

The Multifaceted Municipal PFAS Challenge: Understanding Permitting, Regulatory and Enforcement issues for Public Water & Wastewater Utility Counsel

2023 IMLA Annual Conference

STEVEN A. TORRES, ESQ.

WEST GROUP LAW PLLC

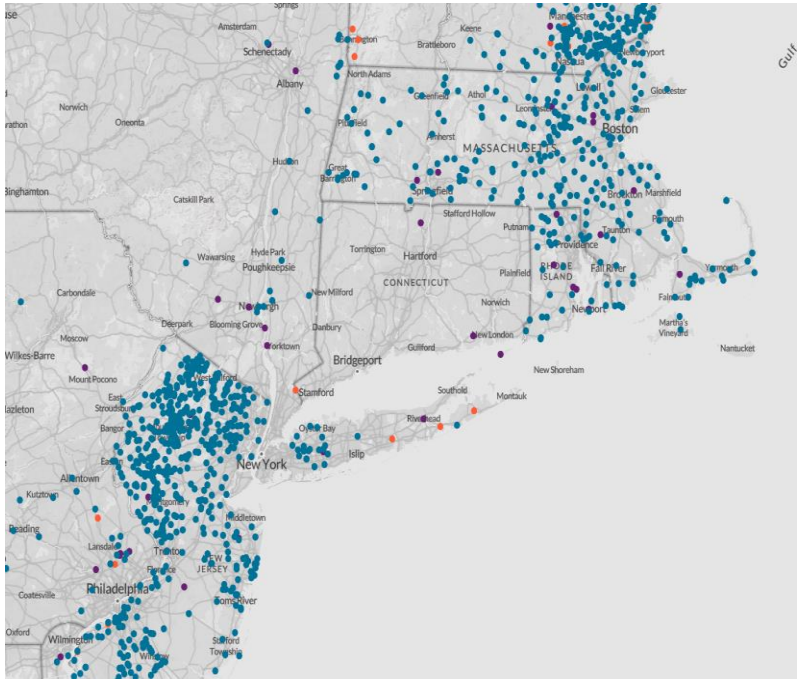
HAIZHOU LIU, PH.D., P.E.

UC RIVERSIDE

Per- and Polyfluoroalkyl Substances

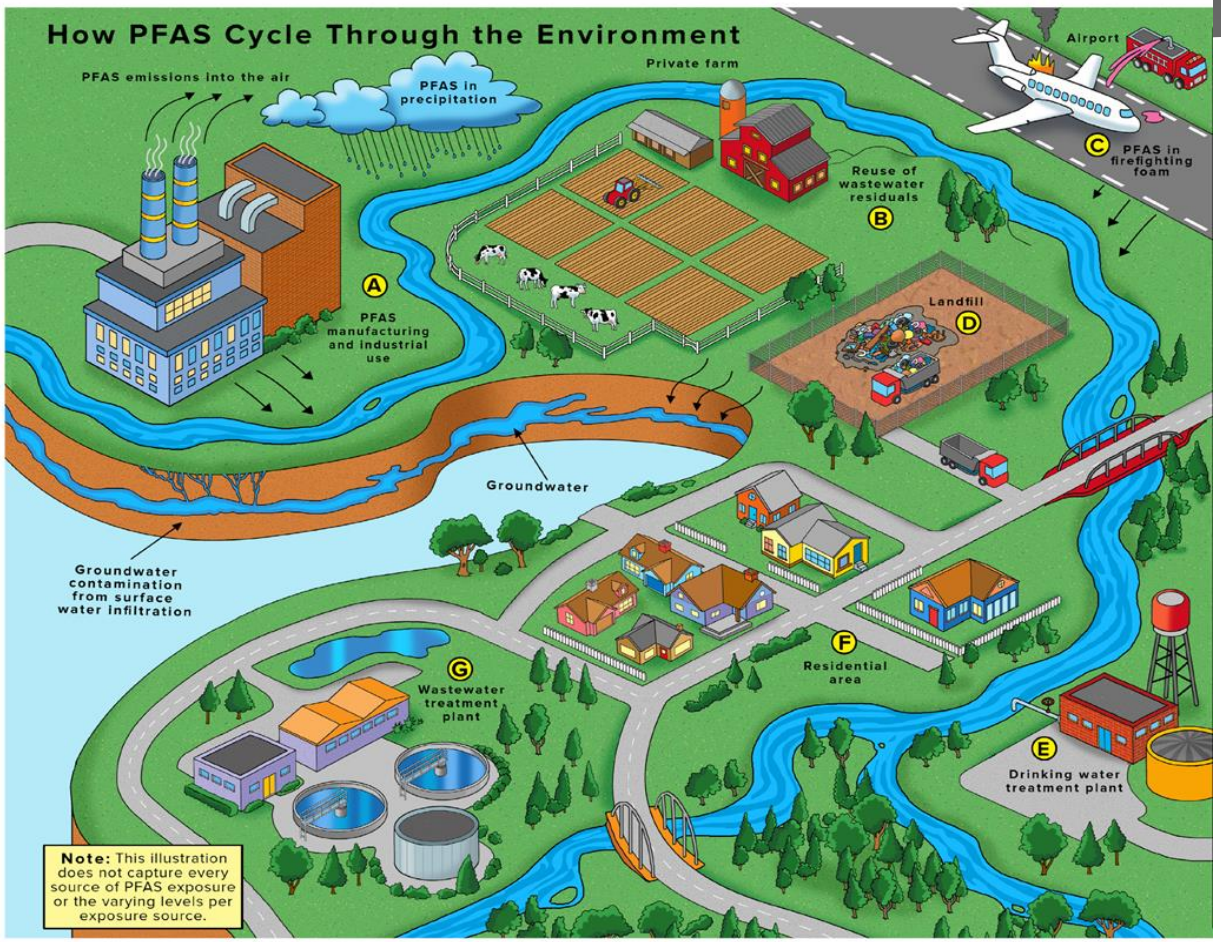
Per- and Polyfluoroalkyl Substances (PFAS)

- PFAS are widely used, long lasting chemicals, whose components break down very slowly over time.
- They are persistent in the environment and found in the blood of people, animals, food products, air, water, wastewater, and soil.
- They are resistant to heat, water, and oil.
- There are thousands of PFAS chemicals, and they are found in many different consumer, commercial, and industrial products. This makes it challenging to study and assess the potential human health and environmental risks.



WEST GROUP LAW PLLC

PFAS occurrence in the environment



Drinking water and wastewater treatment plants

Manufacturing/industrial use

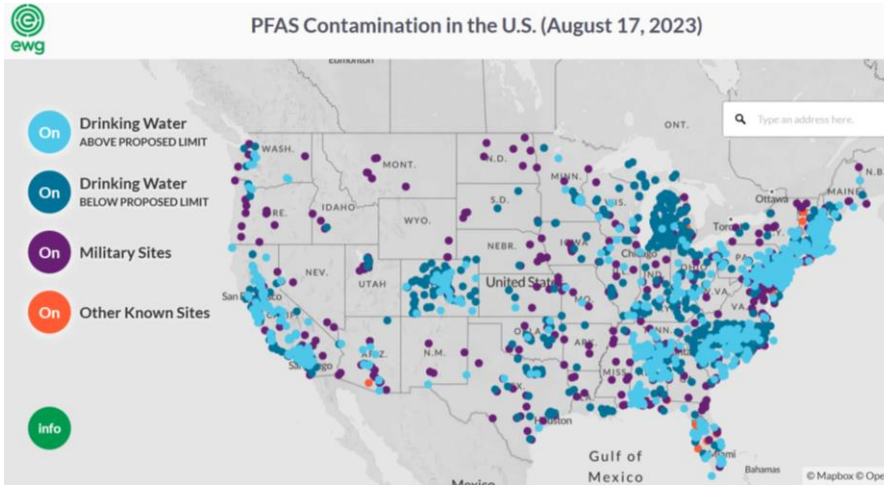
Airport and military sites

Landfill

American Water Works Association

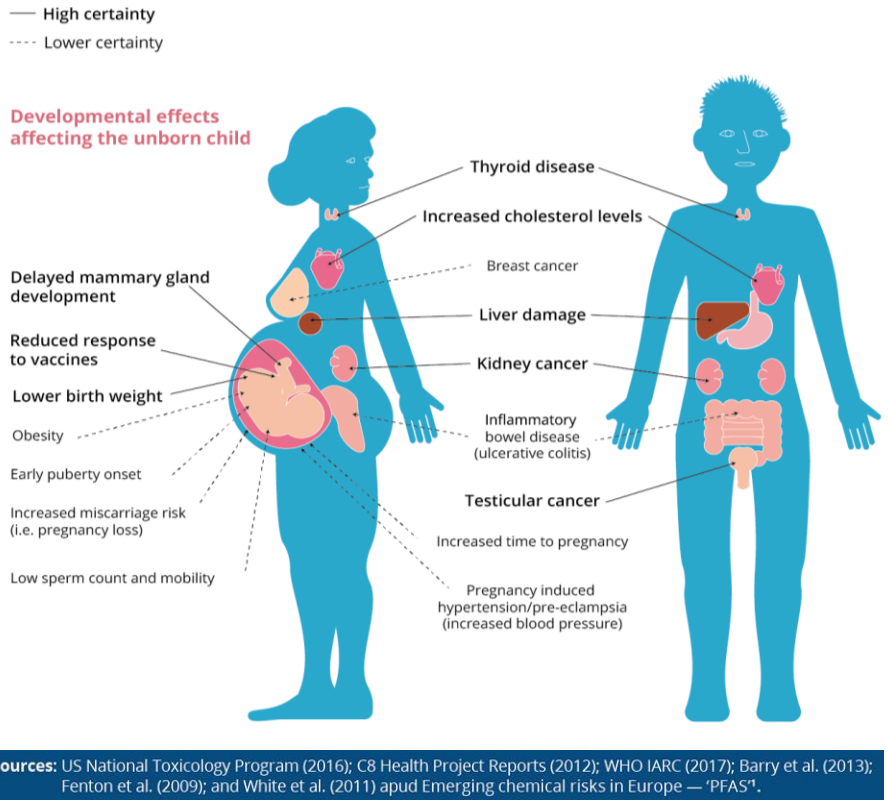
https://www.awwa.org/Portals/0/AWWA/ETS/Resources/15683PFAS_web.pdf

PFAS Toxicity



PFAS contamination in **>3,000** sites in all 50 States

https://www.ewg.org/interactive-maps/pfas_contamination/map/)



WEST GROUP LAW PLLC

UC RIVERSIDE

Health risks associated with PFAS

- Long term exposure to PFAS can lead to increased risk of certain health effects such as:
  - Increased risk of certain cancers
  - Developmental delays in children
  - Low birth weight
  - Increased cholesterol
  - Liver damage
  - etc.

PFAS in Drinking Water

- Drinking water supplies globally are contaminated with chemicals with known health risks, such as heavy metals and PFAS
- PFAS = Family of nearly **10,000** man-made **per- and poly-fluorinated chemicals** widely used in manufacturing since WWII (e.g., Teflon, GoreTex) which do not degrade in nature: “forever chemicals.”
- The main source of PFAS is drinking water. All of us now have measurable amounts of PFAS in our blood, and PFAS is linked to immune dysfunction, cancer, liver function, low birth weight
- Health-related costs are estimated annually at **$90-140 billion in the US and Europe** - not paid by polluters; burden to society



Emerging PFAS Removal Technologies

Competitive Matrix	Physical Separation (GAC; IX)
Destruct PFAS	
Operational temperature	Normal
Operational pressure	High
Operational complexity	Complex
PFAS Byproducts	Yes
Reaction time	1-10 mins
Energy consumption	Medium
Flexibility with capacity	
Capital and maintenance cost	$ $

WEST GROUP LAW PLLC

UC RIVERSIDE

United States Environmental Protection Agency

Water and Wastewater Updates

- Water
  - June 2022, EPA issued updated drinking water health advisories for PFOA and PFOS and final health advisories for PFBS and GenX chemicals.
  - Interim Health Advisory levels: 0.0004 ng/L for PFOA; 0.02 ng/L for PFOS
  - Final Health Advisory levels: 10 ng/L for GenX chemicals; 2,000 ng/L for PFBS
  - EPA invited states and territories to apply for $1 billion in Bipartisan Infrastructure Law grant funding to address PFAs and other emerging contaminants in drinking water

United States Environmental Protection Agency – Drinking Water

In March 2023, the US EPA announced a proposed National Primary Drinking Water Regulation.

- This regulation proposes legally enforceable Maximum Contaminant Levels (MCLs) for the following PFAS:
  - PFOA ; PFOS; PFNA; Gen-X Chemicals; PFHxS; PFBS.
- It also proposes non-enforceable Maximum Contaminant Level Goals (MCLGs) for the same six PFAS.
- The EPA also proposes monitoring requirements and public notification if a public water system detects PFAS levels that exceed the required standards
- Lastly, the regulation would require public water systems to reduce PFAS levels in drinking water if the drinking water exceeds required standards.

Compound	Proposed MCGL (non-enforceable	Proposed MCL (enforceable)
PFOA	Zero	4.0 parts per trillion (ppt)
PFOS	Zero	4.0 ppt
PFNA	1.0 (unitless) Hazard Index	1.0 (unitless) Hazard Index
PFHxS		
PFBS		
HFPO-DA		

Per- and Polyfluoroalkyl Substances (PFAs)

The EPA has taken the following actions:

1. Unregulated Contaminant Monitoring Rule, which will require sample collection for 29 PFAS between 2023 and 2025.
2. Evaluating the existing data for four PFAS under the Resource Conservation and Recovery Act (RCRA) and strengthening the ability to clean up PFAS contamination across the country through the RCRA corrective action process.
3. Agency is developing a national PFAS testing strategy that intends to use its Toxic Substances Control Act (TSCA) authorities to require PFAS manufacturers to provide information on PFAS.
4. Announced a proposed drinking water regulation under the Safe Drinking Water Act.

Upcoming EPA action on PFAS

The EPA is expecting to:

- Finalize new PFAS reporting under the Toxic Substance Control Act.
  - EPA will consider public comments and finalize a proposal before January 1, 2023
- Finalize the proposed National Primary Drinking Water Regulation A finalized regulation is expected by the end of 2023.
- Restrict PFAS through Effluent Limitation Guidelines
  - In January 2023, EPA released its final Effluent Limitations Guidelines Plan 15. This plan includes the EPA's determination that Effluent Limitations Guidelines and pretreatment standards are needed for reducing PFAS in leachate discharges from landfills. The plan further includes an expansion of the study of PFAS discharges from textile manufacturers and a new study of POTW influents to publicly owned treatment works.
- Finalize a risk assessment for PFOA and PFOS in biosolids
  - Expected in 2024

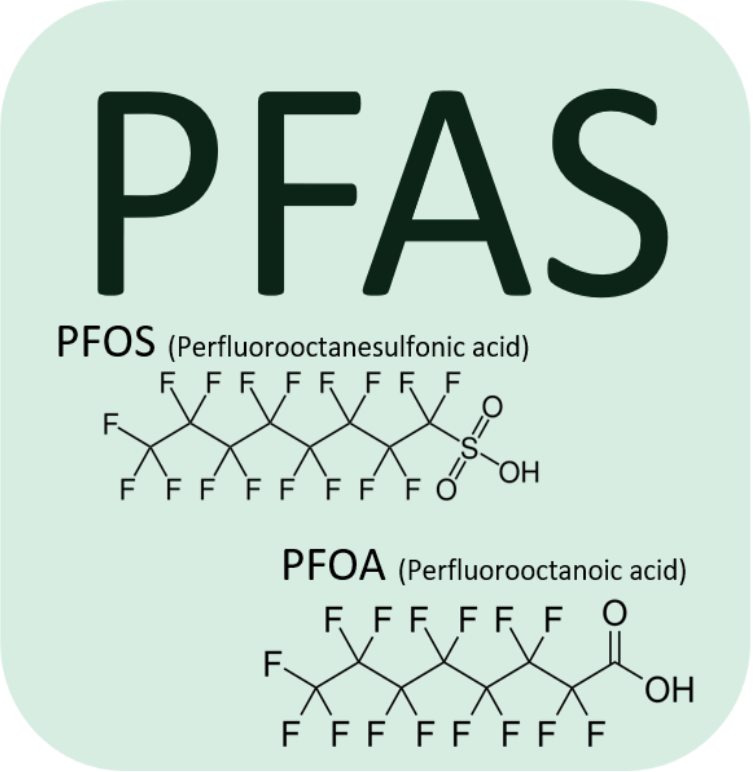
United States Environmental Protection Agency - Wastewater

Wastewater Updates

- Wastewater
  - December 2022, EPA recommended that states and municipalities use the most current sampling and analysis methods in their NPDES programs to identify known or suspected sources of PFAs
  - Monitor each of the 40 PFAs by draft method 1633 and conduct testing at least quarterly
  - All PFAs monitoring data must be reported on discharge monitoring reports pursuant to 40 CFR 122.41(1)(4)(i).

Municipalities Addressing PFAS

- PFAS has become an ever growing concern for Municipalities, and efforts are being made to address PFAS arriving at wastewater treatment plants and persisting in drinking water
- Many municipalities are testing drinking water, waste water effluent, and biosolids for PFAS
- The funds available through State Revolving funds will assist municipalities in tackling PFAS contamination



Per- and Polyfluoroalkyl Substances (PFAs)

In 2016, New York became the first state in the nation to regulate perfluorooctanoic acid ("PFOA") and perfluorooctane sulfonic acid ("PFOS") as a hazardous substances. As a result, a $2.5 billion Clean Water Infrastructure Act of 2017. The Act will provide direct support to help communities to upgrade aging drinking water and wastewater infrastructure and protect drinking water sources.

<u>The Infrastructure Act provided funds to address PFAS:</u>

- $33 million of the funds granted to New York would be used to address emerging contaminants in Nassau and Suffolk County.
- $115 million in grants and financing from the DWSRF and CWSRF were approved to fund water infrastructure projects throughout the state.
- Municipalities throughout New York and around the county are set to benefit as they look to upgrade their water infrastructure.

What the states are doing – Waste water

- Massachusetts
  - In Massachusetts, as NPDES permits are renewed PFAS testing requirements are being added to the permits and the data is uploaded to a public portal.
  - Massachusetts Department of Environmental Protection also has several ongoing projects, including, the PFAS Pollution Prevention Project and an ongoing study of PFAS in wastewater, in collaboration with the US Geological Survey, 2022 to present. Massachusetts
- Washington
  - In 2022 WA completed a study of PFAS levels going into and coming out of three wastewater treatment plants in an effort to understand PFAS presence in wastewater discharges.

What the states are doing – Wastewater

- New York State Senate
  - Assembly Bill A3296A "PFAS discharge disclosure act"
    - This act, which is presently in the Committee Assembly, seeks to add a new section to the environmental conservation law.
    - This new legislation would require most SPEDES permit holders to monitor discharge from each outfall for PFAS quarterly for one year and then submit the results of the monitoring quarterly.
    - Further, new permit applications must contain a statement indicating whether the applicant knows or has reason to believe PFAS are discharged from the outfalls.
    - If PFAS are detected in any amount, permit holders must continue to monitor for PFAS on a quarterly basis for the duration of the permit, including the period after the expiration of the permit when discharge is still authorized. They then must submit results of monitoring quarterly.

What the states are doing – Drinking Water

Massachusetts Department of Environmental Protection

- MassDEP regulates drinking water under the federal Safe Drinking Water Act
- MassDEP has established the maximum contaminant level (MCL) for PFAs that is safe for daily exposure, for a lifetime
  - 20 parts per trillion (ppt) for the sum of 6 PFAs in drinking water, including PFHxS, PFHpA, PFOA, PFOS, PFNA, PFDA

Rhode Island Department of Health

- Rhode Island PFAS Law, passed in June 2022, and amended in 2023, set an interim standard for PFAs in drinking water at 20 ppt.
- This law requires public water systems in Rhode Island to sample for PFAs by July 1, 2023. If sample results show PFAS levels that exceed 20ppt, the water system must continue monitoring every 3 months; if results show PFAS levels at or below 20ppt, the water system must continue to monitor yearly, and if there are no PFAS detected, monitoring will continue every two years.
- Further, water systems with PFAS levels that exceed 20ppt must enter into consent agreements with the Rhode Island Department of Health and notify the public.

What the states are doing – Drinking Water

New York State Department of Health

- New York Department of Health proposed new drinking water standards for four PFAs: PFDA, PFHpA, PFHxS and PFNA
- Proposed regulations published in the New York State Register in October 2022
  - Proposed MCLs for each are 10 ppt
  - Proposed combined MCL of 30 ppt for all six PFAs
- Existing MCLs for PFOA and PFOS are 10 ppt
- In March 2023, the NYDEC announced final water quality guidance values for PFOA, PFOS, and 1,4-Dioxane. (See table on the following slide).

What the states are doing – Drinking Water

DOH adopted MCLS and NYDEC finalized guidance values

Chemical	DOH - Finished Drinking Water	DEC - Raw Water Source		
	Adopted MCLs	Human Health	Aquatic Life	
			Chronic	Acute
PFOA	10 ppt	6.7 ppt	N/A	N/A
PFOS	10 ppt	2.7 ppt	160 ppb (fresh) 41 ppb (saline)	710 ppb (fresh) 190 ppb (saline)
1,4-Dioxane	1 ppb	0.35 ppb	18,000 ppb (fresh) 7,000 ppb (saline)	160,000 ppb (fresh) 63,000 ppb (saline)

https://www.dec.ny.gov/chemical/127939.html

What the states are doing – Drinking Water

Washington State Department of Health

- In March 2022 WA revised the Group A drinking water rules to require water systems to monitor for PFAS from January 2023 through December 2025.
- Additionally, the rule established State Action Levels (SALs) for PFOA, PFOS, PFNA, PFHxS, and PFBS. SALS are the maximum level in tap water that is acceptable for long-term daily consumption. If a water system sample exceeds the SAL, they must collect a confirmation sample. If the average of the initial sample and the confirmation is greater than the SAL or if it does not collect a confirmation sample, then it must issue a notice to customers that the sample exceeded the SAL.
  - PFOA, SAL is 10ppt PFOS, SAL is 15ppt
  - PFNA, SAL is 9ppt PFHxS, SAL is 65ppt
  - PFBS, SAL is 345ppt

What the states are doing – Drinking Water

New Jersey Department of Environmental Protection

- New Jersey has established MCLs:
  - 13 ng/L for PFNA and PFOS
  - 14 ng/L for PFOA

California

- As of March 2023, CA has not established MCLs for PFAS

Recent New York Department of Environmental Conservation (NYSDEC) action on PFAS

- NYSDEC recently issued a notice of proposed rulemaking to, in part, amend the soil cleanup objectives in the Environmental Remediation Program regulations (6 NYCRR Part 375)
- The proposed regulations would add PFOA and PFOS to the chemicals covered under the soil cleanup objectives
- As of December 2022, NY no longer allows the use of PFAS as an "intentionally added ingredient in food packaging."
- Prohibitions on PFAS intentionally added to apparel will go into effect in January 2025 (no person shall sell new apparel containing intentionally added PFAS after 1/1/25) and January 2028 (no person shall sell any new outdoor apparel for severe wet conditions containing PFAS that exceed a certain level (to be developed) or that were intentionally added).

PFAS in Biosolids

- PFAS is not generated at wastewater recovery facilities, but will enter these facilities from other sources. Most municipal wastewater treatment plants have measurable levels of PFAS in their discharge. Once PFAS enters the wastewater facility, it can be difficult to breakdown. Sludge treatment processes such as digestion, thermal drying and composting may not reduce PFAS in sludge.
- Municipalities are experimenting with biosolid treatment technologies that remove PFAS including source reduction, incineration, gasification, and water oxidation.
  - For example, the Portland Water District in ME and the NH Department of Environmental Services have considered destroying PFAS and utilizing the charred sludge for other uses. Further the Portland Water District is seeking to develop a facility that may be able to use technology like pyrolysis and gasification to reduce or eliminate PFAS from biosolids.

United States Environmental Protection Agency - PFAS in Biosolids

- Under the Resource Conservation and Recover Act (RCRA), PFAS is currently undergoing a risk analysis.
  - EPA will complete a risk assessment for PFOA and PFOS in biosolids by December 2024.
- Additionally, in July 2023 EPA issued the "Joint Principles for Preventing and Managing PFAS in Biosolids" which was developed by the EPA's Office of Water, the Environmental Council of the States, and the National Association of State Departments of Agriculture.
  - These principles are: protect communities; reduce the discharge of PFAS to prevent the contamination of biosolids; aim to preserve flexibility and availability of options for the use and disposal of biosolids, while prioritizing public health protection; ensure continued safety of the food supply and support impacted farmers and ranchers; educate stakeholders and communicate risk; build capacity; embrace transparency and innovation.

PFAS in Biosolids – What the states are doing

- Maine
  - In April 2022, due to a growing concern about extremely high levels PFAS in in water, crops, soil, and cattle on farms, Maine enacted legislation which banned land application or distribution of biosolids/sludge as fertilizer's. The legislation also bans the sale of compost or other agriculture products that contain PFAS.
  - Due to this legislation, ME is facing the issue of disposal of biosolids/sludge which can no longer be utilized via land application.
  - One in state landfill is accepting sludge, but in order to stabilize it must mix it with bulking material at a 5-1 ratio. Sludge is also sent out of state. destroying PFAS and utilizing the charred sludge for other uses. Further the Portland Water District is seeking to develop a facility that may be able to use technology like pyrolysis and gasification to reduce or eliminate PFAS from biosolids.

PFAS in Biosolids – What the states are doing

- Michigan
  - All wastewater treatment plants must sample biosolids for PFAS before being used for land application. Additionally, biosolids are considered industrially impacted and cannot be applied to land if it contains a PFOS concentration of 125 µg/kg or more.
  - If tested biosolids contain 125 µg/kg or more PFOS, the EGLE must be immediately notified and a sample of effluent and investigation into potential sources must be conducted.
  - If tested biosolids contain 50 µg/kg but less than 125 µg/kg PFOS, the EGLE must be immediately notified and a sample of effluent and investigation into potential sources must be conducted. Further, land application rates must be reduced to no more than 1.5 dry tons per acre.
  - If tested biosolids contain more than 20 µg/kg but less than 50 µg/kg PFOS, sampling of effluent and investigation into sources is recommended. Further, testing will be required each year prior to land application.

PFAS in Biosolids – What the states are doing

- Alabama
  - As of May 2022, in Alabama no testing is done on sludge/biosolids to identify levels of PFAS. Alabama currently seeks to increase the amount of sludge used in land application and is encouraging the use of biosolids as fertilizer. In 2019 the Alabama Department of Environmental Management stated that sending biosolids to landfills rather than utilizing them in land application as fertilizer was essentially wasteful.
  - In February 2023, the US EPA dedicated $52.6 million dollars to help address contaminants in drinking water in Alabama, including adding filters to remove chemicals in drinking water as well as to allow for testing for PFAS.

Infrastructure Investment & Jobs Act

Safe Drinking Water

- $11.7 billion will be allocated to address drinking water through the Safe Drinking Water State Revolving Fund
- $15 billion to replace lead service lines
- $4 billion to address emerging contaminants, such as PFAS, in drinking water
- Funds are available to communities as grants, principal forgiveness loans, and low-interest loans

Clean Water

- 11.7 billion will be allocated for clean water projects through the Clean Water State Revolving Fund
- Funds are available to communities as grants, principal forgiveness loans, and low-interest loans
- Grant funds may be used for construction of wastewater facilities, creation of green infrastructure, such as waste-to-energy technologies, and control of nonpoint source pollution

Any Questions?



Contact Information

Steven A. Torres, Esq.

storres@westgrouplaw.com

914-898-2400



WEST GROUP LAW PLLC

www.westgrouplaw.com

Haizhou Liu, Ph.D., P.E.

haizhou@engr.ucr.edu

951-827-2076



UC RIVERSIDE

www.liulab.engr.ucr.edu