department of Environmental Quality <u>PFAS Webpage</u>



### **PFAS DEFINITION**

Most referenced: For database considerations, we use the definition that PFAS contain at least one alkyl carbon with its hydrogen atoms replaced by fluorine atoms.

#### **PFAS MONITORING**



**Public Water Systems** 

Private Wells

Groundwater

Soil

Sediment

Fish & Wildlife

#### **QUANTIFYING REDUCTION**



Number of Facilities/Sites That Have Conducted PFAS Cleanup

#### **PFAS PRIORITIES**

To track federal legislation and determine how it affects Montana, how the state will be required to implement it, and what resources will be needed to do so. Montana's PFAS workgroup has also identified education of both the general public and the regulated public on various issues regarding PFAS as a high priority.

#### **PFAS ACTION PLAN**

Access <u>here</u>. completed in 2020, plans to update next year.

#### CHANGES IN BIOSOLIDS MGMT.

There are no immediate considerations for a ban of land application of septage. Biosolids primacy is with EPA. However, disposal of septage is difficult in Montana due availability of centralized treatment, availability of land application due to population growth, and future potential impacts of septage land application. A deeper understanding of levels of PFAS in septage and how that would affect land application activities would be helpful in determining potential alternative methods of handling and disposal of septage.

# Nebraska

Nebraska Department of Environment and Energy

### **PFAS MONITORING**



Public Water Systems

Groundwater Surface Water

Biosolids

Surface water sampling at 15 sites in 2019 only. Doing a pilot study of influent, effluent, biosolids/sludge at WWTF.

### **PFAS PRIORITIES**

To identify, assess, and characterize sites where PFAS are known or suspected to pose a threat to public health and/or the environment through groundwater, surface water, soil, or air and to continue drinking water evaluations.

# Nevada

Nevada Division of Environmental Protection <u>PFAS Webpage</u>



### **PFAS DEFINITION**

Assembly Bill 97 (2021) defined Perfluoroalkyl and polyfluoroalkyl substances as "a class of fluorinated organic chemicals that contain at least one fully fluorinated carbon atom."

### **PFAS MONITORING**

Targeted sampling with EPA funding only. Limited PWS and environmental sampling done to date.

### **PFAS LEGISLATION**

<u>AB97</u>: Revises provisions governing toxic chemicals.

### **PFAS ACTION PLAN**

Access here. Updated as needed.

#### **PFAS PRIORITIES**

For drinking water, private well testing will be a focus. NDEP is funding work on TOF as a surrogate for PFAS breakthrough in PWS treatment. The state is also investing in equipment and staff for the Nevada State Public Health Lab for PFAS analysis. An update to the Nevada PFAS Action Plan will also be funded.

### **PFAS IN PRODUCTS**



Sales Bans

Use Bans

Assembly Bill 97 (2021) prohibits, with certain exceptions, the discharge, use or release of Class B firefighting foam that contains intentionally added PFAS and requires notification be made to the Division of Environmental Protection should discharge, use or release occur. AB 97 (2021) also prohibits, with certain exceptions, the knowing manufacture, sale, offering for sale, distribution for sale or distribution for use of a children's product, upholstered residential furniture, residential textile, business textile or mattress containing any flame-retardant organohalogenated chemical in any product component in amounts greater than 1,000 parts per million.

# **New Hampshire**

New Hampshire Department of Environmental Services <u>PFAS Webpage</u>



### **PFAS DEFINITION**

Most referenced: Refer to definitions in statues regarding the specific topics referenced (AFFF, consumer product ban).

### CHANGES IN BIOSOLIDS MGMT.

Considering changes to biosolids management in anticipation of required opening of Sludge Management Rules in 2026. Not considering ban on land application at this time.

### **PFAS MONITORING**



**Public Water Systems** 

**Private Wells** 

Groundwater

Biosolids

Air

Landfill Leachate

### **PFAS IN PRODUCTS**



Sales Bans Use Bans

### **COST-BENEFIT ANALYSIS**

Plans to consider.

### AFFF TAKEBACK PROGRAM

This is a state funded program where all fire departments could bring their AFFF to a designated location on a specific date. Transportation and disposal were handled by the state contractor. Mainly destruction using SCWO, a small amount that cannot be destroyed with SCWO will be landfilled.

# New Hampshire (Cont.)

New Hampshire Department of Environmental Services <u>PFAS Webpage</u>



<u>HB1766</u>: AN ACT requiring the department of environmental services to report to the general court regarding bedrock testing and perfluorochemical contamination in the Seacoast area and at other landfills and hazardous waste sites.

<u>SB309</u>: AN ACT regulating groundwater pollution caused by polluting emissions in the air and relative to standards for perfluorochemicals in drinking water, ambient groundwater, and surface water. <u>HB737</u>: AN ACT establishing a commission to investigate and analyze the environmental and public health impacts relating to releases of perfluorinated chemicals in the air, soil, and groundwater in Merrimack, Bedford, and Litchfield.

HB4: AN ACT relative to state fees, funds, revenues, and expenditures.

<u>SB257</u>: AN ACT prohibiting foams containing perfluoroalkyl chemicals for use in fighting fires. <u>HB1264</u>: AN ACT extending the commission on the seacoast cancer cluster investigation, setting the maximum contaminant levels for certain perfluorochemicals in drinking water, establishing a per and polyfluoroalkyl substances fund and programs and making an appropriation therefor, requiring insurance coverage for PFAS and PFC blood tests, and expanding the statute governing ambient groundwater quality standards.

<u>HB256</u>: AN ACT adding members from Londonderry to the commission to investigate and analyze the environmental and public health impacts relating to releases of perfluorinated chemicals into the air, soil, and groundwater in Merrimack, Bedford, and Litchfield.

<u>HB271</u>: AN ACT relative to standards for per and polyfluoroalkyl substances (PFAS) in drinking water and ambient groundwater.

<u>HB1547</u>: AN ACT relative to per fluorinated chemical remediation in soil and procedures for certain hazardous waste generators.

HB2: AN ACT relative to state fees, funds, revenues, and expenditures.

HB398: AN ACT relative to notice of PFAS contamination prior to the sale of real property.

<u>HB1114</u>: AN ACT extending the commission to investigate and analyze the environmental and public health impacts relating to releases of perfluorinated chemicals in the air, soil, and groundwater in Merrimack, Bedford, Londonderry, Hudson and Litchfield.

<u>HB1613</u>: AN ACT establishing a trust fund for money from soil and water environmental contamination court settlements.

<u>HB1649</u>: AN ACT relative to prohibiting certain products with intentionally added PFAS and relative to civil actions for PFAS contamination, and relative to settlement of lawsuits against manufacturers of PFAS for impacts to public drinking water systems.

<u>SB393</u>: AN ACT relative to making an appropriation to the department of environmental services to fund regional drinking water infrastructure.

<u>HR28</u>: A RESOLUTION urging for the compensation for injuries from PFAS and for the closure and cleaning of sites affected by PFAS.

# **New Jersey**

New Jersey Department of Environmental Protection <u>PFAS Webpage</u>



### **PFAS DEFINITION**

Most referenced: Any member of the class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom.

#### **PFAS PRIORITIES**

Advancing control of sources of PFAS contamination and exposure.

#### **PFAS MONITORING**

SSSSSSSSS SSSSSSSS

Public Water Systems

**Private Wells** 

Surface Water

Groundwater

Soil

Air

Landfill Leachate

Precipitation

Regarding soil, DEP has conducted a soil survey of PFAS in NJ and is in the process of finalizing a report for public release but does not routinely monitor soil locations as one would do for groundwater or drinking water.

### **PFAS LEGISLATION**

<u>P.L. 2023, Chapter 243</u>: Prohibits the sale, manufacture, distribution, and use of AFFF; requires DEP to establish collection and disposal program; appropriates \$250,000. <u>P.L. 2023, Chapter 279</u>: Requires DEP and the Drinking Water Quality Institute to perform a study concerning the regulation and treatment of PFAS.

<u>P.L. 2023, Chapter 116</u>: Allows certain municipal water systems under certain circumstances to use lands preserved for recreation and conservation for drinking water wells and associated treatment equipment or facilities.

### **CHANGES IN BIOSOLIDS MGMT.**

No planned changes. New Jersey is in the beginning stages of collecting information on PFAS in biosolids/residuals, and will evaluate guidance from EPA's risk assessment for PFOA and PFOS.

# New Jersey (Cont.)

New Jersey Department of Environmental Protection <u>PFAS Webpage</u>



## **PFAS IN PRODUCTS**



Sales Bans



Enacted Legislation: L. 2023, c. 243: bans (with certain exceptions) the sale, offering for sale, manufacture, and distribution of Class B firefighting foam with intentionally added PFAS; establishes collection program for AFFF; provides funding to reimburse eligible municipalities for cost of replacing AFFF

#### AFFF TAKEBACK PROGRAM

The Department of Environmental Protection in collaboration with the Department of Community Affairs Division of Fire Safety surveyed fire companies to determine the volume of AFFF to be collected pursuant to L. 2023, c. 243. Based on the results of that survey, the Department is considering options for storing, disposing, or destroying the collected AFFF before embarking upon the collection program.

# **New Mexico**

New Mexico Environment Department <u>PFAS Webpage</u>



#### **PFAS DEFINITION**

Plans on making it possible to regulate PFAS compounds as hazardous waste constituent for corrective actions, and will define in the listing or analytical standard. Most referenced: OECD definition (see <u>ITRC</u> <u>website</u> for specific reference ) being: "fluorinated substances that contain at least one fully fluorinated methyl or methylene carbon atom (without any H/Cl/Br/I atom attached to it), i.e., with a few noted exceptions, any chemical with at least a perfluorinated methyl group (-CF3) or a perfluorinated methylene group (-CF2-) is a PFAS.

#### **PFAS MONITORING**

Public Water Systems

Private Wells

Groundwater

Surface Water

### **PFAS LEGISLATION**

<u>House Bill 212</u>: PFAS Protection Act <u>House Bill 140</u>: An Act Related to Hazardous Materials

#### CHANGES TO BIOSOLIDS MGMT.

Biosolids management is not a broad practice in the state, particularly on agricultural fields, but the state is currently researching the status of these activities.

#### **PFAS PRIORITIES**

Expanding testing of private and public wells and expanded blood sampling. Holding federal facilities responsible for cleanup of PFAS contamination due to federal operations.

#### **PFAS IN PRODUCTS**

Sales Bans



Phase-outs in State Purchases



. .. . .

Labeling Requirements

NMED in March 2025 passed <u>House Bill 212</u>: PFAS Protection Act, a prospective phase out and ban on consumer products with intentionally-added PFAS. The bill will allow for the labeling of consumer products that contain PFAS to help educate consumers. The state also passed <u>House Bill 140</u>, which amends the state definition of "hazardous waste" by specifically adding "discarded aqueous film-forming foam containing intentionally added per- or polyfluoroalkyl substances" and any solid wastes designated currently as hazardous waste by EPA, allowing the state to enforce cleanup.

#### **COST-BENEFIT ANALYSIS**

Required and conducted; 2020-2023 drinking water sampling efforts total \$1.65M; state legislature authorized \$4M for communities in 2 counties to plan/design/ construct improvements to water systems; 3rd water system requested \$3.05M for treatment; 2021 & 2023 - \$330,000 from state legislature for private well sampling.

# **New York**

New York Department of Environmental Conservation <u>PFAS Webpage</u>



#### **PFAS DEFINITION**

Most referenced: Legislation in New York State defines PFAS as "a class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom." While this definition is sufficiently broad to use as a screening tool for product restrictions, different approaches may be more appropriate for other programs.

#### **PFAS MONITORING**

Public Water Systems

**Private Wells** 

Groundwater

Surface Water

Soil

Sediment

Biosolids

Landfill Leachate

Air Emission Sources

Fish & Wildlife

Industrial Wastewater

#### **PFAS PRIORITIES**

Addressing challenges with private well and small water system mitigation and PFAS destruction and mitigation.

- 1. Private Well and Small Water System Mitigation: Identifying appropriate PFAS treatment (and funding) is necessary for small water systems, especially those that are privately owned. For private wells, it is particularly challenging since filters are not yet certified to remove PFAS to below the MCLs. Approaches are needed to solve small scale contamination issues.
- 2. PFAS Destruction and Mitigation: Additional guidance is needed on PFAS destruction methods. The state is interested in technologies like SCWO for AFFF destruction, which hold promise but there is reluctance to pursue without EPA guidance. Additional concentration and destruction technologies of interest include electrical chemical oxidation and foam fractionation. EPA research and recommendations are needed to inform best approaches to PFAS removal and destruction from public water supplies, wastewater treatment plants and air emission sources. EPA annual guideline concentration ambient air values would also be valuable. EPA PFAS in source air OTMs are needed for additional sources/source sectors in New York State.

# New York (Cont.)

New York Department of Environmental Conservation **PFAS Webpage** 



### **PFAS LEGISLATION**

Environmental Conservation Law §37-0121: Prohibitions Against the Use of PFAS in Apparel and Outdoor Apparel for Severe Wet Conditions Environmental Conservation Law §37-0905: Toxic Chemicals in Children's Products Law Environmental Conservation Law §37-0203: Prohibition on Intentionally Added PFAS in Food Packaging **Environmental Conservation Law §27-3313:** Prohibition on PFAS in carpet in Carpet **Collection Program Law** General Business Law §391-U2: Prohibition on PFAS in Firefighting Foams

Environmental Conservation Law §27-1301: **Regulation of PFOA and PFOS under the** Inactive Hazardous Waste Disposal Site Law Public Health Law §225: Regulation of MCLs in Public Water Supplies Public Health Law §1112: Monitoring **Emerging Contaminants** 

### **CHANGES IN BIOSOLIDS MGMT.**

DEC published Program Policy 7 - Biosolids Recycling in New York State - Interim Strategy for the Control of PFAS Compounds. This policy provides guidance while the state evaluates EPA's risk assessment results and anticipates an assessment of recycled biosolids in New York.

### **QUANTIFYING REDUCTION**



Amount of PFAS Collected



**PFAS Levels in Drinking Water** 

**PFAS** Levels in Fish & Wildlife

Number of Fishery Advisories and/or Impaired Waters



**PFAS Levels in Wastewater Discharges** 



**PFAS Levels in Air Emissions** 

Number of Facilities/Sites That Have **Conducted PFAS Cleanup** 

Sampling is done in the above categories across relevant programs, but not specifically to measure reductions.

### **PFAS IN PRODUCTS**

Sales Bans

**Use Bans** 

Phase-outs in Consumer Products



Phase-outs in State Purchases



Labeling Requirements

New York has laws pertaining to the use of PFAS in products, firefighting foams, and more (see Legislation). The state uses the GreenNY Environmentally Preferable Purchasing Program.

# New York (Cont.)

New York Department of Environmental Conservation <u>PFAS Webpage</u>



#### AFFF TAKEBACK PROGRAM

- New York had a limited takeback program (2017-2020) that collected and removed AFFF from use. This \$250,000, state-funded effort resulted in collection and disposal of over 40,000 gallons of AFFF from local fire companies. Due to the lack of disposal options, the takeback program was suspended.
- New York has legislation restricting AFFF use, sale, and distribution (General Business Law [GBS] 391-U)
- In 2021, the state tested two F3s. Results satisfied GBS 391-U requirements and were approved for use in the state.
- The state estimates that there are well over 100,000 gallons of AFFF that still need to be addressed.
- Given potential long-term liability associated with landfilling AFFF, New York recommends that fire companies store on-site until effective treatment is available. If on-site storage is not an option, EPA's disposal guidance is referenced. The state recommends that old foam concentrate is completely removed before replacement with F3, but does not dictate a specific process to use. If AFFF is used, it must be reported through the state's spills hotline.

#### **ADDITIONAL LINKS**

<u>Chemicals and Health: New York State PFAS,</u> <u>Exposure and Health Projects</u>
# North Carolina

North Carolina Department of Environmental Quality <u>PFAS Webpage</u>



### **PFAS MONITORING**



**Public Water Systems** 

Private Wells

Groundwater

Surface Water



Landfill Leachate

Air

Fish & Wildlife

### **PFAS PRIORITIES**

Addressing contamination in private wells, source minimization activities by NPDES dischargers, reducing PFAS in Public Water Systems.

### **PFAS LEGISLATION**

Groundwater IMACs

### **PFAS ACTION PLAN**

Access here. Updated annually.

### **COST- BENEFIT ANALYSIS**

Conducted and required to conduct; the estimate can be found in the state's <u>fiscal</u> <u>note</u>.

#### AFFF TAKEBACK PROGRAM

This effort is being conducted through the NC Policy Collaboratory and is currently being designed for research purposes; other options are still under development.



**QUANTIFYING REDUCTION** 

Number of Fishing Advisories/Impaired Waters

**PFAS Levels in Drinking Water** 



**PFAS Levels in Air Emissions** 



Number of Facilities/Sites That Have

Conducted PFAS Cleanup

# North Dakota

North Dakota Department of Environmental Quality <u>PFAS Webpage</u>

### **PFAS DEFINITION**

No definition, but North Dakota does use a <u>factsheet</u>.

### **PFAS PRIORITIES**

Implementing drinking water regulations and fish tissue sampling.

### **PFAS MONITORING**

SSSSSSSSS

Private Wells Groundwater

**Public Water Systems** 



Soil



Landfill Leachate

Fish & Wildlife

### **QUANTIFYING REDUCTION**

One identified site where the state is doing additional monitoring.

### **COST-BENEFIT ANALYSIS**

Conducted; have not conducted any analysis to define economic impact of PFAS, however, the state has conducted PFAS presence/absence surveys. From 2018 to 2023, North Dakota DEQ spent \$427,000 on PFAS investigation efforts.

# Ohio

**Ohio Environmental Protection Agency PFAS Webpage** 



### **PFAS DEFINITION**

Most referenced: Per-and polyfluoroalkyl substances (PFAS) are a group of man-made chemicals applied to many consumer products to make them waterproof, stainresistant, or nonstick. PFAS are also used in some cosmetics, fast food packaging, and a type of firefighting foam called aqueous film forming foam (AFFF), which is used mainly on large spills of flammable liquids, such as jet fuel.

# **PFAS PRIORITIES**

Updating PFAS Action Levels for drinking water to match the new NPDWR, including following Ohio's rule-making process and assisting public water systems to ensure they meet MCL compliance.

### **PFAS LEGISLATION**

ORC3737.52: PFAS chemicals in firefighting foam.

### **PFAS MONITORING**



**Public Water Systems** 

**Private Wells** 

Surface Water

### **QUANTIFYING REDUCTION**



Amount of PFAS Collected



**PFAS Levels in Drinking Water** 

### **PFAS ACTION PLAN**

Access here. Updated often, based on project updates and announcements.

### AFFF TAKEBACK PROGRAM

The Ohio AFFF Takeback Program is a nocost solution for all Ohio fire departments, local governments, and government-owned airports that want to get rid of their AFFF stockpiles. Ohio's contractor, Revive Environmental, collects the material and then destroys it using their Battelle's Annihilator technology. In the Spring of 2024, Ohio collected 13,725 gallons of known, sealed AFFF material from 121 fire departments across Ohio. Revive is currently destroying collected material. There is another 60,000 gallons of AFFF material registered for the program and ready to be collected and destroyed. Ohio and Revive are working on its next phase of the Program collection.

# Oklahoma

Oklahoma Department of Environmental Quality



### **PFAS MONITORING**



**Public Water Systems** 

Oklahoma will be implementing the NPDWR that requires initial sampling of PWS's.

#### **PFAS PRIORITIES**

Developing a PFAS Action Plan, including continuing efforts to implement the NPDWR, expansion of PFAS analytical capacity for the State Environmental Laboratory Services Division, and addressing potential impacts of EPA rulemaking on passive receivers of PFAS.

#### **COST-BENEFIT ANALYSIS**

Plans to consider; if any state rulemaking were to be considered in the future, it would require preparation of a Regulatory Impact Assessment. Estimates of the economic impact of PFAS are not currently available.

# Oregon

Oregon Department of Environmental Quality <u>PFAS Webpage</u>



### **PFAS DEFINITION**

The Oregon legislation defines PFAS broadly as a class of organic chemicals containing at least one fully fluorinated carbon atom. ORS 459.465 to ORS 459.477

### **PFAS MONITORING**



Public Water Systems

### **PFAS LEGISLATION**

<u>SB543</u>: Relating to prohibitions for certain products; creating new provisions; and amending ORS 459.995. <u>OAR 333-016-3010</u>: Toxics Free Kids Act, Removal or Substitution of High Priority Chemicals.

### COST- BENEFIT ANALYSIS

Plans to consider.

### **ADDITIONAL LINKS**

Addressing PFAS in Oregon

#### **PFAS PRIORITIES**

To take a proactive, integrated approach, protecting public health, addressing contamination through scientific research and environmental remediation, and improving regulations.

#### **PFAS IN PRODUCTS**



Sales Bans

Use Bans

**Phase-outs in Consumer Products** 



Labeling Requirements

On January 1, 2025, SB 543 went into effect, prohibiting the sale or distribution of foodware containers with intentionally-added PFAS, as well as the use by food vendors of polystyrene foam containers for prepared foods.

In 2015, Oregon passed the Toxic-Free Kids Act (ORS 431A.250-431A.280), which keeps a list of high-priority chemicals of concern for children's health and requires manufacturer reporting based on the presence of those chemicals in products. As required by SB 478, the Oregon Health Authority provides biennial reports to the Legislature on the status of the statute's implementation. There have been updates to this Act, including in 2019 and 2021, with further recommendations, as implemented by HB 3043 (2023).

# Pennsylvania

Pennsylvania Department of Environmental Protection **PFAS Webpage** 



### **PFAS DEFINITION**

PADEP currently does not plan to formally define PFAS as a chemical class. However, it is possible that a bill or bills may be enacted that define PFAS as a chemical class. A specific definition of PFAS as a chemical class does not currently appear in any PA statute or regulation.

Pennsylvania has a table of proposed definitions of PFAS as a chemical class from bills in the 2023-2024 General Assembly session. This includes different definitions as proposed in <u>HB 683</u>, <u>HB 1122</u>, <u>HB 1541</u>, <u>HB</u> 1571, and HB 2238.

#### **PFAS PRIORITIES**

1. Continuing implementation of state PFAS MCL rule, primarily supporting systems that have had violations to date and supporting the smaller systems that will start monitoring in 2025.

2. Reviewing EPA's risk assessment for PFAS in biosolids and making any necessary adjustments to state land application permits. 3. Keeping an eye on EPA's activities towards developing recommended ambient water quality criteria for PFAS to protect human health.

4. Continuing to add PFAS monitoring requirements in select NPDES permits as previously described.

### **PFAS MONITORING**

S

**Public Water Systems** 

Groundwater

**Surface Water** 

Soil



PADEP monitoring of PFAS in soil and groundwater is typically limited to HSCA sites. PADEP does not have authority to monitor water quality in private wells. For NPDES permits, PADEP is incorporating appropriate monitoring for PFOA, PFOS, GenX, and PFBS in major sewage and industrial NPDES permits as they come up for renewal, which will result in quarterly or annual monitoring in those permits, depending on the results.

### PFAS ACTION PLAN

Access here. Last updated in 2019.

### **COST-BENEFIT ANALYSIS**

Conducted and required to conduct; required by MCL rulemaking – state provided in depth cost estimate chart of costs to regulated community (e.g., PWSs) for first 4 years, including total estimated annual treatment costs, etc.

PADEP's Bureau of Safe drinking water incurred considerable costs with MCL rulemaking: toxicology contracts = \$180,367 for 1 year, \$250,000 for year 2; sampling plan lab costs = \$361,151; sampling plan travel costs to collect samples = \$12,000; personnel costs \$1150000 - totaling \$1,953,518.

# Pennsylvania (Cont.)

Pennsylvania Department of Environmental Protection <u>PFAS Webpage</u>



#### **QUANTIFYING REDUCTION**

Drinking Water: While the state has not yet started quantifying this, the monitoring results under Pennsylvania's PFAS MCL rule will provide basis for the state to at least ballpark this in the future.

Fish Tissue: The state is not yet tracking reductions for this, but it is monitoring for PFAS (especially PFOS) in fish tissue, which will provide some basis for estimating this in the future. The state currently only has one fish consumption advisory for PFAS (PFOS in the Neshaminy Creek basin).

Wastewater Discharges: The state is not actively tracking reductions for this at the moment, but the monitoring it is implementing through NPDES permits will provide some basis for this moving forward.

Number of Facilities: PADEP's Bureau of Environmental Cleanup and Brownfields maintains a list of properties with PFAS contamination.

#### **PFAS IN PRODUCTS**

Legislation on this front has been proposed in Pennsylvania, but not yet enacted.

#### **CHANGES IN BIOSOLIDS MGMT.**

Pennsylvania's Clean Water Program collects data on some beneficial uses of biosolids. Land application is reported for nonexceptional quality biosolids and residential septage, but beneficial use of exceptional quality biosolids is not reported to PADEP unless it is applied in bulk. Sewage treatment facilities report their ultimate biosolids disposal in their discharge monitoring reports (DMRs), but there are reporting system limitations. Sewage sludge is a type of waste reported on the PADEP's Waste Management Program's quarterly landfill reports; however, there is no testing requirement for PFAS. In order for a municipal waste landfill or incinerator to receive biosolids, they need to submit a Form 43. which estimates the amount of biosolids/sewage sludge to be sent for disposal/processing at that particular facility, to PADEP for approval. Unless asked to report, facilities do not otherwise disclose records with definitive volumes of biosolids sent to a landfill or incinerator. Pennsylvania will evaluate EPA's PFAS in biosolids risk assessment before making changes to how biosolids are managed in the state.

### ADDITIONAL LINKS

Department of Health PFAS Webpage

AFFF TAKEBACK PROGRAM

Considering.

# **Rhode Island**

Rhode Island Department of Environmental Management <u>PFAS Webpage</u>



Statutory definition at RIGL 23-18.13-3 ("Perfluoroalkyl and polyfluoroalkyl substances" or "PFAS" means all members of the class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom) and Water Quality Regulation Definition at 250-RICR-150-05-1.4(A)(68) ("Per-and polyfluoroalkyl substances" or "PFAS" means all members of the class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom, which constitute a large family of fluorinated chemicals, exceeding several thousand that might be in commercial use or the environment, that vary widely in their chemical and physical properties, exclusive of organofluorine pharmaceutical products.)

### **PFAS PRIORITIES**

Sludge/biosolids and continuing drinking water and surface water sampling, source identification, fish tissue sampling at known industrial source (former textile mill).

### **PFAS LEGISLATION**

<u>Consumer PFAS Ban Act</u> <u>Toxic Packaging Reduction Act</u> <u>PFAS In Drinking Water, Groundwater, and</u> <u>Surface Waters Act</u>

### **QUANTIFYING REDUCTION**



Amount of PFAS Collected



PFAS Levels in Drinking Water

PFAS Levels in Wastewater Discharges

Not formally monitoring reduction progress, but recording above information.

### **PFAS ACTION PLAN**

Access <u>here</u>. Last updated in 2023.

**PFAS MONITORING** 



Public Water Systems



Surface Water

Biosolids

Landfill Leachate

Other

Some of these require sampling, but not comprehensive monitoring.

# **Rhode Island (Cont.)**

Rhode Island Department of Environmental Management <u>PFAS Webpage</u>



### **PFAS IN PRODUCTS**



Sales Bans

Use Bans

Phase-outs in Consumer Products

A law enacted in 2024 (codified at R.I.G.L. 23-18.18) prohibits the sale or manufacture of certain products if they contain intentionally introduced PFAS. Effective January 1, 2027 this includes carpets or rugs, cookware, cosmetics, fabric treatments, juvenile products, menstrual products, ski wax, and textile articles. Effective January 1, 2029 the ban will also include artificial turf and outdoor apparel for severe wet conditions.

### CHANGES IN BIOSOLIDS MGMT.

A private company is working on proposal for biosolids pyrolysis facility.

### **COST-BENEFIT ANALYSIS**

Required to conduct; societal cost-benefit analyses are required for rulemaking with some exceptions. A wholistic assessment of spending on PFAS has not been done.

### AFFF TAKEBACK PROGRAM

Legislative funding was provided to RIDEM for the disposal of fluorinated AFFF and to the State Fire Marshal's Office for the replacement of AFFF with GreenScreen Certified AFFF. Fire departments dropped off their containers of AFFF to one central location. Fire apparatuses were later emptied by the fire departments and brought to the central location for disposal. Approximately 100,000 lbs. of AFFF were picked up and transported by a contractor for incineration.

# South Carolina

South Carolina Department of Environmental Services <u>PFAS Webpage</u>



### **PFAS DEFINITION**

Most referenced: federal definitions.

### **PFAS MONITORING**



Public Water Systems

**Private Wells** 

Surface Water

Private wells by request. Surface water assessed. One round of PWSs.

### **QUANTIFYING REDUCTION**

At present, South Carolina is collecting data in ambient surface water (routine, long-term monitoring), animal tissue, groundwater, and drinking water systems to establish baselinelevel data of PFAS distributions and concentrations within the state.

#### **PFAS PRIORITIES**

To continue to collect data to determine the fate and transport of PFAS in surface water, soil to groundwater, etc. By determining how PFAS is getting into drinking water, the state can move forward with PFAS reduction.

### **PFAS ACTION PLAN**

Access here. Updated as needed.

# South Dakota

South Dakota Department of Agriculture and Natural Resources <u>PFAS Webpage</u>



### **PFAS DEFINITION**

Most referenced: South Dakota considers PFAS regulated substances as defined under SDCL 34A-2-12(8).

### **PFAS PRIORITIES**

To complete DANR PFAS Action Plan.

### **PFAS MONITORING**



Groundwater

Surface Water

Soil

DANR requires responsible parties to sample groundwater, soil, and surface water (as applicable) as part of PFAS site investigation work.

### QUANTIFYING REDUCTION



Amount of PFAS Collected

DANR has learned that as a direct result of a 2020 Class B PFAS foam collection project, many local volunteer fire departments indicated they no longer have or use foam that contains PFAS.

### AFFF TAKEBACK PROGRAM

AFFF collection is currently paused, but actively maintaining an inventory of entities that have Class B foam in storage. In 2020, DANR collected 35,272 pounds of AFFF foam/waste. Foam was sent to a Hazardous Waste incinerator for destruction (temperature exceeding 1500 degrees F).

# Tennessee

Tennessee Department of Environment and Conservation <u>PFAS Webpage</u>

### **PFAS MONITORING**



Groundwater

Surface Water

### CHANGES IN BIOSOLIDS MGMT.

Considering additions to the biosolids general permit to include an annual monitoring requirement for PFOA and PFOS, as well as the addition of storage and staging requirements.

### **PFAS PRIORITIES**

Finalizing source/raw water sampling study.

### AFFF TAKEBACK PROGRAM

Considering.

# Texas

Texas Commission on Environmental Quality <u>PFAS Webpage</u>



### **PFAS MONITORING**



Public Water Systems

Known PFAS Releases

### **QUANTIFYING REDUCTION**



Number of Fishing Advisories/Impaired Waters

Fishing advisories resulting in impairments for PFAS in fish tissue are included on the 303(d) list of impaired waterbodies.

### **COST-BENEFIT ANALYSIS**

Conducted; in first 12-month monitoring period, expects \$3M collection costs, \$7M sample analysis costs, 188 staff hours for plan review process-year.

# Utah

Utah Department of Environmental Quality <u>PFAS Webpage</u>



Not listed in its action plan to formally define PFAS, but for some of the UDEQ Divisions, a formal definition would be considered. Division of Waste Management and Radiation Control, would have a formal definition once the PFAS become RCRAregulated and are listed in 40 CFR 261 Appendix VII, DWMRC will adopt a more formal definition of PFAS, in accordance with RCRA.

Most referenced: Per-and polyfluoroalkyl substances (PFAS) are a group of synthetic organofluorine chemical compounds that have multiple fluorine atoms attached to an alkyl chain. Or Polymer (or potential precursors) and non-polymer PFAS; currently list 24 PFAS and structural isomers for consideration as emerging contaminants of concern.

### **PFAS MONITORING**



Public Water Systems

**Private Wells** 

Surface Water

Soil

Biosolids

Working with wastewater facilities who are monitoring effluent and biosolids voluntarily.

### **PFAS PRIORITIES**

Enacting regulations, rules, and guidance for handling PFAS once it is regulated as hazardous constituent under RCRA.

#### **PFAS ACTION PLAN**

Water Quality PFAS Action Plan. Access <u>here</u>. A plan is being developed in two other divisions as well (Waste Management and Radiation Control, Environmental Response and Remediation).

### **QUANTIFYING REDUCTION**



**PFAS Levels in Drinking Water** 

# Vermont

Vermont Agency of Natural Resources <u>PFAS Webpage</u>



### **PFAS DEFINITION**

Plans to formally define; the state is reviewing the PFAS definition adopted by EPA as a part of the TSCA 8(a) reporting rule and considering adopting a modified version.

Most referenced: At least one fully fluorinated carbon atom

**Public Water Systems** 

#### **PFAS MONITORING**

**Private Wells** 

Groundwater

Surface Water

SOO SOO SOO S

Biosolids

Soil

Landfill Leachate

Fish & Wildlife

### **PFAS PRIORITIES**

To continue state efforts in phasing out PFAS in consumer products.

#### **PFAS LEGISLATION**

<u>Act 131 of 2023</u>: An act relating to regulating consumer products containing perfluoroalkyl and polyfluoroalkyl substances or other chemicals.

<u>Act 36 of 2021</u>: An act relating to restrictions on perfluoroalkyl and polyfluoroalkyl substances and other chemicals of concern in consumer products.

<u>Act 21 of 2019</u>: An act relating to the regulation of polyfluoroalkyl substances in drinking and surface waters.

#### **PFAS ACTION PLAN**

Access <u>here</u>. Reviewed annually and updated as necessary.

#### **QUANTIFYING REDUCTION**



**PFAS Levels in Drinking Water** 

# Vermont (Cont.)

Vermont Agency of Natural Resources <u>PFAS Webpage</u>



### **PFAS IN PRODUCTS**



Phase-outs in Consumer Products

Considering additional product phase-outs (dental floss, fluorine treated containers, cleaning products) and a broader phase out of PFAS in consumer products.

### **CHANGES IN BIOSOLIDS MGMT.**

The state has increased the requirements on Class A/Exceptional Quality Biosolids. There is now PFAS reporting, data required on where materials are applied, siting requirements on application (e.g. distance to wells, distance to groundwater), PFAS screening standards, tracking of distribution.

### AFFF TAKEBACK PROGRAM

The state implemented a takeback program in 2019 in collaboration with the Department of Emergency Management/Division of Fire Safety. Local fire departments were offered the ability to have AFFF collected and disposed. Materials were taken to a permitted hazardous waste incinerator.

# Virginia

Virginia Department of Environmental Quality <u>PFAS Webpage</u>



### **PFAS DEFINITION**

For Drinking Water and AFFF: "PFAS" means per- and polyfluoroalkyl substances, which are any fluorinated substances that contain at least one fully fluorinated methyl or methylene carbon atom and any precursors of such substances. For Wastewater:

9VAC25-31-805 states "PFAS chemical" means (i) perfluorooctanoic acid (PFOA), (ii) perfluorooctane sulfonate (PFOS), (iii) hexafluoropropylene oxide dimer acid (HFPO-DA), (iv) perfluorobutane sulfonate (PFBS), or (v) any substance in a class of fluorinated organic chemicals containing at least two adjacent fluorinated carbon atoms, where one carbon atom is fully fluorinated and the other atom is at least partially fluorinated, excluding gases and volatile liquids, also referred to as perfluoroalkyl and polyfluoroalkyl substances, identified by a publicly owned treatment works in its pretreatment program for which there is a U.S. Environmental Protection Agency approved testing method."

### **QUANTIFYING REDUCTION**



**PFAS Levels in Drinking Water** 

### **PFAS PRIORITIES**

To identify the PFAS levels in all community and nontransient noncommunity waterworks.

### **PFAS LEGISLATION**

<u>HB2762</u>: Firefighting foam management; use of foam that contains PFAS chemicals. <u>HB586</u>: PFOA, PFOS, and PFAS; substances in public drinking water. <u>HB2189</u>: PFAS chemicals; requirements to test, publicly owned treatment works. <u>HB1085/SB243</u>: PFAS Expert Advisory Committee; established, monitoring sources.

### **PFAS MONITORING**



Public Water Systems

- Groundwater
- Surface Water
- Sediment

) Air

Limited Sediment data from 2021.

# Virginia (Cont.)

Virginia Department of Environmental Quality <u>PFAS Webpage</u>



### **COST-BENEFIT ANALYSIS**

Required to conduct; Virginia Acts of the Assembly 2024– Budget Amendment HB30 Item 280 #1c out of this appropriation, \$500,000 the first year from the general fund shall be provided for the Virginia Department of Health to conduct a cost analysis of implementing pending federal Per- and Polyfluorinated Substances (PFAS) regulations for Virginia local water systems and to implement pending federal Environmental Protection Agency Copper Rules for water system lead service lines. The report shall include the results of the cost analysis, possible funding models, and identify federal funding that may be available. The department shall submit the report to the Chairs of the House Appropriations and Senate Finance and Appropriations Committees by December 1, 2024 Costs to waterworks for implementation of the PFAS rule are being finalized now for this report. The Virginia General Assembly appropriated \$320,000 to monitor ambient surface waters and groundwater in state fiscal year 2023. Funding has also been established for three staff positions to support implementation of the 2024 PFAS legislation to identify sources of PFAS in public drinking water supplies.

#### **ADDITIONAL LINKS**

Department of Health PFAS in Drinking Water

# Washington

Washington State Department of Ecology <u>PFAS Webpage</u>



### **PFAS DEFINITION**

PFAS are defined in many statutes as at least one fully-fluorinated carbon atom. Not all actions and regulations focus on the entire PFAS class.

### **PFAS MONITORING**



Public Water Systems

Groundwater

Surface Water

Soil

Sediment

Fish & Wildlife

**Consumer Products** 

### **QUANTIFYING REDUCTION**



Amount of PFAS Collected

PFAS Levels in Drinking Water

PFAS Levels in Fish & Wildlife

Number of Fishing Advisories/Impaired Waters

Will track AFFF disposal once the program is up and running. PFAS are included in the state's <u>PBT monitoring program</u>.

### **PFAS PRIORITIES**

Pollution prevention - Reducing sources and uses of PFAS.

Harm reduction - Mitigating human exposures from drinking water and other pathways.

Responsible disposal of AFFF containing PFAS.

### **PFAS LEGISLATION**

<u>Chapter 70A.350 RCW</u>: Safer Products for Washington Program <u>Chapter 70A.400 RCW</u>: Firefighting Agents and Equipment <u>Chapter 70A. 222 RCW</u>: Toxics in Packaging Law <u>Chapter 70A.560 RCW</u>: Toxic Free Cosmetics Act

### **PFAS ACTION PLAN**

Access here. Last updated in 2021.

### CHANGES TO BIOSOLIDS MGMT.

Not considering ban on land application.

# Washington (Cont.)

Washington State Department of Ecology <u>PFAS Webpage</u>



### **COST-BENEFIT ANALYSIS**

Conducted June 2023; published cost-benefit analysis as part of rulemaking to restrict PFAS in some consumer products and require reporting in others.

2023 state budget – PFAS statewide funding strategy, building on state's PFAS Chemical Action Plan recommendations to identify cost estimates for the 2025-2027 and 2027-2029 biennia.

### AFFF TAKEBACK PROGRAM

Ecology will pay the costs associated with the program, such as pickup, transport, and disposal. It will also dispose of the foam in a manner that minimizes impacts to the environment and public health. The program is available to any fire department or first responder that has AFFF on-site, such as: municipal fire departments, fire districts, fire authorities, port authority fire departments, and fire training facilities. The program will actively begin once the state chooses a preferred disposal alternative.

#### **PFAS IN PRODUCTS**



Sales Bans

**Phase-outs in State Purchases** 

Ecology has the authority to restrict and require reporting of PFAS use in consumer products through rulemaking.

- Restriction on intentionally added on PFAS in carpets/rugs/furniture for indoor use/aftermarket stain treatments, report use of PFAS on outdoor furniture (adopted 2023) PFAS is also restricted in cosmetics, food packaging, AFFF and subject to reporting requirements in firefighting PPE.
- Firefighting Agents and Equipment, Chapter 70A.400 RCW (2018) regulates PFAS as a class in Class B firefighting foams, prohibit manufacture/sale/distribution of AFFF with intentionally-added PFAS and requires manufacturers report the use of PFAS in PPE to buyers.
- Toxics in Packaging Law, Chapter 70A. 222 RCW (2019) restricts PFAS as a class in food packaging in applications that Ecology has determined safer alternatives are feasible and available.

• Toxic Free Cosmetics Act (2023) restricts intentionally added PFAS in cosmetics.

Green purchasing guide is available here.

#### **ADDITIONAL LINKS**

Department of Health PFAS Webpage

# West Virginia

West Virginia Environment Department **PFAS Webpage** 



### **PFAS DEFINITION**

"Perfluoroalkyl and polyfluoroalkyl substances" or "PFAS" means non-polymeric 3 perfluoroalkyl and polyfluoroalkyl substances that contain at least two fully fluorinated carbon 4 atoms, excluding gases and volatile liquids. PFAS includes, among other substances, PFOA and 5 PFOS.

### PFAS MONITORING



**Public Water Systems** 



Surface Water

Soil

Landfill Leachate

### **PFAS PRIORITIES**

To develop public outreach and PFAS action plans as per the PFAS Protection Act.

### **PFAS LEGISLATION**

PFAS Protection Act HB2722: Use of Aqueous Film-Forming Foam (AFFF) for Fire Training Program Purposes

### CHANGES IN BIOSOLIDS MGMT.

Currently evaluating potential options.

# Wisconsin

Wisconsin Department of Natural Resources <u>PFAS Webpage</u>



### **PFAS DEFINITION**

Most referenced: PFAS, per-and polyfluoroalkyl substances, are a group of human-made chemicals used for decades in numerous products, including non-stick cookware, fast food wrappers, stain-resistant sprays and certain types of firefighting foam. These contaminants have made their way into the environment in a variety of ways, including spills of PFAS-containing materials, discharges of PFAS-containing wastewater to treatment plants, and use of certain types of firefighting foams.

#### **PFAS PRIORITIES**

Using a public health-led approach to PFAS, working to identify and mitigate exposure.

#### **PFAS ACTION PLAN**

Access <u>here</u>. No established update frequency.

### **PFAS MONITORING**



**Public Water Systems** 

Surface Water

Fish & Wildlife

**Biosolids/Sludge** 

Industrial/Municipal WWTP Effluent

### AFFF TAKEBACK PROGRAM

A contractor collects AFFF from eligible participants at no cost to the participants and then submits invoices to the state for payment. AFFF is transported to a hazardous waste landfill where it is solidified prior to landfilling.

#### **COST-BENEFIT ANALYSIS**

Conducted and required to conduct; \$275-\$500 for most lab sample matrices. Per rulemaking requirements, conducted analysis for NR 140 groundwater pollutant standards and final economic impact analysis for PFAS standards in drinking water; estimate costs associated with rule to exceed \$10M in 2year period. Allocated \$1M in 2021-2023 biennial budget for AFFF foam collection/disposal.

# Wyoming

Wyoming Department of Environmental Quality **PFAS Webpage** 

### **PFAS MONITORING**



**Public Water Systems** 



Groundwater

Surface Water

Fish & Wildlife

### **QUANTIFYING REDUCTION**

Wyoming has not yet identified how it would like to quantify PFAS reduction progress.

### **COST-BENEFIT ANALYSIS**

Plans to consider.

### **PFAS PRIORITIES**

Monitoring public water systems for PFAS.

### **PFAS ACTION PLAN**

Developed an internal PFAS Strategy in 2018. WDEQ plans to develop a broader Statewide **PFAS Action Plan as part of its Emerging Contaminants in Small or Disadvantaged** Communities Grant; public link not available.

### **AFFF TAKEBACK PROGRAM**

Considering.

# Appendices

# I. List of Acronyms

### ACRONYM FULL PHRASE

AFFF	Aqueous Film-Forming Foam
ASTHO	Association of State and Territorial Health Officials
ATSDR	Agency for Toxic Substances and Disease Registry
BIL	Bipartisan Infrastructure Law
CDC	Centers for Disease Control and Prevention
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CWA	Clean Water Act
CWSRF	Clean Water State Revolving Fund
DoD	U.S. Department of Defense
DOE	U.S. Department of Energy
DWSRF	Drinking Water State Revolving Fund
EC - SDC	Emerging Contaminants Small and Disadvantaged Communities
ECOS	Environmental Council of the States
EPA	U.S. Environmental Protection Agency
ERIS	Environmental Research Institute of the States
F3	Fluorine-Free Foam
FDA	U.S. Food and Drug Administration
GAC	Granular Activated Carbon
HFPO-DA	Hexafluoropropylene Oxide Dimer Acid
ITRC	Interstate Technology and Regulatory Council
MCL	Maximum Contaminant Level
MILSPEC	Military Specification
MPART	Michigan PFAS Action Response Team
MSGP	Multi-Sector General Permit
MSW	Municipal Solid Waste
NDAA	National Defense Authorization Act
NEIWPCC	New England Interstate Water Pollution Control Commission
NGO	Non-Governmental Organization
NPDES	National Pollutant Discharge Elimination System
NPDWR	National Primary Drinking Water Regulation
PFAS	Per- and Polyfluoroalkyl Substances
PFBS	Perfluorobutane Sulfonic Acid
PFHxS	Perfluorohexane Sulfonate
PFNA	Perfluorononanoic Acid
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane Sulfonate
POTW	Publicly-Owned Treatment Works
ppt	Parts per Trillion
PWS	Public Water System
RCRA	Resource Conservation and Recovery Act
RO	Reverse Osmosis

RSL	Regional Screening Levels
SCWO	Supercritical Water Oxidation
SDWA	Safe Drinking Water Act
TOF	Total Organic Fluorine
TRI	Toxics Release Inventory
TSCA	Toxic Substances Control Act
UCMR5	Fifth Round of the Unregulated Contaminant Monitoring Rule
USGS	U.S. Geological Survey
WWTP	Wastewater Treatment Plant

### **II. ECOS PFAS Resources**

### A. Paper: State Processes and Considerations for Setting State PFAS Standards

In 2019, ECOS compiled information on state PFAS standards, advisories, and guidance values across environmental media. Sharing data and regulatory approaches helps federal, state, and international authorities avoid unnecessary duplication of efforts, as well as understand and communicate about differences in guidelines. This paper outlines ECOS' findings on state actions and considerations for future regulatory activities on PFAS. The document was initially published in <u>February 2020</u> and updated in <u>March/April 2021</u>, <u>March 2022</u>, <u>March 2023</u>, and <u>April 2024</u>. ECOS will continue to update it annually as appropriate.

ECOS Paper on Setting State PFAS Standards (2024)

# B. Report: PFAS in Biosolids: A Review of State Efforts & Opportunities for Action

In 2023, ECOS published a report documenting information on state environmental agency policies, testing, research gaps, and risk communication challenges related to PFAS in biosolids. The paper explores ECOS' findings on how 34 states manage biosolids, and where opportunities exist for regulation, research, and risk communication.

ECOS Report on PFAS in Biosolids (2023)

### C. Database: PFAS Industry Data

In 2023, ECOS formed a workgroup of experts from state environmental agencies, federal agencies, and NGOs to compile and share information on industries that use PFAS. The workgroup narrowed down a list of industries to research and submit PFAS information on. ECOS compiled that information into an interactive table, which it hopes to update regularly, and collected links to other resources and considerations for evaluating further PFAS use in industries across the U.S.

#### PFAS Use in Industry Table

### D. Resolution 21-1: Advancing Collaboration and Coordination on Per- and Polyfluoroalkyl Substances

In this resolution (policy statement on behalf of ECOS Members), ECOS calls on federal agencies to conduct research to better understand the impact of, and destruction and disposal options for PFAS; to collaborate with states and provide funding for state work on PFAS; promulgate federal standards and expand regulatory authority to address PFAS; and prohibit the use of PFAS-containing aqueous film-forming foams. ECOS also calls on EPA to implement their 2021 PFAS Strategic Roadmap;

approve testing methods and develop health advisories or standards for PFAS in various media; use authorities in the CAA, RCRA, TSCA, and CERCLA to address PFAS; develop safer alternatives to PFAS; and closely coordinate across the federal government and with states to address challenges. Additionally, ECOS calls for an Executive Order on PFAS directing the Department of Defense to fully implement the PFAS provisions in the 2020 NDAA; to provide funding to states to oversee PFAS efforts at DoD sites; comply with RCRA and CERCLA requirements regarding PFAS; cleanup PFAS that is on or has migrated off DoD sites; and communicate openly and regularly with states about PFAS contamination on or resulting from DoD sites. This resolution was approved in December 2021 and revised in September 2024.

#### ECOS PFAS Resolution

### E. ERIS PFAS Risk Communications Hub

In 2018, ECOS (via ERIS) and ASTHO interviewed environmental and health agency staff and developed case studies on risk communication strategies and lessons learned for PFAS and HABs. Building upon lessons learned form this effort, ECOS and ASTHO in 2019 developed a clearinghouse of PFAS risk communication resources to help state environmental and health managers more easily collaborate and disseminate audience-appropriate information. ECOS intends to expand on and further develop risk communication resources.

PFAS Risk Communications Hub

### F. Other PFAS Resources

ECOS' PFAS webpage provides a searchable database of PFAS resources from states and other stakeholders. It includes links to documents, websites, regulations, and tools on a wide range of topics. ECOS regularly updates the resources available.

#### ECOS PFAS Webpage

In 2023, ITRC published its PFAS Technical and Regulatory Guidance Document, which was developed by a team of over 500 environmental practitioners and provides extensive information to support states and other stakeholders gain a working knowledge of the current state of PFAS science and practice.

**ITRC PFAS Guidance Document** 

# **III. Tables of State PFAS Regulations & Advisories**

### A. Drinking Water

State Drinking Water Regulations & Advisories							
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes	
Alabama	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR	
Alaska	Existing	Advisory	PFOA, PFOS	0.07	Individual	Action Level	
	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR	
Arizona	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR	

State Drinking Water Regulations & Advisories							
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes	
			PFHxS, PFNA, HFPO-DA, PFBS				
Arkansas							
California	Existing	Advisory	PFOA PFOS PFHxS PFBS	0.007 ppt - Public Health Goal (PHG), 3 ppt - Health- Protective Concentration for Noncancer Effects (HPCNE), 5.1 ppt - Notification Level (NL) 1 - PHG, 2 - HPCNE, 6.5 - NL 3 - NL 500 - NL	Individual		
	Planned	Regulatory	PFOA, PFOS, PFHxS	Limits TBD - In Progress	Individual		
	Planned	Advisory	PFHxA	Limits TBD - In Progress	Individual		
CNMI	Existing	Regulatory	PFNA	0.0044	Individual		
	Existing	Regulatory	PFOS, PFOA, PFNA	0.07	Sum		
	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR	
Colorado	Planned	Regulatory	PFOS PFOA PFHxS	4 ppt 4 10	Individual & Sum	U.S. EPA Final NPDWR	

State Drinking Water Regulations & Advisories							
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes	
			PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	10 10 1 (unitless) Hazard Index			
Connecticut	Existing	Advisory	PFOA PFOS PFNA PFHxS GenX PFHxA PFBS PFBA 6:2 CI-PFESA 8:2 CI-PFESA	0.016 0.010 0.012 0.049 0.019 0.24 0.76 1.8 0.002 (MDL) 0.005 (MDL)	Individual		
	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR	
DC							
Delaware	Existing	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR	

State Drinking Water Regulations & Advisories							
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes	
			PFHxS, PFNA, HFPO-DA, PFBS				
Florida	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR; Florida will adopt NPDWR as Florida Primary Drinking Water Standards	
Georgia	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR; Georgia will promulgate rules equivalent to NPDWR, Rulemaking anticipated in 2025	
Hawaii	Existing	Advisory	PFBS PFPeS PFHxS PFHpS PFOS PFDS PFEtA PFPrA PFPA PFPeA PFPeA PFHxA PFHpA PFOA	2.0 0.58 0.010 0.038 0.004 0.038 18 0.51 15 1.5 1.5 1.9 0.077 0.004	Individual	PFOA, PFOS, PFHxS, PFNA, HFPO- DA values reflect those of the U.S. EPA NPDWR	

State Drinking Water Regulations & Advisories							
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes	
			PFNA PFDA PFUnDA PFDoDA PFTrDA PFTeDA PFOSA HFPO-DA 6:2 FTS ADONA 6:2 FTOH 8:2 FTOH 6:2 FTOH 6:2 FtTAoS	0.010 0.0077 0.019 0.026 0.026 0.026 0.046 0.010 1.5 1.2 5.0 4.2 1.9			
ldaho	Existing	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR	
Illinois	Existing	Advisory	PFOA PFOS PFBS PFBA PFHxS PFHxA PFNA HFPO-DA PFDA PFDA PFDoDA PFTeDA PFUnDA	2 ppt 14 2,100 7,000 140 3,500 21 21 2 3,500 7,000 2,100	Individual	Health-Based Guidance Levels	

State Drinking Water Regulations & Advisories								
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes		
			PFPrA HQ-115 PFODA TFSI	3,500 2,100 280,000 2,100				
	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR		
Indiana	Existing	Advisory	PFOA PFOS PFBS PFHxS PFNA	0.6 0.04 6 0.4 0.06	Individual	Guidance Remediation Screening Levels		
	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR		
lowa	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR		

State Drinking Water Regulations & Advisories							
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes	
			2 or more of PFHxS, PFNA, HFPO-DA, PFBS				
Kansas	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR	
Kentucky	Existing	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR	
Louisiana	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR	
Maine	Existing	Regulatory	PFOA, PFOS, PFNA, PFHxS, PFHpA, PFDA	0.02	Sum	Interim Standard	

State Drinking Water Regulations & Advisories							
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes	
	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR	
Maryland	Existing	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR	
Massachusetts	Existing	Regulatory	PFOA, PFOS, PFNA, PFHpA, PFHxS, PFDA	0.02	Sum	MCLs	
	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR	
Michigan	Existing	Regulatory	PFOA PFOS PFNA	0.008 0.016 0.006	Individual	MCLs	

State Drinking Water Regulations & Advisories								
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes		
			PFHxA PFHxS PFBS HFPO-DA	400 0.051 0.42 0.37				
	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR		
Minnesota	Existing	Advisory	PFOA PFOS	0.00024 short-term, subchronic, chronic, 0.0000079 cancer 0.0023 short-term, subchronic, chronic, 0.0076 cancer	Individual	Health-Based Values (HBV), Updated 2024. MDH is in the process of finalizing the Health Risk Limits (HRL) rulemaking for the PFOA and PFOS HBVs; the HBVs will likely also become HRLs in 2025.		
	Existing	Regulatory	PFOA PFOS PFBA PFBS PFHxS PFHxA	<ul> <li>0.035 short-term,</li> <li>subchronic, chronic</li> <li>0.3 chronic</li> <li>7 short-term, subchronic,</li> <li>chronic</li> <li>0.1 short-term, subchronic,</li> <li>chronic</li> <li>0.047 short-term,</li> <li>subchronic, chronic</li> <li>0.2 short-term, subchronic,</li> <li>chronic</li> </ul>	Individual	HRLs & HBVs		
	Planned	Regulatory	PFOS PFOA	4 ppt 4	Individual & Sum	U.S. EPA Final NPDWR		
State Drinking Water Regulations & Advisories								
---	----------	------------	---	---	---------------------	----------------------------------	--	--
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes		
			PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	10 10 10 1 (unitless) Hazard Index				
Mississippi	Existing	Advisory	PFOA, PFOS	0.07	Individual & Sum	U.S. EPA Advisory - As Reference		
Missouri	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR		
Montana	Existing	Advisory	PFOA, PFOS	0.004	Individual & Sum			
	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR		
Nebraska	Planned	Regulatory	PFOS PFOA PFHxS PFNA	4 ppt 4 10 10	Individual & Sum	U.S. EPA Final NPDWR		

State Drinking Water Regulations & Advisories								
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes		
			HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	10 1 (unitless) Hazard Index				
Nevada	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR		
New Hampshire	Existing	Regulatory	PFOA PFOS PFHxS PFNA	0.012 0.015 0.11 0.018	Individual	MCLs		
New Jersey	Existing	Regulatory	PFOA PFOS PFNA	0.014 0.013 0.013	Individual	MCLs		
	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR		
New Mexico	Planned	Regulatory	PFOS PFOA PFHxS	4 ppt 4 10	Individual & Sum	U.S. EPA Final NPDWR		

State Drinking Water Regulations & Advisories								
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes		
			PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	10 10 1 (unitless) Hazard Index				
New York	Existing	Regulatory	PFOA, PFOS	0.01	Individual	MCLs		
North Carolina	Existing	Advisory	HFPO-DA	10 ng/L	Individual			
	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR		
North Dakota	Existing	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR		
Ohio	Existing	Advisory	PFOA, PFOS GenX PFBS PFHxS PFNA	4 10 2,000 10 10	Individual	Action Levels - 2024, PFBS Value is a Health-Based Water Reference Concentration, U.S. EPA - 2023		

State Drinking Water Regulations & Advisories								
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes		
	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR		
Oklahoma	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR		
Oregon	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR		
Pennsylvania	Existing	Regulatory	PFOA PFOS	0.014 0.018	Individual	MCLs		
	Planned	Regulatory	PFOS PFOA PFHxS PFNA	4 ppt 4 10 10	Individual & Sum	U.S. EPA Final NPDWR		

State Drinking Water Regulations & Advisories								
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes		
			HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	10 1 (unitless) Hazard Index				
Rhode Island	Existing	Regulatory	PFOA, PFOS, PFHxS, PFNA, PFHpA, PFDA	0.02	Individual & Sum	MCLs		
South Carolina	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR		
South Dakota	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR		
Tennessee								
Texas	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA	4 ppt 4 10 10	Individual & Sum	U.S. EPA Final NPDWR		

State Drinking Water Regulations & Advisories								
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes		
			PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	10 1 (unitless) Hazard Index				
Utah	Existing	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR		
Vermont	Existing	Regulatory	PFOA, PFOS, PFHxS PFNA, PFHpA	0.02	Sum	MCL		
	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR		
Virginia	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR, Will adopt in Waterworks regulation		

State Drinking Water Regulations & Advisories								
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes		
			PFHxS, PFNA, HFPO-DA, PFBS					
Washington	Existing	Regulatory	PFOA PFOS PFNA PFHxS PFBS	10 15 9 65 345	Individual	State Action Levels, Requires Testing and Public Notification, Recommended Treatment Levels		
	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR, will adopt in 2025		
West Virginia	Existing	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR		
Wisconsin	Existing	Regulatory	PFOA, PFOS, Precursors (FOSA, NEtFOSA, NEtFOSAA, NEtFOSE)	0.02	Individual & Sum	MCLs		
	Existing	Advisory	PFTeA PFHxA PFUnA	10 150 3	Individual	Proposed Health Guidelines		

State Drinking Water Regulations & Advisories								
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes		
			PFDoA PFBA PFBS PFNA PFDA PFHxS PFODA HFPO-DA DONA	0.5 10 450 0.03 0.3 0.04 400 0.3 3				
	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	U.S. EPA Final NPDWR		
Wyoming								

## B. Groundwater

State Groundwater Regulations & Advisories								
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes		
Alabama								
Alaska	Existing	Regulatory	PFOA, PFOS	0.4	Individual			
Arizona	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA	4 ppt 4 10 10 10	Individual	Reflective of Drinking Water - U.S. EPA Final NPDWR, No Hazard Index		
Arkansas								
California								
CNMI								
Colorado	Existing	Advisory	PFOA, PFOS, PFNA	0.07	Individual & Sum			
	Existing	Advisory	PFBS PFHxS	400 0.7	Individual			
Connecticut	Existing	Regulatory	PFOA, PFOS, PFHxS, PFHpA, PFNA	0.07	Sum			

State Groundwater Regulations & Advisories								
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes		
	Planned	Regulatory	PFOA PFOS PFNA PFHxS GenX PFHxA PFBS PFBA 6:2 CI-PFESA 8:2 CI-PFESA	Limits TBD - In Progress	Individual			
DC								
Delaware	Existing	Regulatory	PFOA PFOS PFHxS PFNA PFBS PFHxA PFBA HFPO-DA	0.006 0.004 0.039 0.006 0.6 0.61 1.8 0.006	Individual	HSCA		

State Groundwater Regulations & Advisories									
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes			
	Planned	Regulatory	TFSI HFPO-DA PFBS PFBA PFDoDA PFHxS PFHxA PFNA PFODA PFOS PFOA PFPrA PFTetDA PFUDA	0.59 0.0015 0.6 1.8 0.1 0.01 0.61 0.0059 80 0.0002 0 0.98 2 0.6	Individual				
Florida	Existing	Advisory	PFOA, PFOS	0.07	Individual & Sum				
Georgia									

State Groundwater Regulations & Advisories									
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes			
Hawaii	Existing	Advisory	PFBS PFPeS PFHxS PFHpS PFOS PFDS PFEtA PFPrA PFBA PFPeA PFHxA PFHpA PFOA	2.0 - Drinking Water Toxicity (DW), 130,000 - Chronic Aquatic Toxicity (CA), Acute Aquatic Toxicity (AA) 0.58 - DW, CA, AA 0.010 - DW, 10 - CA, AA 0.038 - DW, CA, AA 0.004 - DW, 1.1 - CA, 31 - AA 0.038 - DW, CA, AA 18 - DW, 100 - CA, AA 0.51 - DW, CA, AA 15 - DW, 830 - CA, 4,200 - AA 1.5 - DW, 1.5 - CA, AA 1.9 - DW, 6,300 - CA, 48,000 - AA 0.077 - DW, CA, AA 0.004 - DW, 8.3 - CA, 120 - AA	Individual				

	State Groundwater Regulations & Advisories							
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes		
			PFNA PFDA PFUnDA PFDoDA PFTrDA PFTeDA PFOSA HFPO-DA 6:2 FTS ADONA 6:2 FTOH	0.010 - DW, 8.0 - CA, 10 - AA 0.0077 - DW, 10 - CA, AA 0.019 - DW, 10 - CA, 440 - AA 0.026 - DW, 20 - CA, 640 - AA 0.026 - DW, CA, AA 0.026 - DW, CA, AA 0.046 - DW, CA, AA 1.5 - DW, 260 - CA, 11,000 - AA 1.2 - DW, CA, AA 5.0 - DW, CA, AA				
			6:2 FTOH 6:2 FTOH 6:2 FtTAoS	5.0 - DW, CA, AA 4.2 - DW, CA, AA 1.9 - DW, CA, AA				
ldaho	Existing	Advisory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	Reflective of Drinking Water - U.S. EPA Final NPDWR		

State Groundwater Regulations & Advisories								
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes		
	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	Reflective of Drinking Water - U.S. EPA Final NPDWR		
Illinois	Existing	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	Groundwater Quality Standards. Reflective of Drinking Water - U.S. EPA Final NPDWR		
Indiana	Existing	Regulatory	PFOA, PFOS	4 ppt	Individual	Reflective of Drinking Water - U.S. EPA Final NPDWR, Regulatory for Remediation Programs		
	Existing	Advisory	PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	10 ppt 10 10 1 (unitless) Hazard Index	Individual	Reflective of Drinking Water - U.S. EPA Final NPDWR		

State Groundwater Regulations & Advisories								
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes		
	Existing	Advisory	PFBA PFHxA PFUDA PFDoDA PFTetDA PFODA PFPrA TFSI	20 10 6 1 20 800 10 6	Individual	Screening levels reflect the non- MCL PFAS in the U.S. EPA RSL table, with cancer level adjustment to 10 <sup>-5</sup> . See values for all PFAS and their salts in the <u>IDEM</u> <u>Published Levels Table.</u>		
lowa	Existing	Regulatory	PFOA PFOS PFBS PFHxS PFNA HFPO-DA PFBA	0.000004 0.00002 2 0.14 0.021 0.01 7	Individual			
Kansas								
Kentucky	Existing	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	Reflective of Drinking Water - U.S. EPA Final NPDWR		

State Groundwater Regulations & Advisories							
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes	
	Existing	Advisory	PFBA PFHxA PFUDA PFDoDA PFTetDA PFODA PFPrA TFSI	20 10 6 1 20 800 10 6	Individual	Screening levels reflect the U.S. EPA RSL table.	
Louisiana						Standards are developed on a site- specific basis using the most current information available.	
Maine	Existing	Advisory	PFOA PFOS PFBS PFNA PFHxS PFHxA PFBA	110 75 32,000 42 310 10,000 28,000	Individual	Limits specific to construction worker demographic. <u>Maine Remedial Action Guidelines</u>	
Maryland	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	Reflective of Drinking Water - U.S. EPA Final NPDWR. Plan is to follow federal drinking water standards as MDE has authority over well construction and certification permits and is required to include contaminants of concern.	
Massachusetts	Existing	Regulatory	PFOA, PFOS, PFNA, PFHpA, PFHxS, PFDA	0.02	Sum	Cleanup Standard	
	Planned					In Development	

State Groundwater Regulations & Advisories								
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes		
Michigan	Existing	Regulatory	PFOA PFOS PFNA PFHxA PFHxS PFBS HFPO-DA	0.008, 0.17 - Groundwater Surface Water Interface (GSI), 0.066 - GSI for Drinking Water Source (GSI DW) 0.016, 0.012 - GSI, 0.011 - GSI DW 0.006, 0.03 - GSI, 0.019 - GSI DW 400 0.051, 0.21 - GSI, 0.059 - GSI DW 0.42, 670 - GSI, 8.3 - GSI DW 0.37	Individual	Cleanup Criteria		
Minnesota	Existing	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual	Reflective of Drinking Water - U.S. EPA Final NPDWR, Incorporated <u>by</u> <u>reference</u> for groundwater and surface water used for domestic consumption. Minnesota has been implementing the NPDWR for PFAS in PWSs, but continues to use MDH's HBVs/HRLs for private wells and other programs addressing groundwater contamination.		
	Existing	Advisory	PFOA PFOS	0.00024 short- term, subchronic, chronic,	Individual	Health-Based Values, Updated 2024. MDH is in the process of finalizing the HRL rulemaking for the PFOA and PFOS HBVs; the		

State Groundwater Regulations & Advisories								
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes		
				0.0000079 cancer 0.0023 short- term, subchronic, chronic, 0.0076 cancer		HBVs will likely also become HRLs in 2025.		
	Existing	Regulatory	PFOA PFOS PFBA PFBS PFHxS PFHxA	0.035 short-term, subchronic, chronic 0.3 chronic 7 short-term, subchronic, chronic 0.1 short-term, subchronic, chronic 0.047 short-term, subchronic, chronic 0.2 short-term, subchronic, chronic, chronic	Individual	HRLs & HBVs		
Mississippi								
Missouri								
Montana	Existing	Regulatory	PFOA, PFOS	0.07	Individual & Sum			
	Planned					Evaluating U.S. EPA Final NPDWR for Drinking Water.		

State Groundwater Regulations & Advisories								
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes		
Nebraska	Existing	Advisory	PFOA, PFOS	0.07	Individual & Sum	Remediation Goals. See Nebraska's March 2021 Voluntary Cleanup Program <u>Guidance</u> . NDEE is currently revising its Voluntary Cleanup Program Remediation Goals and Guidance based on updated toxicity studies.		
	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	Reflective of Drinking Water - U.S. EPA Final NPDWR. Once Nebraska has primacy of the NPDWR, it will extend it to groundwater that is or can be used for drinking water.		
Nevada								
New Hampshire	Existing	Regulatory	PFOA PFOS PFHxS PFNA	0.012 0.015 0.11 0.018	Individual	Groundwater Quality Standards		
New Jersey	Existing	Regulatory	PFOA PFOS PFNA	0.014 0.013 0.013	Individual	Groundwater Quality Standards		
	Existing	Regulatory	Chloroperfluoropolyether carboxylates (CIPFPECAs) HFPO-DA and its ammonium salt	0.002 0.02	Individual	Interim Specific Groundwater Quality Standards		

State Groundwater Regulations & Advisories							
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes	
	Planned	Regulatory	Perfluoropolyether Dicarboxylates (PFPE-DCA)	0.002	Individual	Interim Specific Groundwater Quality Standard	
New Mexico	Existing	Regulatory	PFOA, PFOS, PFHxS	0.07	Sum		
New York	Existing	Regulatory	PFOA PFOS	0.01 0.01	Individual	Groundwater Effluent Limitations	
North Carolina	Existing	Regulatory	PFOA PFOS HFPO-DA PFBS PFNA PFHxS PFBA PFHxA	0.7 ng/L 0.001 10 2000 10 10 7000 4000	Individual	IMACs	
	Planned	Regulatory	PFOA PFOS HFPO-DA	0.7 ng/L 0.001 10	Individual	Proposed	
North Dakota							
Ohio							
Oklahoma							
Oregon							

State Groundwater Regulations & Advisories									
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes			
Pennsylvania	Existing	Regulatory	HFPO-DA HFPO-DA Ammonium Salt PFBS PFHxS PFNA PFOA PFOS	0.001 - residential (res), 0.001 - non- residential (non- res) 0.001 - res, 0.001 - non-res 2 - res, 2 - non- res 0.01 - res, 0.01 - non-res 0.004 - res, 0.004 - non-res 0.004 - res, 0.004 - non-res	Individual				

State Groundwater Regulations & Advisories							
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes	
	Planned		PFOA PFOS PFBS PFBA PFHxA			See <u>54 Pa.B. 2937, Appendix A,</u> <u>Table 1</u> , which includes updates to the existing PFAS groundwater and soil direct contact values, as well as the addition of several new PFAS, based on Pennsylvania's PFAS MCLs and U.S. EPA's PFAS values published prior to March 13, 2024. When EPA published its NPDWR, the federal MCL values immediately became the effective groundwater medium-specific concentrations (MSCs) under Chapter 250. Updates to the PFAS compounds that were not included in EPA's NPDWR are based on the most up-to-date toxicity values that were available prior to March 13, 2024 and will be effective when published as final.	
Rhode Island	Existing	Regulatory	PFOA, PFOS, PFHxS, PFNA, PFHpA, PFDA	0.02	Individual & Sum	Ambient Groundwater Quality Standards for aquifers classified GAA or GA	
	Planned	Regulatory	PFOA, PFOS, PFHxS, PFNA, PFHpA, PFDA	Limits TBD - In Progress	Individual & Sum	Revision of existing Ambient Groundwater Quality Standards	
South Carolina							
South Dakota	Existing	Regulatory	PFAS meeting the state administrative rule definition of Potential Toxic Pollutants	Non-Detect	Individual	South Dakota Administrative Rule Chapter 74:54:01:05	

State Groundwater Regulations & Advisories							
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes	
	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	Reflective of Drinking Water - U.S. EPA Final NPDWR. Evaluating for adoption as Groundwater Standards.	
Tennessee							
Texas	Existing	Regulatory	PFOA, PFOSA, PFNA, PFDS, PFDoA, PFTrDA, PFTeDA, PFUnDa PFDA PFBA PFBS PFHxS PFOS, PFHpA PFHxA, PFPeA	0.29 0.37 24 34 0.093 0.56 12	Individual		
	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	Reflective of Drinking Water - U.S. EPA Final NPDWR. Texas is working to integrate the MCLs into its Remediation Cleanup Levels for applicable PFAS, and is evaluating reference doses that inform the cleanup levels for the 16 PFAS included in the state remediation program.	
Utah	Planned	Regulatory or Advisory TBD - In Progress	PFAS TBD - In Progress	Limits TBD - In Progress		Voluntary sampling conducted, no regulatory or advisory limits but considering adopting.	

State Groundwater Regulations & Advisories								
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes		
Vermont	Existing	Regulatory	PFOA, PFOS, PFNA, PFHpA, PFHxS	0.02	Individual & Sum	Groundwater Standard		
	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	Reflective of Drinking Water - U.S. EPA Final NPDWR.		
Virginia	Existing	Advisory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	Reflective of Drinking Water - U.S. EPA Final NPDWR, for Advisory/Guideline purposes only. See <u>Virginia House Bill 1085/State</u> <u>Bill 243, Section 7</u> (2024).		
Washington								
West Virginia	Existing	Advisory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO-DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	Reflective of Drinking Water - U.S. EPA Final NPDWR		
Wisconsin	Existing	Advisory	PFOA, PFOS, Precursors (FOSA, NEtFOSA, NEtFOSAA, NEtFOSE)	0.02	Individual & Sum	Health Limit		

State Groundwater Regulations & Advisories									
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes			
	Existing	Advisory	PFTeA PFHxA PFUnA PFDoA PFBA PFBS PFNA PFDA PFDA PFHxS PFODA HFPO-DA DONA	10 150 3 0.5 10 450 0.03 0.3 0.04 400 0.3 3	Individual	Proposed Health Guideline, Groundwater Enforcement Standards			
Wyoming									

## C. Surface Water

State Surface Water Regulations & Advisories									
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes			
Alabama						Alabama will consider U.S. EPA's Final Recommended Water Quality Standards and will implement ELGs once promulgated.			
Alaska									
Arizona	Planned	Regulatory	PFAS TBD - In Progress	Limits TBD - In Progress		Arizona is currently evaluating U.S. EPA's Final Recommended Aquatic Life Criteria for applicability to the state.			
Arkansas									
California									
CNMI	Existing	Regulatory	PFNA	4.4 ppt	Individual				
	Existing	Regulatory	PFOS, PFOA, PFNA	70 ppt	Sum				
Colorado	Existing	Advisory	PFOA, PFOS, PFNA	0.07	Sum				
	Existing	Advisory	PFBS PFHxS	400 0.7	Individual				
Connecticut	Planned	Regulatory	PFAS TBD - In Progress	Limits TBD - In Progress	Individual				
DC									
Delaware	Planned	Advisory	PFOA PFOS	Limits TBD - In Progress	Individual	Delaware is currently evaluating U.S. EPA's Final Recommended Aquatic Life Criteria.			

State Surface Water Regulations & Advisories									
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes			
Florida	Existing	Advisory	PFOA PFOS	0.5 0.01	Individual				
Georgia									
Hawaii	Existing	Advisory	PFBS PFPeS PFHxS PFHpS PFOS PFEtA PFPrA PFBA PFPeA PFHxA PFHpA PFHxA PFHpA PFOA PFNA PFDA PFDA PFDA	2.0 - Drinking Water Toxicity (DW), 130,000 - Chronic Aquatic Toxicity (CA), Acute Aquatic Toxicity (AA) 0.58 - DW, CA, AA 0.010 - DW, 10 - CA, AA 0.038 - DW, CA, AA 0.004 - DW, 1.1 - CA, 31 - AA 0.038 - DW, CA, AA 18 - DW, 100 - CA, AA 0.51 - DW, CA, AA 15 - DW, 830 - CA, 4,200 - AA 1.5 - DW, 1.5 - CA, AA 1.9 - DW, 6,300 - CA, 48,000 - AA 0.077 - DW, CA, AA 0.017 - DW, 8.3 - CA, 120 - AA 0.010 - DW, 8.0 - CA, 10 - AA 0.0077 - DW, 10 - CA, AA 0.019 - DW, 10 - CA, 440 - AA	Individual	Applies to surface water that is assumed to be a source of drinking water.			

State Surface Water Regulations & Advisories								
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes		
			PFTrDA PFTeDA PFOSA HFPO-DA 6:2 FTS ADONA 6:2 FTOH 8:2 FTOH 6:2 FTTAoS	0.026 - DW, CA, AA 0.26 - DW, CA, AA 0.046 - DW, CA, AA 0.010 - DW, CA, AA 1.5 - DW, 260 - CA, 11,000 - AA 1.2 - DW, CA, AA 5.0 - DW, CA, AA 4.2 - DW, CA, AA 1.9 - DW, CA, AA				
Idaho								
Illinois	Existing	Advisory	PFOA PFOS	100 - Acute, 100 - Chronic 71 - Acute, 0.25 - Chronic	Individual	Aquatic Life Water Quality Criteria		
	Planned	Regulatory				During the triennial review process, Illinois will evaluate U.S. EPA's ambient criteria to protect human health (if developed) to determine if the recommendations are feasible to incorporate into state rulemaking, and is proposing to adopt the updated human health methodology into state regulations, which will allow Illinois to develop Human Health Water Quality Criteria without having to go through the adoption process for each parameter.		
Indiana								
lowa								

State Surface Water Regulations & Advisories									
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes			
Kansas	Planned	Regulatory	PFOA, PFOS PFBA, PFNA, PFHxA, PFHxS, PFDA	0.00025 - 3.1 0.21 - 5.3 Individual Limits for these Wat are under d		Limits for these Water Quality Standards are under development.			
Kentucky									
Louisiana	Planned			Louisiana is reviewing for cor developing regulatory or guidelines.		Louisiana is reviewing for consideration of developing regulatory or advisory guidelines.			
Maine									
Maryland	Planned	Regulatory	PFOA PFOS			Maryland is considering adopting U.S. EPA's Final Recommended Aquatic Life Criteria.			
Massachusetts	Existing	Regulatory	PFOA, PFDA, PFHpA, PFNA PFOS, PFHxS	40,000 500	Individual	Surface Water Target Values - Recommended surface water action levels for swimming at permitted bathing beaches. See Massachusetts' <u>technical</u> <u>basis</u> for surface water values.			
	Planned	Regulatory	HFPO-DA PFBS PFBA PFHxA	Limits TBD - In Progress	Individual	Massachusetts is developing regulatory limits for four additional PFAS. Limits will likely be based on "background" levels.			
Michigan	Existing	Regulatory	PFOA PFOS PFBS PFNA PFHxS	0.17, 0.066 - Drinking Water Source (DW) 0.012, 0.011 - DW 670, 8.3 - DW 0.03, 0.019 - DW 0.21, 0.059 - DW	Individual	Surface Water Quality Standards			

State Surface Water Regulations & Advisories									
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes			
Minnesota	Existing	Regulatory	PFOA PFOS PFBS PFBA PFHxS PFHxA	25 ng/L - Class 1/2A or 1/2Bd (1/2ABd), 88 - Class 2B/2D (2B/D) 0.05 - 1/2ABd, 0.05 - 2B/D, 0.37 ng/g - Fish Tissue 140 - 1/2ABd, 350 - 2B/D 5,700 - 1/2ABd, 350 - 2B/D 20 - 1/2ABd, 36 - 2B/D 220 - 1/2ABd, 950 - 2B/D	Individual	Site-Specific Water Quality <u>Criteria</u> for Lake Elmo, Project 1007 Area, Bde Maka Ska, and the Mississippi River (Ford Dam to River Mile 812).			
	Existing	Regulatory	PFOA PFOS PFBS PFBA PFHxS PFHxA Mixtures containing two or more of PFBA, PFBS, and PFHxA	0.033 ng/L - Class 2B (2B), 0.00036 ng/g - Class 2 Fish Tissue (2FT) 0.027 ng/L - 2B, 0.021 ng/g - 2FT 5,500 ng/L - 2B 53,000 ng/L - 2B 0.0087 ng/L - 2B, 0.00085 ng/g - Class 2 2FT 11,000 ng/L - 2B ≤1 (unitless) Health Risk Index	Individual	Site-Specific Water Quality <u>Criteria</u> for the Mississippi River, Miles 820 to 812.			

State Surface Water Regulations & Advisories									
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes			
	Existing	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO- DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	Reflective of Drinking Water - U.S. EPA Final NPDWR. Incorporated <u>by reference</u> for groundwater and surface water used for domestic consumption (Class 1).			
	Planned	Regulatory	PFAS TBD - In Progress	Limits TBD - In Progress	Grouping TBD - In Progress	Aquatic Life and Recreation Standards for Class 2 waters based on <u>Minnesota</u> <u>Administrative Rule 7050.0222</u> .			
Mississippi									
Missouri									
Montana	Existing	Advisory	PFOA, PFOS	0.07	Individual & Sum				
	Planned	Regulatory				Montana is evaluating U.S. EPA's Final Recommended Aquatic Life Criteria, in addition to human health criteria.			

State Surface Water Regulations & Advisories									
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes			
Nebraska	Planned	Regulatory				Nebraska will consider adopting U.S. EPA's Final Recommended Aquatic Life Criteria once human health criteria for the consumption of aquatic life is published. Nebraska will also consider adopting U.S. EPA's final NPDWR for surface waters that serve as a public drinking water source.			
Nevada						U.S. EPA's Final NPDWR often apply to discharge permits in Nevada, but the state does not have its own regulatory or advisory guidance.			
New Hampshire	Existing	Regulatory	PFOA PFOS PFHxS PFNA	12 ng/L 15 18 11	Individual	Surface Water Standards			
New Jersey	Planned	Regulatory	PFOA PFOS PFNA	0.000000574 - Freshwater, 0.00000079 - Saline 0.000032 - Freshwater, 0.00014 - Saline 0.005 - Freshwater, 0.002 - Saline	Individual	Anticipated for proposal.			
New Mexico	Existing	Advisory	PFOA, PFOS	0.07	Sum	Screening Level required under Clean Water Act Section 401 certification in a NPDES permit, as well as for monitoring required for PFAS under U.S. EPA's 2021 MSGP.			

State Surface Water Regulations & Advisories									
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes			
New York	Existing	Regulatory & Advisory	PFOA PFOS	0.0067 - Human Health 0.0027 - Human Health, 160 - Aquatic Chronic Fresh, 710 - Aquatic Acute Fresh, 41 - Aquatic Chronic Saline, 190 - Aquatic Acute Saline	Individual	Ambient Water Quality Guidance Values			
North Carolina	Planned	Regulatory	PFOA PFOS HFPO-DA PFBS PFNA PFHxS PFBA PFHxA	0.06 ng/L 0.001 10 2000 6000 3000 9 10	Individual	Proposed			
North Dakota									
Ohio									
Oklahoma									
Oregon									
Pennsylvania									
Rhode Island	Existing	Regulatory	PFOA, PFOS, PFHxS, PFNA, PFHpA, PFDA, PFHxA, PFPeA	0.07	Individual & Sum	Surface Water Action Level, triggers reporting.			
South Carolina									

State Surface Water Regulations & Advisories								
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes		
South Dakota	Planned	Regulatory				South Dakota is considering adopting U.S. EPA's Final Recommended Aquatic Life Criteria.		
Tennessee								
Texas	Existing	Advisory	PFHxA PFHxS PFOS PFOA	0.7972 mg/L - Freshwater Chronic Benchmark (FCB) 0.0005 - FCB 0.0051 - FCB, 0.021 - Freshwater Acute Benchmark (FAB), 0.00029 - Saltwater Chronic Benchmark 2.77 - FCB, 4.47 - FAB	Individual	Aquatic Life Screening Benchmarks		
Utah	Planned	Regulatory or Advisory TBD - In Progress	PFOA PFOS	Limits TBD - In Progress	Grouping TBD - In Progress	Voluntary sampling as needed, regulatory or advisory limit development in progress.		
Vermont								
Virginia	Existing	Advisory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO- DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	Reflective of Drinking Water - U.S. EPA Final NPDWR, for Advisory/Guideline purposes only. See <u>Virginia House Bill 1085/State Bill</u> <u>243, Section 7</u> (2024).		

State Surface Water Regulations & Advisories									
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes			
Washington	Existing	Regulatory	PFOA	49000 - Acute, 94 - Chronic Water, 6.10 mg/kg - Chronic Fish Whole Body, 0.125 mg/kg - Chronic Fish Muscle, 1.11 mg/kg - Chronic Invertebrate Whole Body 3000 - Acute, 8.4 - Chronic Water, 6.75 mg/kg - Chronic Fish Whole Body, 2.91 mg/kg - Chronic Fish Muscle; 0.937 mg/kg - Chronic Invertebrate Whole Body	Individual	Ecological Marine			
	Existing	Regulatory	PFOA PFOS	7000 550	Individual	Ecological Freshwater			
West Virginia	Existing	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA PFAS Mixtures of 2 or more of PFHxS, PFNA, HFPO- DA, PFBS	4 ppt 4 10 10 10 1 (unitless) Hazard Index	Individual & Sum	Reflective of Drinking Water - U.S. EPA Final NPDWR. All surface waters in West Virginia are considered drinking water sources.			

216			

State Surface Water Regulations & Advisories						
State	Status	Туре	PFAS	Limits (µg/L, unless otherwise specified)	Grouping	Notes
	Planned	Regulatory				West Virginia is required under its PFAS Protection Act to adopt a Water Quality Standard since U.S. EPA finalized its Recommended Aquatic Life Criteria.
Wisconsin	Existing	Regulatory	PFOS PFOA (Surface Water as a Source to Drinking Water) PFOA	0.008 0.02 0.095	Individual	
Wyoming						
## D. Soil

	State Soil Regulations & Advisories								
State	Status	Туре	PFAS	Limits (mg/kg, unless otherwise specified)	Grouping	Notes			
Alabama									
Alaska	Existing	Regulatory	PFOA, PFOS	2.2 - Arctic Zone, 1.6 - Under 40" Zone, 1.3 - Over 40" Zone	Individual				
	Existing	Regulatory	PFOA PFOS	0.003 - Migration to Groundwater 0.0017 - Migration to Groundwater	Individual				
Arizona									
Arkansas									
California	Existing	Advisory	PFOA PFOS	0.19 - Residential, 2.5 - Industrial 0.13 - Residential, 1.6 - Industrial	Individual	Screening Levels			
CNMI									
Colorado									
Connecticut	Existing	Regulatory	PFOA, PFOS, PFHxS, PFHpA, PFNA	1.35 - Residential Direct Exposure, 41 - Industrial/Commercial Direct Exposure, 1.4 μg/kg - GA Pollutant Mobility Criteria, 14 μg/kg - GB Pollutant Mobility Criteria	Sum				
	Planned	Regulatory	PFOA PFOS PFNA PFHxS GenX PFHxA PFBS PFBA	Limits TBD - In Progress	Individual	Planned Update			

	State Soil Regulations & Advisories								
State	Status	Туре	PFAS	Limits (mg/kg, unless otherwise specified)	Grouping	Notes			
			6:2 Cl- PFESA 8:2 Cl- PFESA						
DC									
Delaware	Existing	Regulatory	PFOA PFOS PFHxS PFNA PFBS PFHxA PFBA HFPO-DA	0.019 0.013 0.13 0.019 1.9 3.2 7.8 0.023	Individual	HSCA			
	Planned	Regulatory	TFSI HFPO-DA PFBS PFBA PFDoDA PFHxS PFHxA PFNA PFODA PFOS PFOA PFPrA PFTetDA PFUDA	2.3 0.023 1.9 7.8 0.32 0.13 3.2 0.019 250 0.00063 0.000019 3.9 6.3 1.9	Individual				
Florida	Existing	Advisory	PFOA PFOS	1.3 – Residential (R), 25 - Industrial/Commercial (I/C), 0.002 – Leachability (L) 1.3 - R, 25 – I/C, 0.007 - L	Individual				

State Soil Regulations & Advisories									
State	Status	Туре	PFAS	Limits (mg/kg, unless otherwise specified)	Grouping	Notes			
	Planned	Regulatory	PFOS PFOA PFHxS PFNA HFPO-DA	Limits TBD - In Progress	Individual	Florida will adopt Direct Exposure and Leachability-Based Soil Cleanup Target Levels for MCL contaminants under U.S. EPA's Final NPDWR.			
Georgia									
Hawaii	Existing	Advisory	PFBS PFPeS PFHxS PFHpS PFOS PFDS PFEtA PFPrA PFPrA PFPeA PFPeA	3.8 - Residential (R), 34 - Industrial/Commercial (I/C), 0.16 - Drinking Water Leaching to Groundwater (DWG), 4,100 - Non-Drinking Water Leaching to Groundwater (NDWG) 1.9 - R, 17 - I/C, 0.10 - DWG, 0.10 - NDWG 0.025 - R, 0.23 - I/C, 0.0038 - DWG, 3.8 - NDWG 0.13 - R, 1.1 - I/C, 0.0079 - DWG, 0.0079 - NDWG 0.025 - R, 0.23 - I/C, 0.065 - DWG, 1.8 - NDWG 0.13 - R, 1.1 - I/C, 0.00024 - DWG, 0.065 - NDWG 29 - R, 130 - I/C, 0.39 - DWG, 2.1 - NDWG 5.0 - R, 37 - I/C, 0.00051 - DWG, 0.00051 - NDWG 48 - R, 430 - I/C, 0.22 - DWG, 13 - NDWG 5.1 - R, 45 - I/C, 0.024 - DWG, 0.024 - NDWG 6.3 - R, 56 - I/C, 0.34 - DWG, 1,100 - NDWG	Individual				

	State Soil Regulations & Advisories									
State	Status	Туре	PFAS	Limits (mg/kg, unless otherwise specified)	Grouping	Notes				
			PFHpA	0.25 - R, 2.3 - I/C, 0.027 - DWG, 0.027 - NDWG						
			PFOA	0.038 - R, 0.34 - I/C, 0.0011 - DWG, 2.3 - NDWG						
			PFNA	0.038 - R, 0.34 - I/C, 0.0047 - DWG, 3.7 - NDWG						
			PFDA	0.025 - R, 0.23 - I/C, 0.00051 - DWG, 0.66 - NDWG						
			PFUnDA	0.063 - R, 0.56 - I/C, 0.0086 - DWG, 4.5 - NDWG						
			PFDoDA	0.085 - R, 0.76 - I/C, 1,000,000 - DWG, 1,000,000 - NDWG						
			PFTrDA	0.085 - R, 0.76 - I/C, 1,000,000 - DWG, 1,000,000 - NDWG						
			PFTeDA	0.85 - R, 7.6 - I/C, 1,000,000 - DWG, 1,000,000 - NDWG						
			PFOSA	0.15 - R, 1.4 - I/C, 0.0051 - DWG, 0.0051 - NDWG						
			HFPO-DA	0.038 - R, 0.34 - I/C, 0.00068 - DWG, 0.00068 - NDWG						
			6:2 FTS	4.9 - R, 44 - I/C, 0.24 - DWG, 41 - NDWG						
			ADONA	3.8 - R, 34 - I/C, 0.19 - DWG, 1,600 - NDWG						
			6:2 FTOH	16 - R, 150 - I/C, 2.6 - DWG, 2.6 - NDWG						
			8:2 FTOH	14 - R, 120 - I/C, 1.6 - DWG, 1.6 - NDWG						
			6:2 FtTAoS	6.3 - R, 56 - I/C, 78,000 - DWG, 78,000 - NDWG						
Idaho										

State Soil Regulations & Advisories									
State	Status	Туре	PFAS	Limits (mg/kg, unless otherwise specified)	Grouping	Notes			
Illinois	Existing	Advisory	PFOA PFOS PFBS PFBA PFHxS PFHxA PFNA HFPO-DA PFDoDA PFDoDA PFTeDA PFTreDA PFTreDA	0.0219 - Residential (R), 0.195 - Industrial/Commercial (I/C), 4.24 - Worker (W), 1.22 - Soil Component of the Groundwater Ingestion Potable (Class I) and General (Class II)* (SCGI) 7.82 - R, 145 - I/C, 20.4 - W, 0.610 - SCGI 23,500 - R, 613,000 - I/C, 184,000 - W, 21 - SCGI 78,200 - R, 2,040,000 - I/C, 1,220,000 - W, 49.3 - SCGI 1,560 - R, 40,900 - I/C, 4,080 - W, 0.0848 - SCGI 39,100 - R, 1,020,000 - I/C, 102,000 - W, 16.9 - SCGI 235 - R, 6,130 - I/C, 612 - W, 0.84 - SCGI 235 - R, 6,130 - I/C, 6,120 - W, 0.203 - SCGI 0.156 - R, 4.09 - I/C, 0.408 - W, 0.0810 (I), 0.405 (II) - SCGI 3,910 - R, 102,000 - I/C, 10,200 - W, 1,190 (I), 5,960 (II) - SCGI 78,200 - R, 2,040,000 - I/C, 204,000 - W, 65,500 (I), 328,000 (II) - SCGI 23,500 - R, 613,000 - I/C, 61,200 - W, 313 (I), 1,570 (II) - SCGI 39,100 - R, 1,020,000 - I/C, 102,000 - W, 14.8 - SCGI 23,500 - R, 613,000 - I/C, 61,200 - W, 13.5 - SCGI	Individual	* If advisory level < LLOQ, the LLOQ is used.			

	State Soil Regulations & Advisories								
State	Status	Туре	PFAS	Limits (mg/kg, unless otherwise specified)	Grouping	Notes			
			PFODA TFSI	3,130,000 - R, 81,800,000 - I/C, 8,160,000 - W, 1,510,000 (I), 7,570,000 (II) - SCGI 23,500 - R, 613,000 - I/C, 61,200 - W, 13.5 - SCGI					
	Planned	Regulatory	Same as Above	Same as Above		Illinois will adopt its advisory values as regulatory.			
Indiana	Existing	Regulatory & Advisory	PFOA PFOS PFHxS PFBS PFNA HFPO-DA PFBA PFHxA PFUDA PFDoDA PFTetDA PFTetDA PFPrA TFSI	0.0003 - Residential Long Term (R), 0.0008 - Commercial Long Term (C), 0.04 - Short Term (ST) 0.009 - R, 0.08 - C, 0.2 - ST 2 - R, 20 - C, 30 - ST 30 - R, 300 - C, 500 - ST 0.3 - R, 3 - C, 5 - ST 6 - ST 2000 - ST 40 - R, 400 - C, 900 - ST 30 - R, 300 - C, 500 - ST 4 - R, 40 - C, 90 - ST 90 - R, 800 - C, 2000 - ST 4000 - R, 30000 - C, 70000 - ST 1000 - ST 30 - R, 400 - C, 600 - ST	Individual	Screening levels reflect the PFAS in the U.S. EPA RSL table, with cancer level adjustment to 10 <sup>-5</sup> and exposure from 350 to 250 days/year. See values for all PFAS and their salts in the <u>IDEM Published Levels Table</u> . Limits for PFOA and PFOS are regulatory for remdiation programs. Limits for other PFAS are advisory.			
lowa	Existing	Regulatory & Advisory	PFOA PFOS PFBS PFHxS PFNA HFPO-DA PFBA	35 0.00048 18 1.6 0.18 0.18 61	Individual				
Kansas	Planned	Advisory				Will consider U.S. EPA's RSLs for CERCLA listings.			

State Soil Regulations & Advisories								
State	Status	Туре	PFAS	Limits (mg/kg, unless otherwise specified)	Grouping	Notes		
Kentucky	Existing	Advisory	PFOA PFOS PFHxS PFBS PFNA HFPO-DA PFBA PFHxA PFUDA PFDoDA PFTetDA PFODA PFPrA TFSI	0.000019 - Residential (R), 0.000078 - Industrial (I), 0.00000004 - Protection of Groundwater (G) 0.0063 - R, 0.058 - I, 0.000015 - G 1.3 - R, 16 - I, 0.00017 - G 19 - R, 250 - I, 0.0003 - G 0.19 - R, 2.5 - I, 0.00025 - G 0.23 - R, 3.5 - I, 0.00015 - G 78 - R, 1200 - I, 0.0065 - G 32 - R, 410 - I, 0.0024 - G 19 - R, 250 - I, 0.045 - G 3.2 - R, 41 - I, 0.17 - G 630 - R, 820 - I, 9.4 - G 2500 - R, 33000 - I, 220 - G 290 - R, 580 - I, 0.0021 - G 23 - R, 350 - I, 0.0019 - G	Individual	Screening levels reflect the U.S. EPA RSL table. Kentucky uses U.S. EPA's RSLs and SSLs for applicable PFAS published. Kentucky is considering an update to its soil guidance.		
Louisiana						Louisiana develops standards on a site-specific basis using the most current information available.		
Maine	Existing	Advisory	PFOA PFOS PFBS PFBA	0.017 - Leaching to Groundwater (GW), 0.26 - Residential (R), 3.4 - Commercial Worker (C), 0.74 - Park User (P), 0.85 - Recreator Sediment (RS), 0.77 - Construction Worker (CW) 0.01 - GW, 0.17 - R, 2.2 - C, 0.49 - P, 0.57 - RS, 0.51 - CW 0.11 - GW, 26 - R, 340 - C, 74 - P, 85 - RS, 230 - CW 0.36 - GW, 110 - R, 1,600 - C, 300 - P, 350 - RS, 2,000 - CW	Individual	Remedial Action Guidelines		

State Soil Regulations & Advisories								
State	Status	Туре	PFAS	Limits (mg/kg, unless otherwise specified)	Grouping	Notes		
			PFHxS PFHxA PFNA	0.00047 - GW, 1.7 - R, 22 - C, 4.9 - P, 5.7 - RS, 5.1 - CW 0.13 - GW, 43 - R, 560 - C, 120 - P, 140 - RS, 130 - CW 0.0046 - GW, 0.26 - R, 3.4 - C, 0.74 - P, 0.85 - RS, 0.77 - CW				
	Planned	Advisory	PFAS TBD - In Progress	Limits TBD - In Progress	Individual	Will update Remedial Action Guidelines, Date TBD.		
Maryland								
Massachusetts	Existing	Regulatory	PFOA PFOS PFNA PFHxS PFHpA PFDA	0.72 ug/kg 2 0.32 0.3 0.5 0.3	Individual			
Michigan								
Minnesota	Existing	Advisory	PFOA PFOS PFBA PFBS PFHxS PFHxA PFDA HFPO-DA	0.00016 - Residential/Recreational (R), 0.00086 - Commercial/Industrial (C/I) 0.0013 - R, 0.018 - C/I 20 - R, 220 - C/I 1.1 - R, 14 - C/I 0.000005413 - R, 0.000072 - C/I 1.9 - R, 24 - C/I 0.000027 - R, 0.00036 - C/I 0.066 - R, 0.97 - C/I	Individual	<u>Soil Reference Values</u> (Chronic)		
Mississippi								
Missouri								

State Soil Regulations & Advisories									
State	Status	Туре	PFAS	Limits (mg/kg, unless otherwise specified)	Grouping	Notes			
Montana	Existing	Advisory	PFOA PFOS PFHxS PFBS PFNA HFPO-DA PFBA PFHxA PFUDA PFDoDA PFTetDA PFODA PFPrA TFSI	$\begin{array}{l} 0.000019 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	Individual	Screening levels reflect the U.S. EPA RSL table.			
Nebraska	Existing	Advisory	PFOA PFOS	0.32 - Residential (R), 15 - Industrial (I), 0.0006 - Protection of Groundwater (G) 3.2 - R, 150 - I, 0.00078 - G	Individual	Remediation Goals. See Nebraska's March 2021 Voluntary Cleanup Program <u>Guidance</u> . Nebraska is revising its Voluntary Cleanup Program Guidance and Remediation Goals based on updated toxicity studies.			
	Planned	Advisory	PFAS TBD - In Progress	Limits TBD - In Progress	Individual				
Nevada									

State Soil Regulations & Advisories									
State	Status	Туре	PFAS	Limits (mg/kg, unless otherwise specified)	Grouping	Notes			
New Hampshire	Existing	Advisory	PFOA PFOS PFHxS PFNA	0.2 - Residential (R), 1.3 - Maintenance Worker (M) 0.1 - R, 0.6 - M 0.1 - R, 0.9 - M 0.1 - R, 0.9 - M	Individual				
	Existing	Regulatory	PFOA PFOS PFHxS PFNA	0.0002 0.0005 0.0002 0.0004	Individual	Remediation Standards			
New Jersey	Existing	Regulatory	PFOA PFOS PFNA HFPO-DA	0.13 - Residential (R), 1.8 - Non- Residential (NR), Site-Specific (Migration to Groundwater) (MGW) 0.11 - R, 1.6 - NR, Site-Specific MGW 0.047 - R, 0.67 - NR, Site-Specific MGW 0.23 - R, 3.9 - NR, Site-Specific MGW	Individual	Interim Soil Remediation Standards. On March 17, 2025, NJ DEP proposed to replace interim soil remediation standards with promulgated Remediation Standards at N.J.A.C 7:26D.			
	Planned	Regulatory				New Jersey will continue to develop standards as needed based on new toxicity information and occurrence information in the state.			
New Mexico	Existing	Regulatory	PFOA, PFOS, PFNA PFBS PFHxS	0.185 - Residential (R), 3.74 - Industrial/Occupational (I/O), 0.807 - Construction Worker (C) 18.5 - R, 374 - I/O, 80.7 - C 1.23 - R, 24.9 - I/O, 5.38 - C	Individual	Screening Levels			
New York	Existing	Advisory	PFOA	0.66 ug/kg - Unrestricted (U), 6.6 - Residential (R), 33 - Restricted Residential (RR), 500 - Commercial	Individual	Interim Soil Cleanup Objectives			

State Soil Regulations & Advisories									
State	Status	Туре	PFAS	Limits (mg/kg, unless otherwise specified)	Grouping	Notes			
			PFOS	(C), 600 - Industrial (I), 1.1 - Protection of Groundwater (G) 0.88 - U, 8.8 - R, 44 - RR, 440 - C, 440 - I, 3.7 - G					
	Planned	Advisory	PFOA PFOS	Limits TBD - In Progress	Individual	New York will formally propose Soil Cleanup Objectives after a Rural Soil Background Study is completed. <u>Multiple categories</u> included.			
North Carolina	Existing	Advisory	HFPO-DA	0.66 - Residential, 0.97 - Commercial/Industrial	Individual	Preliminary Remediation Goals			
North Dakota									
Ohio									
Oklahoma									
Oregon									
Pennsylvania	Existing	Regulatory	PFOA PFOS PFBS	4.4 - Residential (R), 64 - Non- Residential (NR) 4.4 - R, 64 - NR 66 - R, 960 - NR	Individual				

State Soil Regulations & Advisories									
State	Status	Туре	PFAS	Limits (mg/kg, unless otherwise specified)	Grouping	Notes			
	Planned	Regulatory	PFOA PFOS PFBS PFBA PFHxA HFPO-DA	0.86 - Residential (R), 12 - Non- Residential (NR) 0.68 - R, 9.9 - NR 66 - R, 960 - NR 220 - R, 3200 - NR 110 - R, 1600 - NR 0.66 - R, 9.6 - NR	Individual	See <u>54 Pa.B. 2937, Appendix A, Table</u> <u>1</u> , which includes updates to the existing PFAS groundwater and soil direct contact values, as well as the addition of several new PFAS, based on Pennsylvania's PFAS MCLs and U.S. EPA's PFAS values published prior to March 13, 2024. When EPA published its NPDWR, the federal MCL values immediately became the effective groundwater medium- specific concentrations (MSCs) under Chapter 250. Updates to the PFAS compounds that were not included in EPA's NPDWR are based on the most up-to-date toxicity values that were available prior to March 13, 2024 and will be effective when published as final.			
Rhode Island	Planned	Regulatory	PFOA, PFOS, PFHxS, PFHpA, PFNA, PFDA	Limits TBD - In Progress	Individual	Will apply to direct exposure and leachability scenarios, and limits will vary depending on use scenario and/or groundwater classification.			
South Carolina									
South Dakota									
Tennessee									

State Soil Regulations & Advisories								
State	Status	Туре	PFAS	Limits (mg/kg, unless otherwise specified)	Grouping	Notes		
Texas	Existing	Regulatory	PFBA PFPeA, PFHxA PFHxS PFHpA PFOS PFOA PFOSA PFNA PFDS PFDoA PFTrDA PFTrDA PFTeDA PFUnDA PFDA PFDA PFBS	61 33 0.25 1.5 1.5 0.6 0.058 0.76 0.8 0.79 0.61 0.51 0.8 0.99 86	Individual			
Utah	Existing	Advisory	PFOA PFOS PFHxS PFBS PFNA HFPO-DA PFBA PFHxA PFUDA PFDoDA PFTetDA PFODA PFPrA TFSI	0.000019 - Residential (R), 0.000078 - Industrial (I), 0.00000004 - Protection of Groundwater (G) 0.0063 - R, 0.058 - I, 0.000015 - G 1.3 - R, 16 - I, 0.00017 - G 19 - R, 250 - I, 0.003 - G 0.19 - R, 2.5 - I, 0.00025 - G 0.23 - R, 3.5 - I, 0.00015 - G 78 - R, 1200 - I, 0.0065 - G 32 - R, 410 - I, 0.0024 - G 19 - R, 250 - I, 0.045 - G 3.2 - R, 41 - I, 0.17 - G 630 - R, 820 - I, 9.4 - G 2500 - R, 33000 - I, 220 - G 290 - R, 580 - I, 0.0021 - G 23 - R, 350 - I, 0.0019 - G	Individual	Screening levels reflect the U.S. EPA RSL table.		

State Soil Regulations & Advisories									
State	Status	Туре	PFAS	Limits (mg/kg, unless otherwise specified)	Grouping	Notes			
	Planned	Regulatory	PFOA PFOS PFHxS PFBS PFNA HFPO-DA PFBA PFHxA PFUDA PFDoDA PFTetDA PFTetDA PFPrA TFSI	0.0000027 ug/L 0.002 0.39 6 0.059 0.015 18 9.9 6 1 20 800 9.8 5.9	Individual	Tap water screening levels reflective of the U.S. EPA RSL table.			
Vermont	Existing	Regulatory	PFOA, PFOS, PFHxS, PFHpA, PFNA	1.22	Sum				
Virginia									
Washington	Existing	Regulatory	PFOA PFOS PFNA PFHxS PFBS	0.000063 - Vadose Zone (V), 0.000004 - Saturated Zone (S), 0.24 - Unrestricted Land Use B (UB), 11 - Industrial Land Use C (IC) 0.00017 - V, 0.0000099 - S, 0.24 - UB, 11 - IC 0.00008 - V, 0.0000048 - S, 0.2 - UB, 8.8 - IC 0.00041 - V, 0.000026 - S, 0.78 - UB, 34 - IC 0.0018 - V, 0.00012 - S, 24 - UB, 1100 - IC	Individual	Soil CUL, Protective of Groundwater			

State Soil Regulations & Advisories								
State	Status	Туре	PFAS	Limits (mg/kg, unless otherwise specified)	Grouping	Notes		
			HFPO-DA	0.0000072 - S, 0.24 - UB, 11 - IC				
West Virginia	Planned	Regulatory	HFPO-DA PFBS PFBA PFDA PFDoDA PFHxS PFHxA PFNA PFNA PFOS PFOA PFTetDA PFUDA	Limits TBD - In Progress	Individual	Voluntary Remediation Program		
Wisconsin	Existing	Regulatory	PFOA PFOS PFBS	1.26 - Residential (R), 16.3 - Industrial (I) 1.26 - R, 16.4 - I 19 - R, 246 - I	Individual	Residual Contaminant Levels		
Wyoming								

## E. Air

	State Air Regulations & Advisories								
State	Status	Туре	PFAS	Limits (µg/m^3, unless otherwise specified)	Grouping	Notes			
Alabama									
Alaska									
Arizona									
Arkansas									
California									
CNMI									
Colorado									
Connecticut									
DC									
Delaware									
Florida									
Georgia									
Hawaii	Existing	Advisory	PFEtA PFPrA PFBA PFPeA PFHxA	366 individual, residential / 280 commercial, industrial 1.8 / 7.7 10 / 44 1.5 / 6.1 1.8 / 7.7	Individual				

State Air Regulations & Advisories								
State	Status	Limits (µg/m^3, tatus Type PFAS unless otherwise Grouping specified)		Notes				
Idaho								
Illinois								
Indiana								
lowa								
Kansas								
Kentucky								
Louisiana								
Maine								
Maryland								
Massachusetts								
Michigan	Existing	Regulatory	PFOA PFOS 6:2 FTS Perfluorobutyl ethylene dichloromethylsilane Fomblin Perfluoropolyether	0.0001 (24-hr avg) 0.0004 (24-hr avg) 1 2 0.1	Individual	Initial Threshold Screening Levels		
Minnesota	Existing	Advisory	PFOA PFOS	0.063 short-term, subchronic, chronic 0.011 short-term, subchronic, chronic	Individual	Air Guidance Values		

State Air Regulations & Advisories									
State	Status	Туре	PFAS	Limits (µg/m^3, unless otherwise specified)	Grouping	Notes			
			PFHxS PFBA PFBS PFHxA	0.034 short-term, subchronic, chronic 10 short-term, subchronic, chronic 0.3 short-term, subchronic, chronic 1 short-term, 0.5 subchronic, chronic					
Mississippi									
Missouri									
Montana									
Nebraska									
Nevada									
New Hampshire	Existing	Regulatory	APFO	0.05 0.024	Individual	24-Hour Ambient Air Limit Annual Ambient Air Limit			
New Jersey	Existing	Advisory	PFOA PFOS	0.007 0.006	Individual	Inhalation Reference Concentration			
	Existing	Advisory	HFPO-DA	0.01	Individual	Screening Inhalation Reference Concentration			
New Mexico									

State Air Regulations & Advisories									
State	Status	Туре	PFAS	Limits (µg/m^3, unless otherwise specified)	Grouping	Notes			
New York	Existing	Advisory	PFOA & 4 of its salts (NH4+, Ag(I), Na, K)	0.0053	Sum	Chronic Annual Guideline Concentration Values for Ambient Air			
	Planned					Will derive chronic annual ambient guideline concentrations for PFAS with sufficient toxicological information to be used in conjunction with air toxics regulation.			
North Carolina									
North Dakota									
Ohio									
Oklahoma									
Oregon									
Pennsylvania									
Rhode Island									
South Carolina									
South Dakota									
Tennessee									

State Air Regulations & Advisories									
State	Status	Туре	PFAS	Limits (µg/m^3, unless otherwise specified)	Grouping	Notes			
Texas	Existing	Advisory	PFBA PFBS PFHxS PFOS PFOA PFOSA PFNA PFDA PFDA	3.5 4.9 0.013 0.081 0.0041 0.0041 0.028 0.053 0.042	Individual				
Utah									
Vermont									
Virginia									
Washington									
West Virginia									
Wisconsin	Existing	Regulatory	Ammonium perfluorooctanoate Perfluoroisobutylene	0.24, 24-hour average 8.18, 1-hour average	Individual				
Wyoming									

## F. Fish & Wildlife

State Fish & Wildlife Advisories								
State	Status	Туре	PFAS	Limits (ppb, unless otherwise specified)	Grouping	Notes		
Alabama	Existing	Advisory - Fish	PFOS	156	Individual	Limit triggers fish consumption advisory.		
Alaska								
Arizona								
Arkansas								
California								
CNMI								
Colorado	Existing	Advisory - Fish	PFOS	0.002 μg/kg/day	Individual	Reflective of ATSDR's 2021 MRL.		
Connecticut	Existing	Advisory - Finfish, Shellfish	PFOS	<ul> <li>&lt; 4 - Unlimited Consumption</li> <li>≥ 4 - 8 - 1 Meal/Week</li> <li>≥ 8 - 31 - 1 Meal/Month</li> <li>≥ 31 - Do Not Eat</li> </ul>	Individual			
DC								
Delaware								
Florida								
Georgia								
Hawaii								
Idaho								

State Fish & Wildlife Advisories									
State	Status	Туре	PFAS	Limits (ppb, unless otherwise specified)	Grouping	Notes			
Illinois	Existing	Advisory - Fish	PFOS PFUnA	0 - 10 - Unrestricted 11 - 50 - 1 Meal/Week 51 - 200 - 1 Meal/Month >200 ng/g - Do Not Eat 0-0.7 - Unrestricted >0.7 - 3.0 - 1 Meal/Week 3.1 - 12 - 1 Meal/Month >12 - Do Not Eat	Individual				
Indiana	Existing	Advisory - Fish	PFOS	<20 - Unrestricted Consumption 20 - 50 - 1 Meal/Week 50 - 200 - 1 Meal/Month >200 - Do Not Eat	Individual				
lowa									
Kansas	Planned	Advisory - Fish	PFOA, PFOS	0.201 - 6.49 mg/kg (Whole Body Fish)	Individual				
Kentucky									
Louisiana									
Maine	Existing	Advisory - Fish	PFOS	3.5 - 1 8oz Meal/Week 14 - 1 8oz Meal/Month 60 - 3 8oz Meals/Year	Individual				
	Existing	Advisory - Free- Ranging White- Tailed Deer and Wild Turkey	PFOS	3.5 - 1 8oz Meal/Week 15 - 1 8oz Meal/Month (Children) 1.7 - 1 3oz Meal/Week 7.5 - 1 3oz Meal/Month	Individual				
	Existing	Advisory - Milk	PFOS	0.21 - 76.7 g/kg/day (Children 1-2 years old)	Individual				

State Fish & Wildlife Advisories									
State	Status	Туре	PFAS	Limits (ppb, unless otherwise specified)	Grouping	Notes			
	Existing	Advisory - Beef	PFOS	3.4 - 4.7 g/kg/day (Children 1-6 years old)	Individual				
Maryland	Existing	Advisory - Fish, Shellfish	PFOS	General Population < 2.4 - No Limit > 2.4 - 2.7 - 8 Meals/Month > 2.7 - 3.1 - 7 Meals/Month > 3.1 - 3.7 - 6 Meals/Month > 3.7 - 4.5 - 5 Meals/Month > 4.5 - 5.8 - 4 Meals/Month > 5.8 - 8.2 - 3 Meals/Month > 8.2 - 13.6 - 2 Meals/Month > 13.6 - 40.8 - 1 Meal/Month > 40.8 - Do Not Eat Women < 2.1 - No Limit > 2.1 - 2.4 - 8 Meals/Month > 2.8 - 3.3 - 6 Meals/Month > 2.8 - 3.3 - 6 Meals/Month > 3.3 - 4.0 - 5 Meals/Month > 4.0 - 5.1 - 4 Meals/Month > 5.1 - 7.2 - 3 Meals/Month > 7.2 - 12.0 - 2 Meals/Month > 12.0 - 36.0 - 1 Meal/Month > 36.0 - Do Not Eat	Individual				

State Fish & Wildlife Advisories								
State	Status	Туре	PFAS	Limits (ppb, unless otherwise specified)	Grouping	Notes		
				Children < 1.2 - No Limit > 1.2 - 1.4 - 8 Meals/Month > 1.4 - 1.6 - 7 Meals/Month > 1.6 - 1.9 - 6 Meals/Month > 1.9 - 2.3 - 5 Meals/Month > 2.3 - 3.0 - 4 Meals/Month > 3.0 - 4.2 - 3 Meals/Month > 4.2 - 6.9 - 2 Meals/Month > 6.9 - 20.8 - 1 Meal/Month > 20.8 - Do Not Eat				
Massachusetts	Existing	Advisory - Fish	PFOS PFBS PFHxS PFOA, PFNA, HFPO- DA PFBA	> 81.1 - Do Not Eat (Sensitive Population) (S), $\leq 0.22 - 1$ Meal/Day S, > 183 - Do Not Eat (General Population) (G), $\leq 0.50 - 1$ Meal/Day G > 12,100 - Do Not Eat (S), $\leq 33 - 1$ Meal/Day (S), > 27,400 Do Not Eat (G), $\leq 75 - 1$ Meal/Day (G) > 811 - Do Not Eat (S), $\leq 2.22 - 1$ Meal/Day (S), > 1820 Do Not Eat (G), $\leq 5.01 - 1$ Meal/Day (G) > 122 - Do Not Eat (S), $\leq 0.33 - 1$ Meal/Day (S), > 274 Do Not Eat (G), $\leq$ 0.75 - 1 Meal/Day (G) > 40,500 - Do Not Eat (S), $\leq 111 - 1$ Meal/Day (S), >91,400 - Do Not Eat (G), $\leq 250 - 1$ Meal/Day (G)	Individual			

				State Fish & Wildlife Advisories		
State	Status	Туре	PFAS	Limits (ppb, unless otherwise specified)	Grouping	Notes
Michigan	Existing	Advisory - Fish	PFOS	<ul> <li>≤9 - 16 Meals/Month</li> <li>&gt;9 - 13 - 12 Meals/Month</li> <li>&gt;13 - 19 - 8 Meals/Month</li> <li>&gt;19 - 38 - 4 Meals/Month</li> <li>&gt;38 - 75 - 2 Meals/Month</li> <li>&gt;75 - 150 - 1 Meal/Month</li> <li>&gt;150 - 300 - 6 Meals/Year</li> <li>&gt;300 - Do Not Eat</li> </ul>	Individual	These numbers are anticipated to be updated in May 2025.
	Existing	Advisory - Deer	PFOS	>300 - Do Not Eat	Individual	Advisory specific to a 3-mile radius around Clark's Marsh in Oscoda.
Minnesota	Existing	Advisory - Fish	PFOS	Limits are based on specific waterbodies, populations, and fish species that are incompatible to this table. <u>This chart</u> more clearly outlines Minnesota's PFAS-related fish consumption guidance in rivers and lakes, or guidance for fish consumption of all contaminants can be referenced in MDH's documents on <u>Rivers/Children and Pregnant</u> <u>Women, Rivers/General Population, Lakes/Children and Pregnant</u> <u>Women, and Lakes/General</u> <u>Population</u> .	Individual	<u>Minnesota Fish Consumption</u> <u>Guidance</u>
Mississippi						
Missouri						

State Fish & Wildlife Advisories									
State	Status	Туре	PFAS	Limits (ppb, unless otherwise specified)	Grouping	Notes			
Montana	Planned	Advisory - Fish				Montana is evaluating U.S. EPA's Final Recommended Aquatic Life Criteria for consideration of fish consumption advisories.			
Nebraska	Planned	Advisory - Fish	PFAS TBD - In Progress	Limits TBD - In Progress	Grouping TBD - In Progress	Nebraska is in the process of reviewing fish tissue monitoring recommendations in U.S. EPA's Final Recommended Aquatic Life Criteria for several PFAS.			
Nevada	Planned	Advisory - Fish				Nevada is in the process of reviewing U.S. EPA's Final Recommended Aquatic Life Criteria for consideration of non- regulatory guidance.			
New Hampshire	Existing	Advisory - Fish	PFOS	Limits are based on specific waterbodies, populations, and fish species that are incompatible to this table.	Individual	New Hampshire Fish Consumption Guidance			

				State Fish & Wildlife Advisories		
State	Status	Туре	PFAS	Limits (ppb, unless otherwise specified)	Grouping	Notes
New Jersey	Existing	Advisory - Fish	PFOS PFNA PFOA	0.56 - Unlimited (General [G] and High Risk [HR] Populations), >0.56- 3.9 - 1 Meal/Week (G, HR), >3.9-17 - 1 Meal/Month (G, HR), >17 - Do Not Eat (HR), >17-51 - 1 Meal/3 Months (G), >51-204 - 1 Meal/Year (G), >204 - Do Not Eat (HR) $\leq 0.23$ - Unlimited (G, HR), >0.23-1.6 - 1 Meal/Week (G, HR), >1.6-6.9 - 1 Meal/Month (G, HR), >6.9 - Do Not Eat (HR), >6.9-21 - 1 Meal/3 Months (G), >21-84 - 1 Meal/Year (G), >84 - Do Not Eat (HR) $\leq 0.62$ - Unlimited (G, HR), >0.62-4.3 - 1 Meal/Week (G, HR), >19 - Do Not Eat (HR), >19-57 - 1 Meal/3 Months (G), >57-226 - 1 Meal/Year (G), >226 - Do Not Eat (HR) $\leq 0.4$ - Unlimited (G, HR), >0.4 to 2.8 - 1 Meal/Week (G, HR), >2.8-12 - 1 Meal/Month (G, HR), >12 - Do Not Eat (HR), >12-37 - 1 Meal/3 Months (G), >37-146 - 1 Meal/Year (G), >146 - Do Not Eat (HR)	Individual	<u>Methods for the development of</u> <u>fish consumption advisories in</u> <u>New Jersey</u>
New Mexico						
New York	Existing	Advisory - Fish	PFOS	<50 - 4 Meals/Month >50-200 - 1 Meal/Month >50 - Do Not Eat (Sensitive Population) >200 - Do Not Eat (General Population)	Individual	

State Fish & Wildlife Advisories								
State	Status	Туре	PFAS	Limits (ppb, unless otherwise specified)	Grouping	Notes		
North Carolina	Existing	Advisory - Fish	PFOS	1 Meal/Year (Sensitive Populations), 7 Meals/Year (General Population) - combined across American Shad, Blue Catfish, Channel Catfish Do Not Eat (Sensitive Populations), 1 Meal/Year (General Population) - Bluegill, Flathead Catfish, Largemouth Bass, Striped Bass, Redear	Individual	Applies to consumption of fillets of certain freshwater fish from the middle and lower Cape Fear River. See more information on the <u>advisory webpage</u> .		
North Dakota								
Ohio								
Oklahoma								
Oregon	Existing	Advisory - Fish	PFOS PFOA PFNA PFHxS PFBA PFBS HFPO- DA	0.002 mg/kg 0.007 0.001 0.002 0.4 0.1 0.001	Individual	Screening Level		
Pennsylvania	Existing	Advisory - Fish	PFOS	> 0.2 ppm - Do Not Eat 0.05 - 0.2 ppm - 1 Meal/Month	Individual	Based on Great Lakes Consortium for Fish Consumption Advisory Guidelines, and modified for Pennsylvania by converting µg/kg to ppm for standardized reporting and by removing the "two meal per week" frequency for PFOS concentrations 10-20 µg/kg or 0.01-0.02 ppm.		
Rhode Island								

State Fish & Wildlife Advisories									
State	Status	Туре	PFAS	Limits (ppb, unless otherwise specified)	Grouping	Notes			
South Carolina									
South Dakota									
Tennessee									
Texas	Existing	Advisory - Fish	PFOS	11.338 ng/g - 4-13 Meals/Month 23 - 2.3 Meals/Month	Individual				
Utah	Existing	Advisory - Fish	PFOS	0.00002 mg/kg/day	Individual				
	Planned	Advisory - Fish	PFOA	Limits TBD - In Progress	Individual				
Vermont									
Virginia	Planned	Advisory	PFOS	Limits TBD - In Progress	Individual				
Washington	Existing	Advisory - Fish	PFOS	<1.8 ng/g - none 1.8-2.3 - 8 meals/month 2.4-4.7 - 4 meals/month 4.8-9.4 - 2 meals/month 9.5-28.2 - 1 meal/month >28.2 - do not eat	Individual				
West Virginia	Existing	Advisory - Fish				West Virginia samples fish tissue and references the federal advisory level.			
Wisconsin	Existing	Advisory - Fish, Deer	PFOS	10-50 - 1 Meal/Week 50-200 -1 Meal/Month >200 - Do Not Eat	Individual				
Wyoming									

## G. Biosolids

State Biosolids Regulations & Advisories									
State	Status	Туре	PFAS	Limits (µg/kg, unless otherwise specified)	Grouping	Notes			
Alabama									
Alaska									
Arizona									
Arkansas									
California									
CNMI									
Colorado	Existing	Advisory	PFOS	50	Individual	Advisory / Trigger Level <u>Colorado Biosolids-PFAS</u> <u>Interim Strategy</u>			
Connecticut	Existing	Regulatory	All PFAS			Ban on use, sale, or offer for sale as a soil amendment any biosolids or wastewater sludge that contain PFAS.			
DC									
Delaware									
Florida									
Georgia									
Hawaii									
Idaho									

State Biosolids Regulations & Advisories								
State	Status	Туре	PFAS	Limits (µg/kg, unless otherwise specified)	Grouping	Notes		
Illinois								
Indiana								
lowa								
Kansas								
Kentucky								
Louisiana						Considering biosolids regulations or advisory guidelines		
Maine	Existing	Regulatory	All PFAS			Ban on land application of biosolids and biosolids- derived products		
Maryland	Existing	Advisory	PFOA, PFOS	< 20 - land application permissible with no additional requirements after submission of results ≥ 20-50 - 3 dry tons per acre or less - recommended application rate for land application of biosolids ≥ 50-100 - 1.5 dry tons per acre or less - recommended application rate for land application of biosolids ≥ 100 - land application of biosolids is not recommended	Individual & Sum			
Massachusetts								
Michigan	Existing	Regulatory	PFOS, PFOA	<ul> <li>≥ 20 ppb - land application rate limited to 1.5 dry tons per acre, effluent sample required</li> <li>≥ 100 ppb - land application prohibited, effluent sample required</li> </ul>	Individual			

State Biosolids Regulations & Advisories									
State	Status	Туре	PFAS	Limits (µg/kg, unless otherwise specified)	Grouping	Notes			
	Existing	Regulatory	PFOA, PFOS	< 20 ppb - quarterly monitoring required for Class A Exceptional Quality Solids	Sum				
Minnesota	Existing	Regulatory	PFOA, PFOS	< 19 - land application permitted ≥ 20-49 - land application with notifications ≥ 50-124 - land application with restrictions > 125 ng/L - industrially-impacted, no land application	Individual & Sum				
Mississippi									
Missouri									
Montana									
Nebraska									
Nevada									
New Hampshire	Existing	Regulatory	All PFAS Analyzed in EPA Method 1633	No Limits	Individual	Quarterly sampling and reporting required under NPDES, WWTF sludge			
New Jersey									
New Mexico	Planned		9 PFAS, their salts, & their structural isomers			In accordance with 40 CFR 261.24 under U.S. EPA's RCRA			

State Biosolids Regulations & Advisories									
State	Status	Туре	PFAS	Limits (µg/kg, unless otherwise specified)	Grouping	Notes			
New York	Existing	Advisory	PFOA, PFOS	< 20 ppb - no action required ≥ 20-50 - additional sampling required; DEC will take appropriate steps to restrict recycling after one year if the PFOS or PFOA levels are not reduced to below 20 ppb > 50 - DEC will take action to prohibit recycling until PFOS or PFOA concentration is below 20 ppb		<u>Biosolids Recycling in New</u> <u>York State - Interim</u> <u>Strategy for the Control of</u> <u>PFAS Compounds</u>			
North Carolina									
North Dakota									
Ohio									
Oklahoma									
Oregon									
Pennsylvania									
Rhode Island									
South Carolina									
South Dakota									
Tennessee									
Texas									
Utah									

State Biosolids Regulations & Advisories									
State	Status	Туре	PFAS	Limits (µg/kg, unless otherwise specified)	Grouping	Notes			
Vermont	Existing	Advisory	PFOS PFOA PFHpA PFNA PFHxS	3.4 1.6 0.84 0.44 0.38	Individual	Screening Standards			
Virginia									
Washington									
West Virginia									
Wisconsin	Existing	Advisory	PFOS, PFOA	<20 ppb – No action required >20-50 – Source investigation >50-150 – Source investigation, reduce land application to 1.5 dry tons/acre >150 – Source investigation, land application not recommended, DNR may prohibit in some cases		Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS			
Wyoming									