



PFAS, IS IT EVEN STILL A REGULATORY CONCERN?

MARCH 5, 2026

Trinity River Authority of Texas
Enriching the Trinity basin as a resource for Texans



The Highlights

Highlights

- PFAS has been around since the 1940's
- Bad Boys of PFAS
 - PFOA and PFOS
- Are there other PFAS compounds of concern?
 - Depends on who is asking
 - Where you are looking at
 - What you are looking in



Highlights

Concentration Expressions	Abbreviations	Equivalents
Part Per Million	ppm	mg/L or mg/kg or $\mu\text{g/g}$
Parts Per Billion	ppb	$\mu\text{g/L}$ or $\mu\text{g/kg}$ or ng/g
Parts Per Trillion	ppt	ng/L or ng/kg or pg/g

- How do we measure it?
 - With great difficulty
 - Drinking Water is only “approved” method
 - Wastewater/Solids Method is final but not “approved”



The Cart Before the Horse Moment...

Thoughts? Opinions?





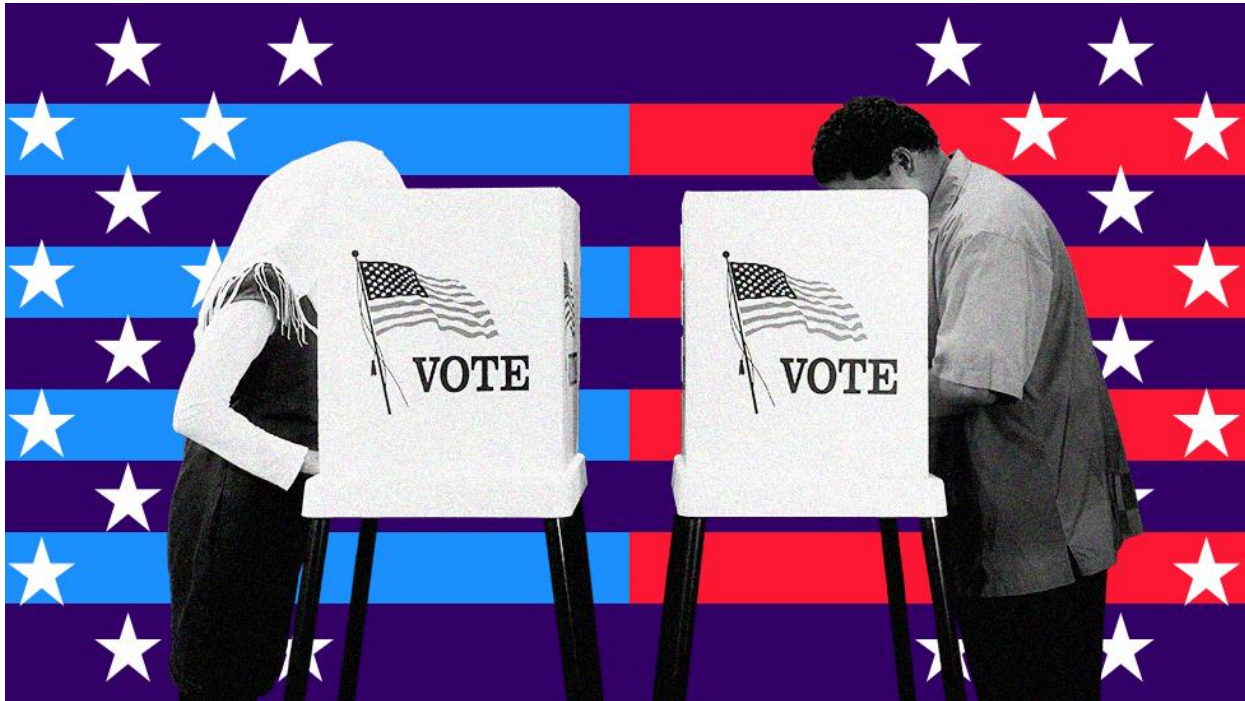
**With Big Brother...
Timing is Everything**

May 2012

- UCMR 3 published
 - 6 PFAS Compounds
 - Monitoring period 2013-2015

UCMR 3 Contaminant List			
Assessment Monitoring (List 1 Contaminants)			
1,2,3-trichloropropane	bromomethane (methyl bromide)	chloromethane (methyl chloride)	bromochloromethane (Halon 1011)
chlorodifluoromethane (HCFC-22)	1,3-butadiene	1,1-dichloroethane	1,4-dioxane
vanadium	molybdenum	cobalt	strontium
chromium ¹	chromium-6 ²	chlorate	perfluorooctanesulfonic acid (PFOS)
perfluorooctanoic acid (PFOA)	perfluorobutanesulfonic acid (PFBS)	perfluorohexanesulfonic acid (PFHxS)	perfluoroheptanoic acid (PFHpA)
perfluorononanoic acid (PFNA)			
Screening Survey (List 2 Contaminants)			
17-β-estradiol	estriol	estrone	4-androstene-3,17-dione
17-α-ethynylestradiol	equilin	testosterone	
Pre-Screen Testing ³ (List 3 Contaminants)			
enteroviruses		noroviruses	

2020-2021



- Presidential Election

October 2021

- Outlined the EPA strategy for addressing PFAS
- Indicated specific action items
- Identified tentative timelines



PFAS Strategic Roadmap: EPA's Commitments to Action 2021–2024



December 2021

- UCMR 5 published
 - 29 PFAS Compounds
 - Monitoring period 2023-2025

EPA Contaminant Categorization	EPA Method
25 Per- and Polyfluoroalkyl Substances (PFAS) - shorter chain	EPA Method 533
4 Per- and Polyfluoroalkyl Substances (PFAS) - longer chain	EPA Method 537.1
One Metal- Lithium	EPA Method 200.7 or Alternate SM 3120 B or ASTM D1976-20

January 2023

- Effluent Guidelines Program Plan 15
 - Pretreatment standards evaluated due to PFAS concerns
 - CAFO (40 CFR 412) – TBD
 - Leather Tanning (40 CFR 425) – No Change
 - Paint Formulating (40 CFR 446) – No Change
 - Plastics Molding (40 CFR 463) – No Change
 - Electrical & Electronic (40 CFR 469) – TBD

January 2023

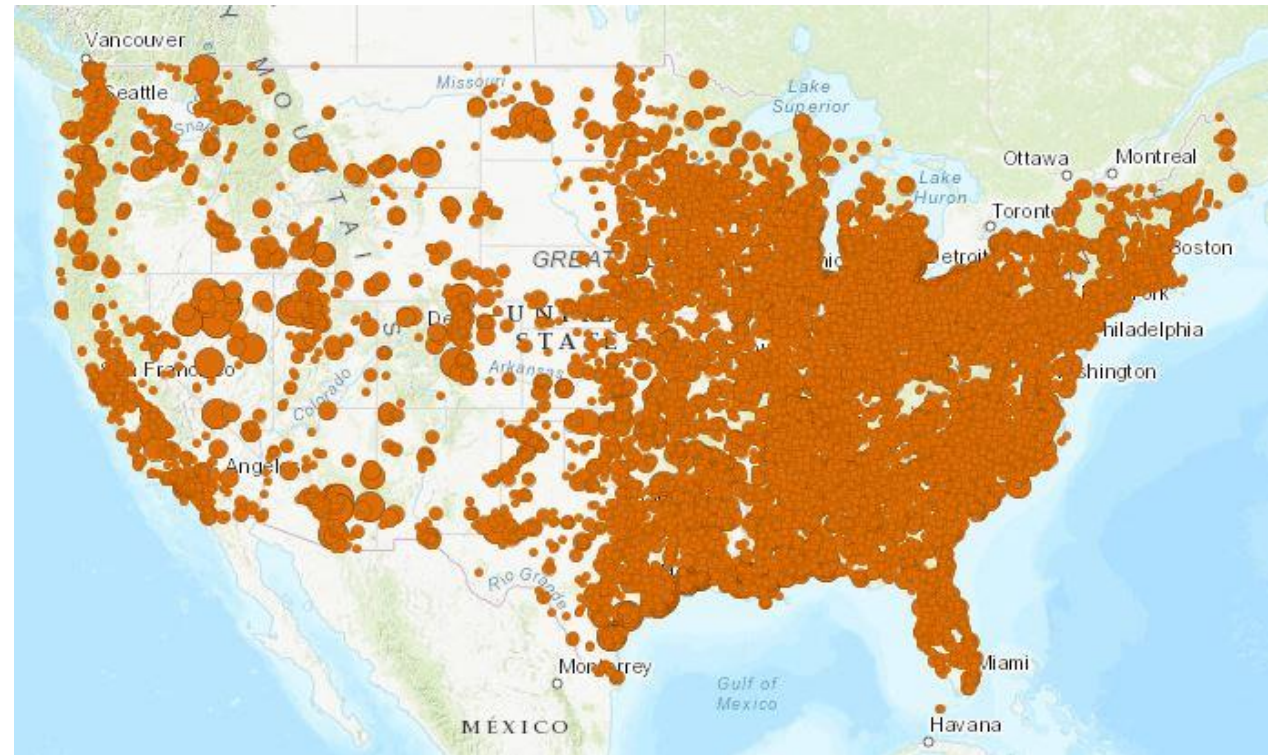
- Effluent Guidelines Program Plan 15
 - Planned to initiate rule making for:
 - OCPSF (40 CFR 414)
 - Metal Finishing (40 CFR 433)
 - Electroplating (40 CFR 413)
 - Planned to initiate detailed studies for:
 - Textile Mills (40 CFR 410)
 - Landfill (40 CFR 445)

March 2023

- Proposed National Primary Drinking Water Regulation (NPDWR)
 - Numerical Maximum Contaminant Levels (MCLs) for PFOA and PFOS
 - Hazard Index MCL for the combination of PFNA, PFHxS, PFBS, and Gen X
 - Public notification required for MCL exceedances
 - Over 120,000 comments were received during 60-day public comment period

October 2023

- Toxic Release Inventory
 - Eliminated an exemption allowing facilities to avoid reporting on PFAS when used in small concentrations.
 - January 2024 added 7 additional PFAS compounds



April 2024

- Final NPDWR
 - MCLs for 5 pollutants

PFOA	PFOS	PFHxS
PFNA	HFPO-DA (Genx)	

- Hazard Index MCL

PFHxS	PFNA
HFPO-DA (Gen X)	PFBS

- Running Annual Average used for determining compliance

April 2024

- Final NPDWR

Pollutant	MCL	PQL	Unit
PFOA	4.0	4.0	ng/L
PFOS	4.0	4.0	ng/L
PFHxS	10.0	3.0	ng/L
PFNA	10.0	4.0	ng/L
HFPO-DA (Gen X Chemicals)	10.0	5.0	ng/L
PFBS	N/A	3.0	ng/L
Hazard Index	1	N/A	Unitless

April 2024

- Final NPDWR
 - Initial Monitoring complete by April 25, 2027
 - Conducted at all entry points, grab only

Surface Water Systems

serving all population sizes

- Quarterly within 12-month period
- Samples collected 2 to 4 months apart.

Groundwater Systems

serving > 10,000 customers

- Quarterly within 12-month period
- Samples collected 2 to 4 months apart.

Groundwater Systems

serving ≤ 10,000 customers

- Twice within 12-month period
- Samples collected 5 to 7 months apart.

- Exception to Groundwater would be GUI Systems

April 2024

- Final NPDWR
 - Initial Monitoring must be reported in the CCR
 - On-going Compliance Monitoring after April 25, 2027
 - Continue reporting through CCR
 - Public notice Monitoring and Testing procedure violations annually
 - Reduced monitoring if below trigger levels (1/2 MCL)

April 2024

- Final NPDWR
 - PWSs are required to make any necessary capital improvements to comply with the PFAS MCLs by April 26, 2029
 - Public notice of MCL violations within 30-days
 - Public notice Monitoring and Testing procedure violations annually
 - If violation persists, required to continue with that notification

April 2024

- Final NPDWR
 - Hazard Index

$$\text{Hazard Index} = \left(\frac{[\text{GenX}_{\text{water}}]}{[10 \text{ ppt}]} \right) + \left(\frac{[\text{PFBS}_{\text{water}}]}{[2000 \text{ ppt}]} \right) + \left(\frac{[\text{PFNA}_{\text{water}}]}{[10 \text{ ppt}]} \right) + \left(\frac{[\text{PFHxS}_{\text{water}}]}{[10 \text{ ppt}]} \right)$$

$$2 \text{ (2.1 rounded to one significant digit)} = \left(\frac{[5 \text{ ppt}]}{[10 \text{ ppt}]} \right) + \left(\frac{[200 \text{ ppt}]}{[2000 \text{ ppt}]} \right) + \left(\frac{[5 \text{ ppt}]}{[10 \text{ ppt}]} \right) + \left(\frac{[10 \text{ ppt}]}{[10 \text{ ppt}]} \right)$$

April 2024

• Final NPDWR Running Annual Average (RAA)

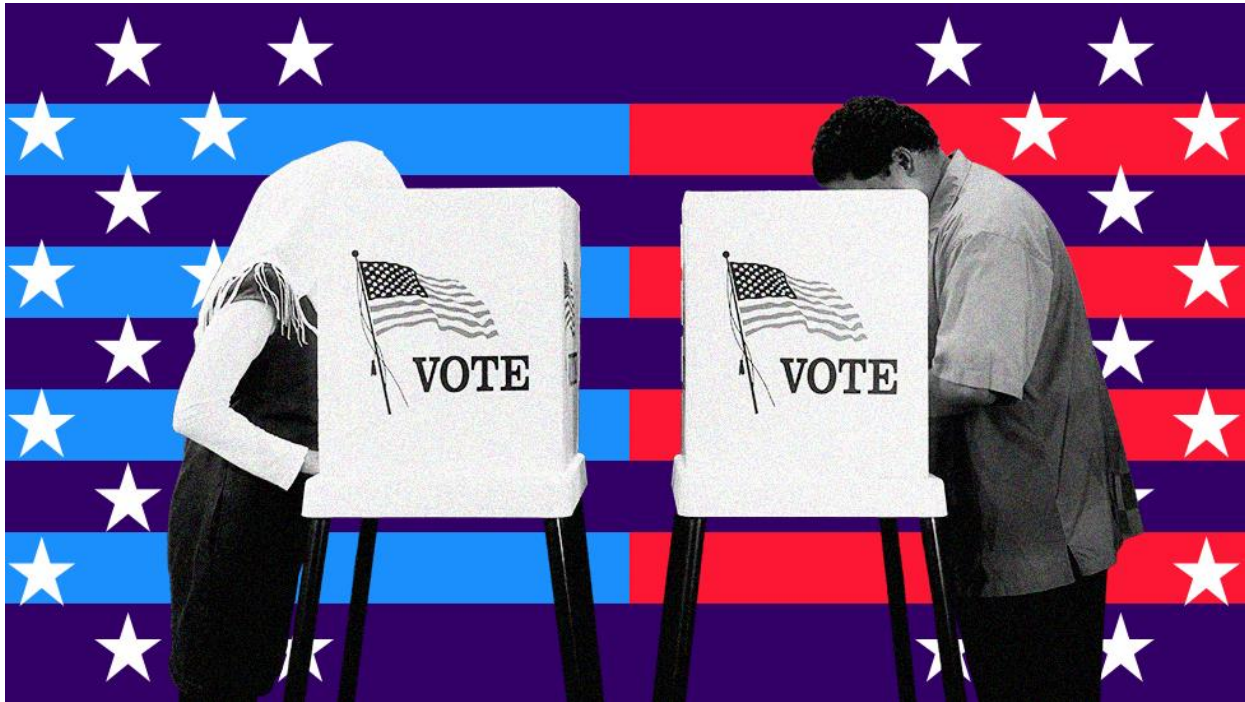
Chemical	Quarter 1		Quarter 2		Quarter 3		Quarter 4	
	Sample	Q1 Formula	Sample	Q2 Formula	Sample	Q3 Formula	Sample	Q4 Formula
HFPO-DA (ppt)	5 ppt	5 ppt/10 ppt = 0.5	5 ppt	5 ppt/10 ppt = 0.5	Not detected	0 ppt/10 ppt = 0	Not detected	0 ppt/10 ppt = 0
PFBS (ppt)	5 ppt	5 ppt/2000 ppt = 0.0025	5 ppt	5 ppt/2000 ppt = 0.0025	Not detected	0 ppt/2000 ppt = 0	5 ppt	5 ppt/2000 ppt = 0.0025
PFNA (ppt)	Not detected	0 ppt/10 ppt = 0	Not detected	0 ppt/10 ppt = 0	4 ppt	4 ppt /10 ppt = 0.4	Not detected	0 ppt/10 ppt = 0
PFHxS (ppt)	3 ppt	3 ppt/10 ppt = 0.3	Not detected	0 ppt/10 ppt = 0	4 ppt	4 ppt /10 ppt = 0.4	6 ppt	6 ppt/10 ppt = 0.6
Hazard Index (unitless)	0.5 + 0.0025 + 0 + 0.3 = 0.8025		0.5 + 0.0025 + 0 + 0 = 0.5025		0 + 0 + 0.4 + 0.4 = 0.8		0 + 0.0025 + 0 + 0.6 = 0.6025	
<p style="text-align: center;"> Running Annual Average = $\left(\frac{0.8025 + 0.5025 + 0.8 + 0.6025}{4} \right) = 0.6769 = 0.7$ </p> <p style="text-align: center;"> The Hazard Index Running Annual Average result is 0.7 (rounded to one significant digit). Because this result does not exceed 1, the water system has not exceeded the MCL. Therefore, no violation of the Hazard Index MCL has occurred. </p>								

July 2024

- CERCLA
 - PFOA & PFOS designated hazardous
 - Releases of a pound or more in any 24-hour period

Plant Effluent Flow (MGD)	Effluent PFOA Result (ng/L)	Mass Load of PFOA in Plant Effluent (ppd)	Effluent PFOS Result (ng/L)	Mass Load of PFOS in Plant Effluent (ppd)
165.89	23	0.03182102	20	0.027670452
171.13	7.8	0.011132349	6.4	0.009134235
135.494	8.6	0.009718172	5.7	0.006441114
144.34	5.9	0.007102394	12	0.014445547

2024-2025



- Presidential Election

October – December 2024

- POTW Influent PFAS Study
 - The data collection to gather data on sources of PFAS discharges
- National Sewage Sludge Study (NSSS)
 - Data collection intended to establish a national data set of sewage sludge
- Preliminary ELG Plan 16 released

January 2025

- Draft Sewage Sludge Risk Assessment
 - Risk from use or disposal of sewage sludge by land application
 - Does NOT create any new requirements



May 2025

- EPA announced potential changes to the NPDWR
 - Keep MCL at 4 ng/L for PFOA & PFOS
 - Rescind all other MCLs and the Hazard Index
 - Extend Final Compliance with MCLs to 2031
 - Enhanced Communication and Outreach
 - Holding polluters accountable

July - September 2025

- EPA filed a motion for partial vacatur of NPDWR
 - Argued improper procedure for development of some MCLs
- Federal Court dismisses case that attempted to force the EPA to regulate PFAS in sewage sludge/biosolids

January 2026

- Federal Court denied EPA's motion for partial vacatur of NPDWR
 - Final Brief filing March 6, 2026
 - Fully panel review after filings

February 2026

- AMWA announced that the EPA sent two proposed rule changes to the Office of Management and Budget
 - Rescind and reconsider the standards for PFHxS, PFNA, HFPO-DA (Gen X), Hazard Index and PFBS
 - Extension to the final MCL compliance deadline from 2029 to 2031



What about the little brother?

2010 - 2022

- We start to see the legislative actions around PFAS
 - Michigan requires reporting of PFAS foam – 2019
 - Indiana prohibits PFAS foam for training and testing – 2020
 - Michigan implements PFAS level for land application of biosolids – 2021
 - Maine bans biosolids application - 2022

2022

- We begin to see widespread restrictions of PFAS in a variety of ways
 - Maine bans biosolids application
 - California restricts PFAS in apparel and cosmetics
 - Maryland restricts PFAS food packaging

2023

- More than 200 bills were introduced, with 23 states enacting legislative action
 - Rhode Island – Drinking Water
 - Maryland – Study on PFAS pesticides
 - Indiana – Prohibits PFAS turnout gear
 - Michigan – Appropriates funding for PFAS
 - California – Food packaging containing PFAS

2024

- More than 200 bills were introduced, with 36 states enacting legislative action
 - Connecticut – Testing Funding & Biosolids prohibition containing PFAS
 - Michigan – Develops current interim strategy
 - Tiered approach

2025

- More than 300 bills were introduced, with 16 states enacting legislative action
 - Oregon – Biosolids land application study
 - Rhode Island – Testing and reporting of biosolids prior to land application
 - Washington – Biosolids monitoring program
 - Colorado – Interim biosolids limit
 - Vermont – Bans consumer products with PFAS

Our own backyard

- 89th Legislature was an interesting and scary time
 - SB886/HB1674 – Essentially a ban on land application of biosolids
 - SB1898 – Ban on certain firefighting foams
 - HB 3738 – Study on school lunches

Our own backyard

- 89th Legislature Second Special Session
 - HB 290 – Essentially a ban on land application of biosolids in Johnson County
 - HB 160 – Prohibition of biosolids/sludge on certain non-agricultural land
 - HB 292 – Prohibition of biosolids/sludge on certain non-agricultural land of no less than 170,000 and no more than 190,000 residents

Our own backyard

- TCEQ Actions
 - The Systematic Review and Evidence Integration for 16 PFAS
 - The Draft Development Support Document for Perfluorooctanoic Acid (PFOA) Perfluorooctane Sulfonic Acid (PFOS) and Salts
 - Focus is on toxicology from an air quality perspective



So what's next?

2026 and Beyond



2026 and beyond

- PWS facilities **MUST** start initial monitoring
 - Invest in testing services and actively commit to more monitoring than the minimum
 - Develop sampling protocols and verify them
- Designate a SME for your organization
 - Understand the rule(s) and the impact(s) to the organization
 - Plan for data management resources/systems
- Third-party support for treatment options

2026 and beyond

- NPDWR lawsuit will determine next steps
 - Ideal case: PFOA/PFOS will stay with MCLs
 - Best case: Extension to 2031 for compliance with the MCLs
- OMB will release revisions to NPDWR for public comment
- Biosolids & Wastewater Regulations will continue to hold until lawsuits are settled
 - Perhaps the POTW Influent Study and NSSS
- ELG Plan 16 will go the way of ELG Plan 15

2026 and beyond

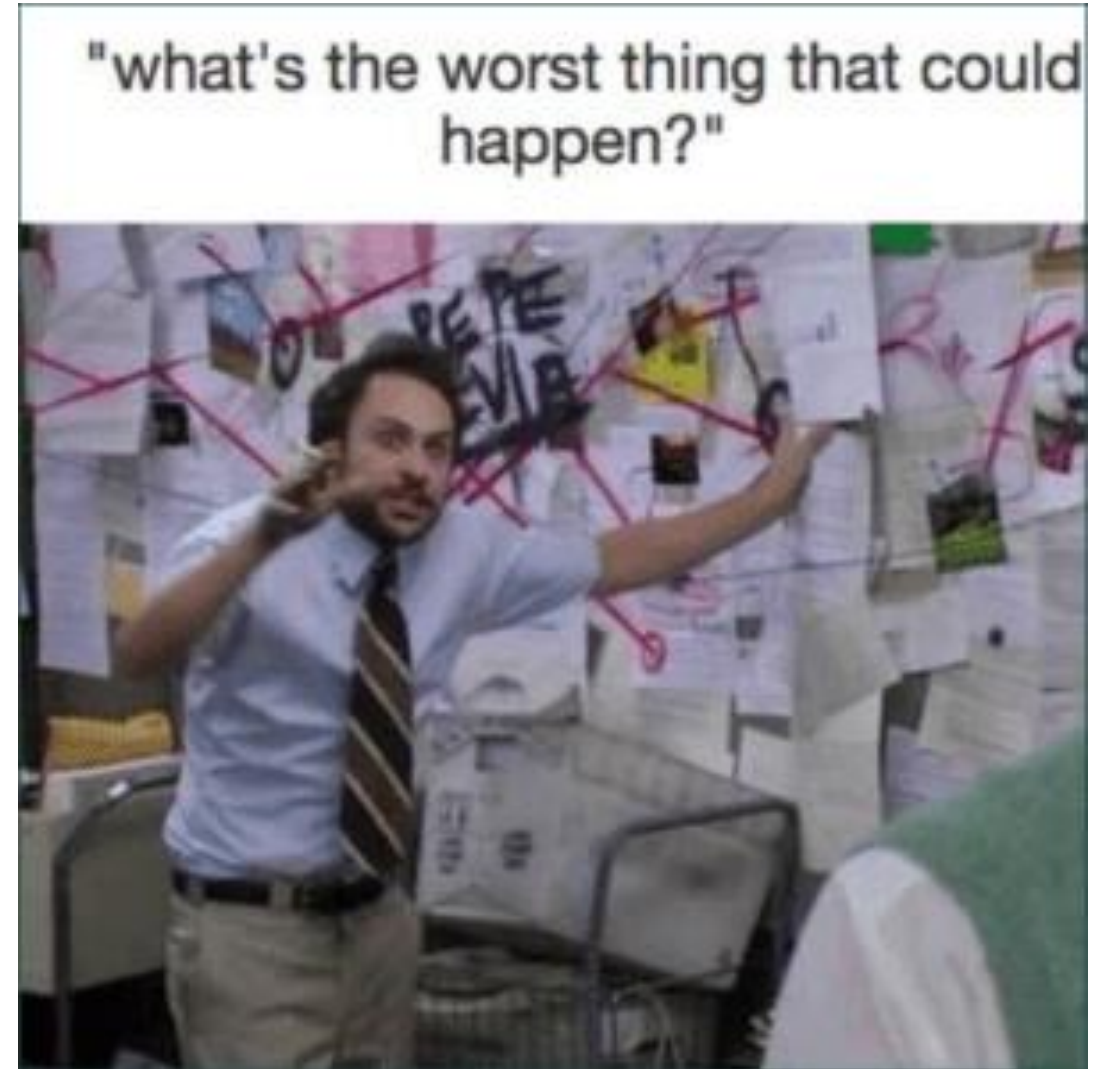


2026 and beyond

- Legislative Based Regulation
 - Best Case: PFAS biosolids study proposed
 - State institution charged with study
 - Land applying Utilities across TCEQ regions
 - Option for voluntary participation
 - Less Desirable: Interim PFAS Legislation
 - Similar to Michigan EGLE standards while TCEQ develops Texas specific limits

2026 and beyond

- Legislative Based Regulation
 - Worst Case: Permanent PFAS Legislation



2026 and beyond

- TCEQ will continue to slow roll into regulations until forced to do more than required by EPA
 - Pending toxicology “studies” finalized
 - No action on Biosolids
 - No action on Wastewater
 - No action on Pretreatment
 - Solid waste, who knows
 - Monitoring requirements, taking odds

2026 and beyond

- Supporting other utilities by providing local and in-state testing services for Texas Utilities, contact pfastesting@trinityra.org
 - Accredited by TCEQ for 533/537.1
 - Exceed method requirements for 1633
 - Developing 1621 method for AOF
 - 15-day Turnaround Time
 - Coordinated sampling/analysis events

Questions?

Joseph K. Fielding
Manager, Regulatory Services and
Compliance, Northern Region
Trinity River Authority of Texas

fieldingjk@trinityra.org

972-975-4374

PFAS Testing Services at

pfastesting@trinityra.org