



Radioactive and Hazardous Materials Committee

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Environmental Working Group

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Focus Today:

- What are PFAS?
- PFAS Uses and Prevalence
- How to Reduce PFAS Threats to Health
- Federal and State Action



The Chemistry of “Forever Chemicals”

Environmental Science and Technology, August 2011

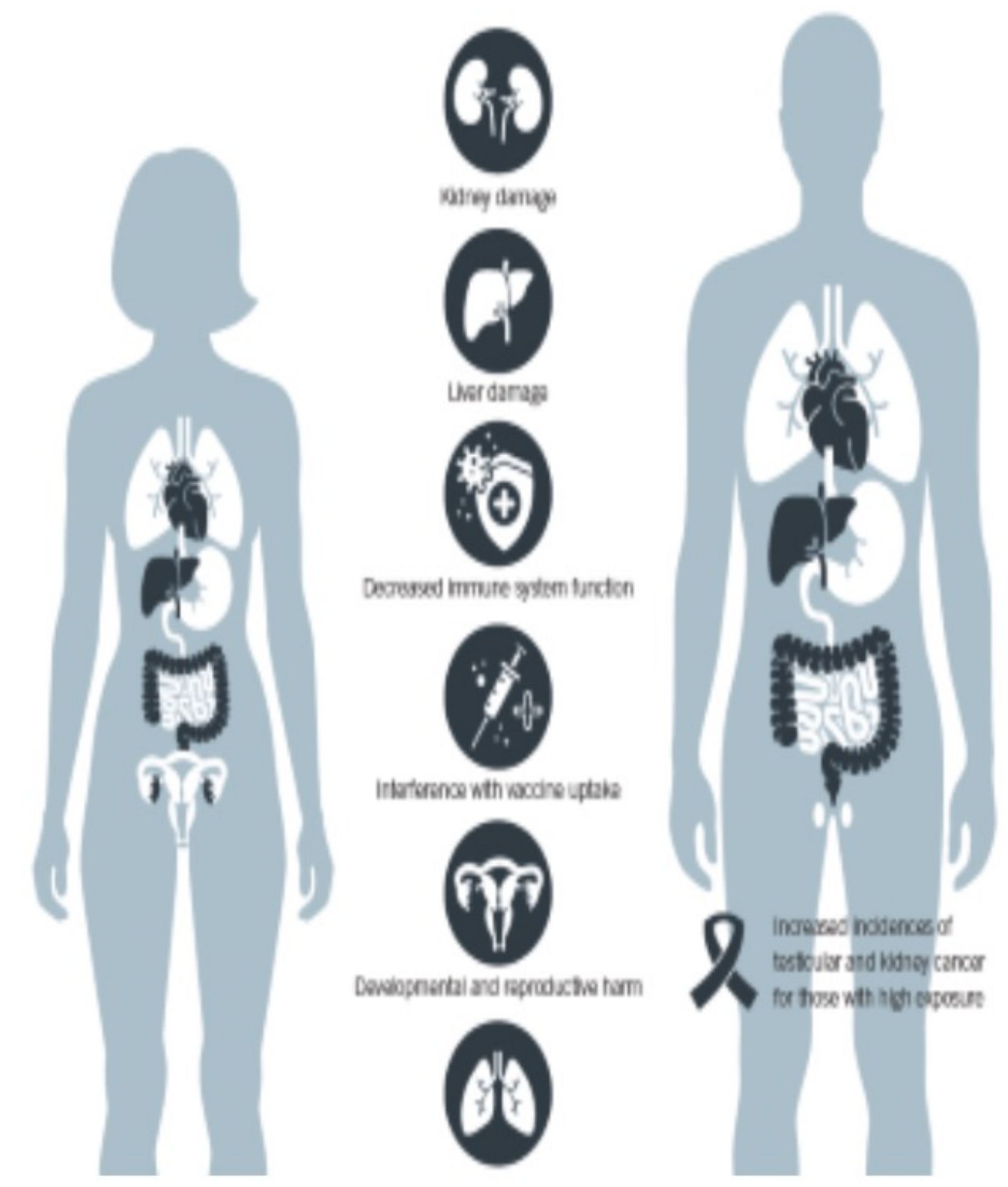
PFAS’ nickname “forever chemicals” is rooted in their manufacture, in which hydrocarbon chains of carbon and hydrogen atoms are mixed with hydrofluoric acid. The fluorine atoms in the acid replace the hydrogen atoms in the hydrocarbon chains, forming a bond between fluorine and carbon that is among the strongest in chemistry and barely exists in nature. The result: chemicals that are extremely resistant to breaking down in the environment.

PFAS Health Concerns*

- Reproductive effects such as decreased fertility or increased high blood pressure in pregnant women.
- Developmental effects in children, including low birth weight, bone variations, or behavioral changes.
- Increased risk of some cancers, including prostate, kidney, and testicular cancers.
- Reduced ability of the body's immune system to fight infections, including reduced vaccine response.
- Interference with the body's natural hormones.
- Increased cholesterol levels and/or risk of obesity.
- Toxic at extremely low levels – EPA proposed drinking water standards at level of reliable detection (4 ppt for PFOA/PFOS, lower for other PFNA, PFHxS, PFBS, HFPO-DA).

**EPA information on health effects*

Adverse health impacts associated with PFAS include:



PFAS are Widespread in the Environment

- More than 1000 of PFAS in commerce
- Used in 100's of common products, such as cookware, carpets, cleaners, paints, stain resistant textiles/fabrics
- Found in blood of nearly all Americans
- Found in drinking water of [200 million Americans](#) and 2000 communities
- Human biomonitor shows omnipresence of PFAS in humans ([EU Restriction Proposal](#))










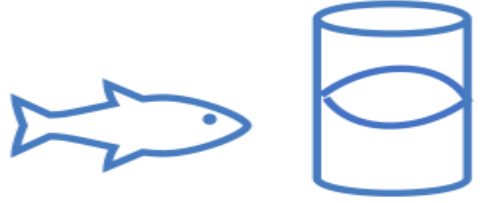
Many Routes of Exposure to PFAS

EPA Fact Sheet

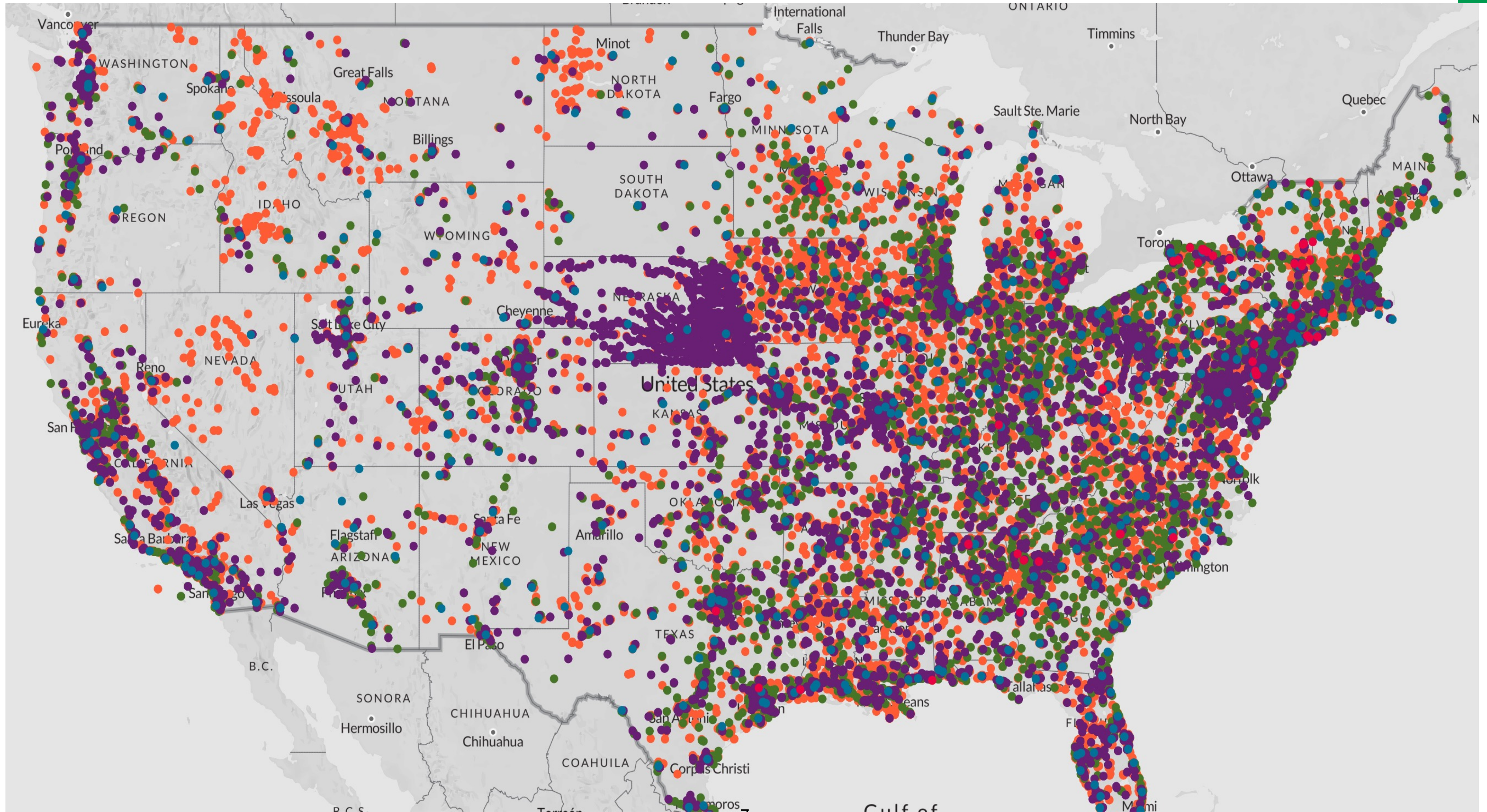


Where are PFAS found?

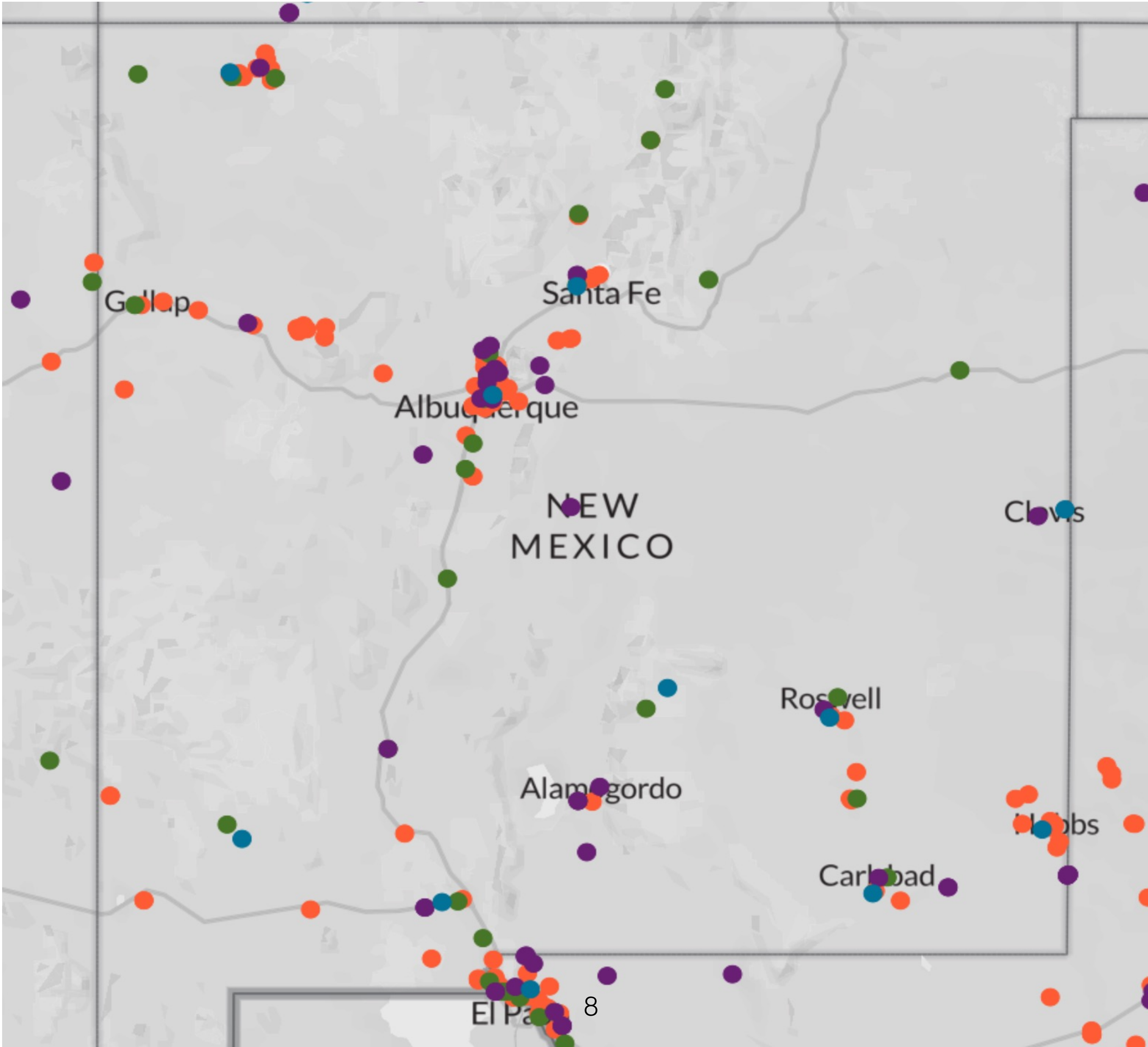
Most people in the United States have been exposed to some PFAS. People can be exposed to PFAS by touching, drinking, eating, or breathing in materials containing PFAS. PFAS may be present in:

 <p>Drinking Water An important potential source of PFAS exposure.</p>	 <p>Waste Sites Soil and water at or near landfills, disposal sites, and hazardous waste sites.</p>	 <p>Fire Extinguishing Foam Used in training and emergency response events at airports and firefighting training facilities.</p>	 <p>Facilities Chrome plating, electronics, and certain textile and paper manufacturers that produce or use PFAS.</p>
 <p>Consumer Products Stain- or water-repellent, or non-stick products, paints, sealants, and some personal care products.</p>	 <p>Food Packaging Grease-resistant paper, microwave popcorn bags, pizza boxes, and candy wrappers.</p>	 <p>Biosolids Fertilizer from wastewater treatment plants used on agricultural lands can affect ground and surface water.</p>	 <p>Food Fish caught from water contaminated by PFAS and dairy products from livestock exposed to PFAS.</p>

Known or Suspected PFAS Dischargers – EWG Map

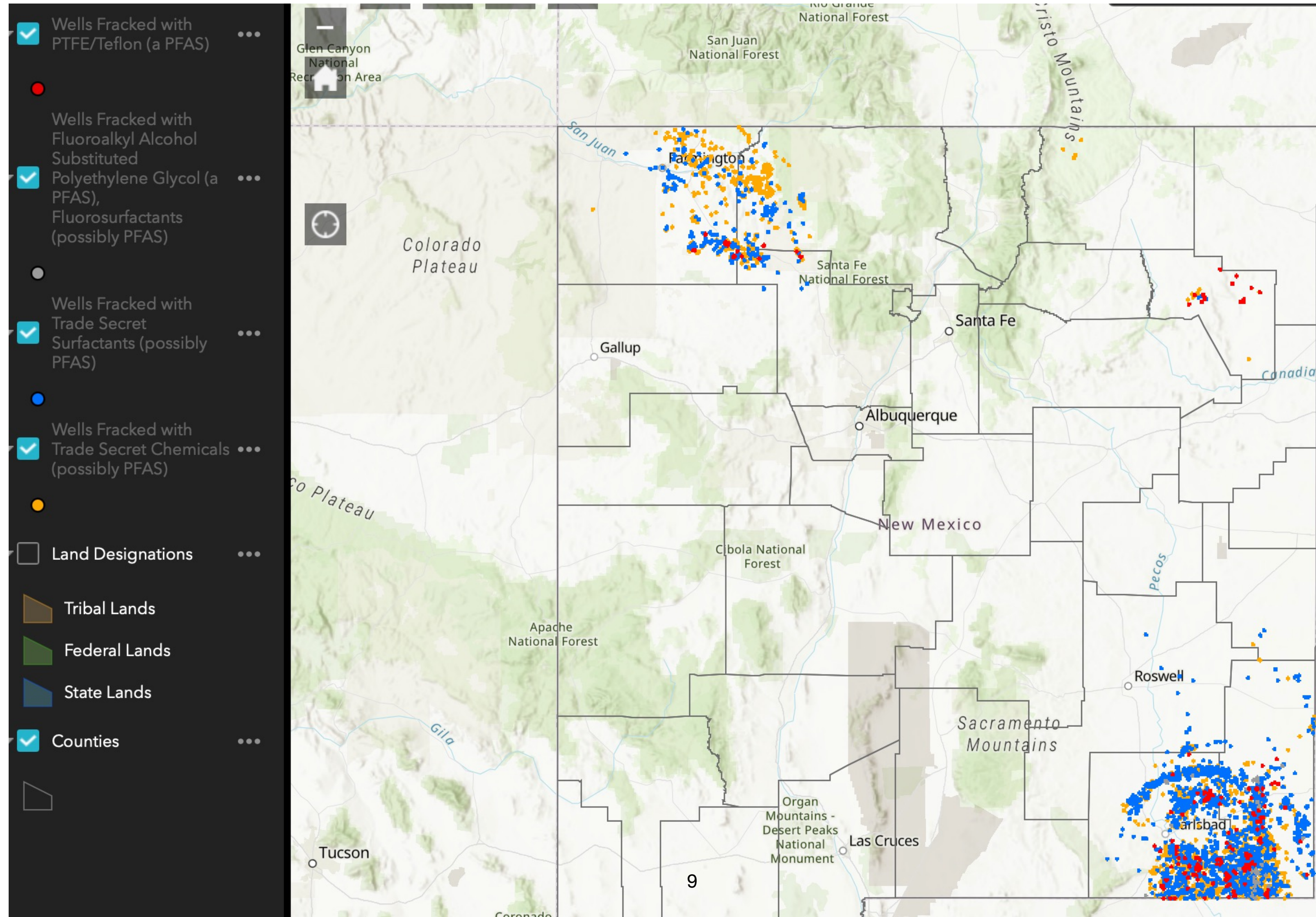


New Mexico – Known or Suspected Dischargers



Known or Possible PFAS Use in Fracking

Source: Physicians for Social Responsibility



How to Reduce PFAS Threats?

Four Underlying Strategies

- Enforceable Drinking Water Standards
- Cleanup Contaminated Sites (e.g., DOD facilities)
- Get PFAS Out of Common Consumer Products
- Control Discharges into Water and Air
- Find Alternatives/Restrict Unnecessary Uses





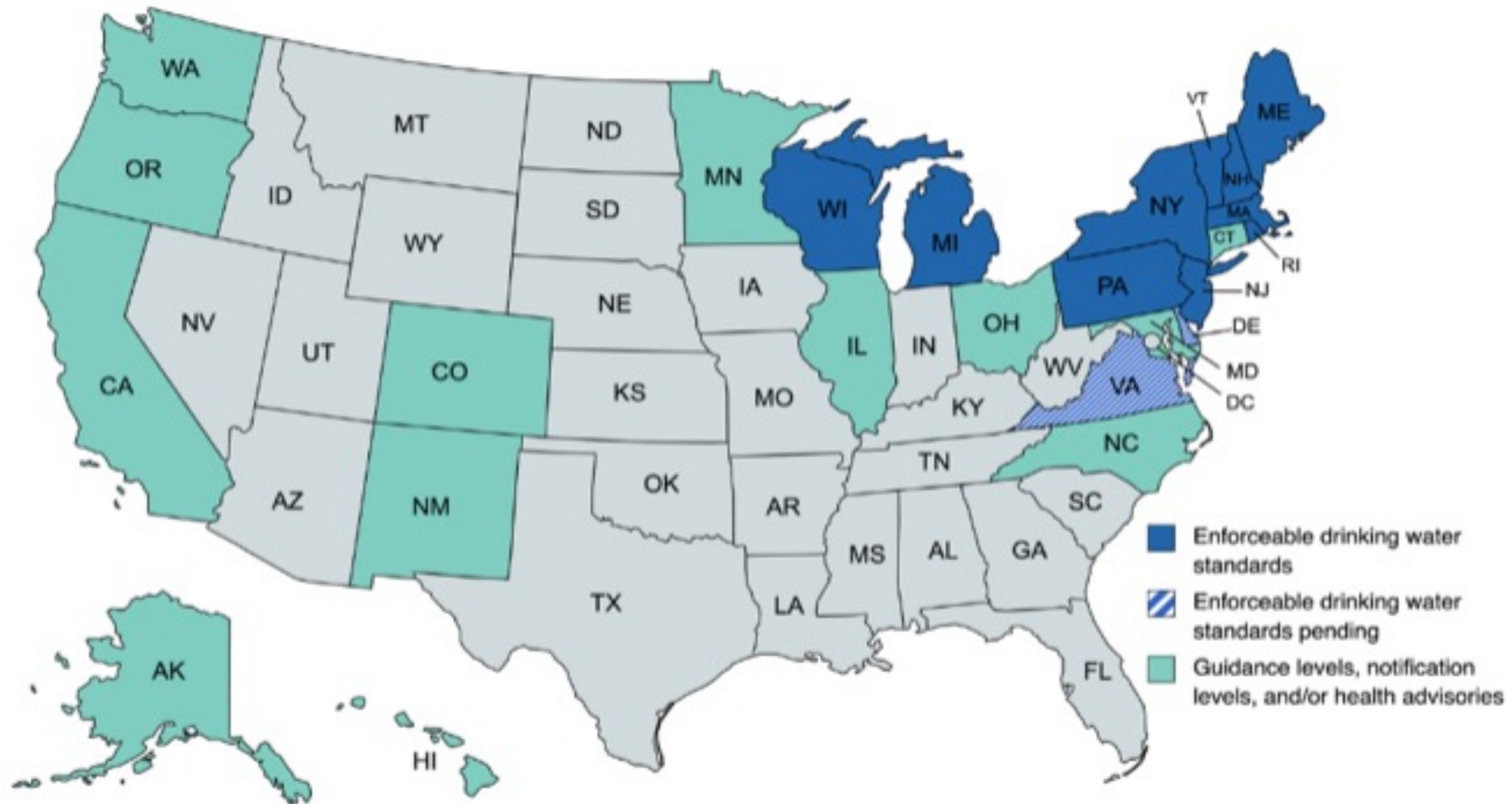
Federal Actions Underway

Government-wide Plan -- Oct 2021

- Establish Drinking Water Standards (or “MCLs” under the Safe Drinking Water Act)
- Control Industrial Discharges (Clean Water Act)
- Designate PFAS as Hazardous Waste (Superfund liability/cleanups)
- Review/Restrict PFAS Uses (Toxic Substances Control Act)
- Reduce Government Purchases of PFAS Products
- Research sources, prevalence, alternatives (AFFF) health effects, water treatment

State Action to Safeguard Drinking Water

Source: Safer States



State Action to Restrict PFAS Purchasing

Source: Safer States

EXAMPLES

Michigan

- Suppliers must disclose PFAS
- Agencies give preference to PFAS-free

Connecticut

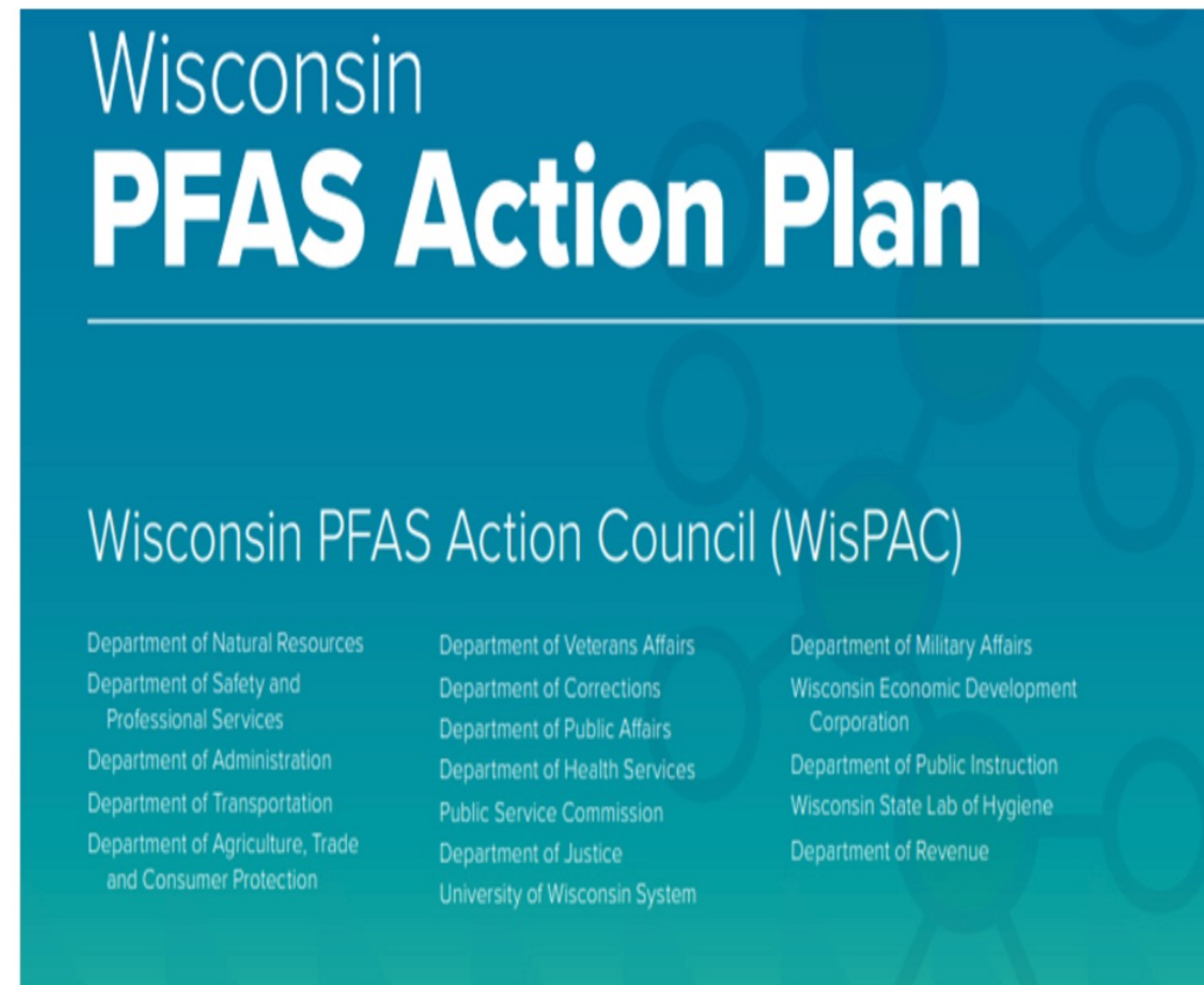
- PFAS Firefighting Foam restricted
- Food packaging – Intentionally-added PFAS products cannot be offered for sale

Minnesota

- Compostable products - food, beverage and storage containers
- Bidders shall provide affidavits guaranteeing that perfluorinated compounds were not used or added

Other State Action

- See “Safer States” Compilation



The graphic features a teal background with a faint circular pattern. At the top, the word "Wisconsin" is written in white, followed by "PFAS Action Plan" in a larger, bold white font. Below this, the text "Wisconsin PFAS Action Council (WisPAC)" is displayed in white. At the bottom, a list of Wisconsin state departments and agencies is arranged in three columns, all in white text.

Wisconsin
PFAS Action Plan

Wisconsin PFAS Action Council (WisPAC)

Department of Natural Resources	Department of Veterans Affairs	Department of Military Affairs
Department of Safety and Professional Services	Department of Corrections	Wisconsin Economic Development Corporation
Department of Administration	Department of Public Affairs	Department of Public Instruction
Department of Transportation	Department of Health Services	Wisconsin State Lab of Hygiene
Department of Agriculture, Trade and Consumer Protection	Public Service Commission	Department of Revenue
	Department of Justice	
	University of Wisconsin System	

Oil and Gas -- Colorado

Colorado also is phasing out PFAS in a range of consumer products

Governor Polis Signs Bills to Require Disclosure of Chemical Additives in Oil & Gas Operations & Reduce the Use of PFAS Chemicals

July 12, 2022

Last month, Governor Jared Polis signed two bills into law in response to growing public concern in Colorado and elsewhere regarding chemicals used in oil and gas

State Action

Common Approaches

#States

- PFAS Firefighting Foam Ban 11
- Food Packaging and Containers 12
- Drinking Water Standards 10
- Government Procurement
(often Executive Orders) ~5
- Clean Water Act Permits unknown



Thank you

Know your environment. Protect your health.

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