PFAS & UCMR 5

TECHNICAL AND REGULATORY UPDATES

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INTRODUCTION

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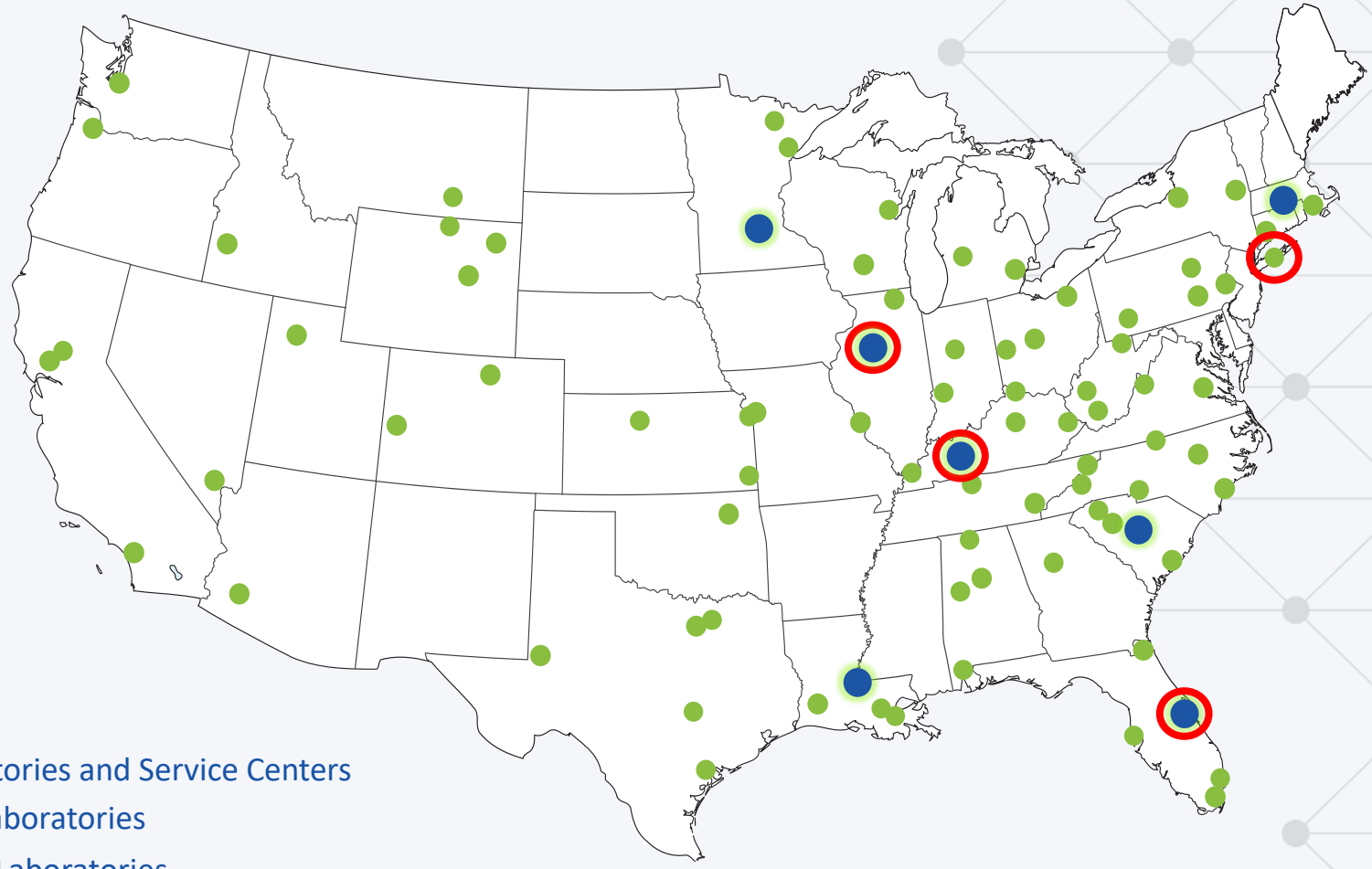
INTRODUCTION

Pace® is proud to be the largest American-owned laboratory company in the industry.



DID YOU KNOW?

PFAS ***(per- and polyfluoroalkyl substances),***
often referred to as **forever chemicals** due their chemical structure and persistence. Some PFAS such as PFOA and PFOS have been phased out, however, contamination remains.

WHAT ARE PFAS?

A large, diverse group of manufactured compounds that have been used for decades in industries and hundreds of industrial applications and consumer products.

- Entirely man-made
- Bioaccumulative
- Hydrophilic
- Have documented health impacts

AEROSPACE

AUTOMOTIVE

APPAREL & TEXTILES

FOOD PACKAGING

FIRE-FIGHTING FOAMS

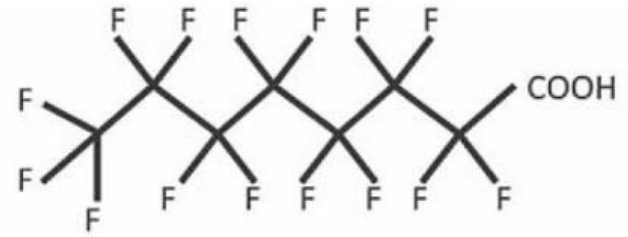
NON-STICK COATINGS/ COOKWARE

WIRE

CARPETING

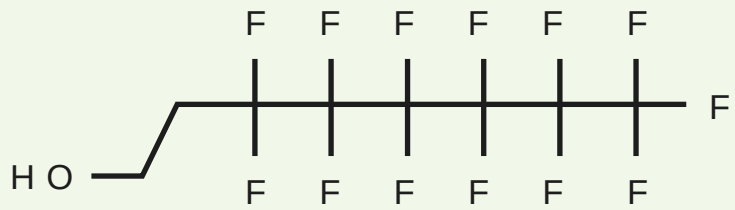
METAL PLATING

CLASSES OF PFAS



PERFLUOROALKYL

- All hydrogens on the carbons are replaced by fluorine – long chain
- Strongest chemical bond in nature
- Difficult to treat
- PFCAs and PFSAs



POLYFLUOROALKYL

- Non-fluorine atom (usually H or O) attached to at least one, but not all, carbon atoms in the tail – short chain
- Creates a “weak link” susceptible to biotic or abiotic degradation
- More susceptible to treatment
- Fluorotelomers
- AKA precursors

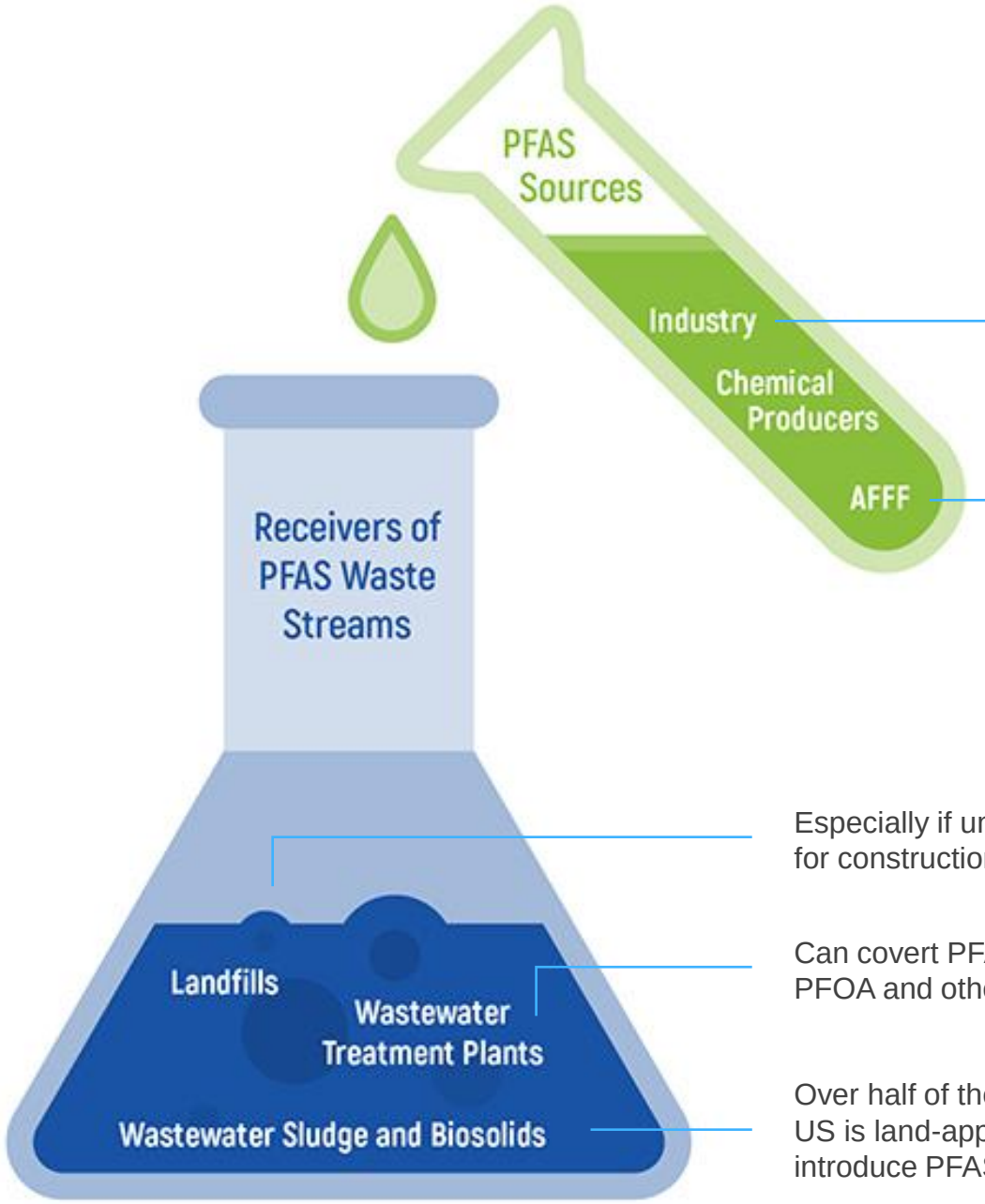
THE PFAS PUZZLE

- Lack of federal regulation
- Non-uniformity of state regulations or test methods
- Lack of environmental test methods
- Variety of compound lists
- Thousands of PFAS compounds
- Low DLs vs. contaminated matrices
- Ultra restrictive field sampling guidance

- SOURCES & RECEIVERS
- REGULATORY UPDATE
- UCMR 5 UPDATE

THE PFAS LIFECYCLE

- Industry is the most common source of PFAS contamination - both the manufacturers of PFAS chemicals and those that use them in the products they make.
- PFAS do not degrade naturally, chemicals can remain in the surrounding soil for decades.



- Textile manufacturing
- Certain paper food wrapping
- Metal plating & etching
- Wire manufacturing
- Pesticides
- Personal care products
- Non-stick cookware

Department of Defense and other users of AFFF (Aqueous film forming foam)

Especially if unlined, such as those used for construction and demolition debris

Can covert PFAS precursors into PFOA and other PFAAs

Over half of the sludge produced in the US is land-applied as biosolids and may introduce PFAS into the food chain

SOURCES OF PFAS

PFAS PRODUCTION FACILITIES

Due to the solubility and persistence of many PFAS, environmental release mechanisms associated with these facilities include:

- Air emission and dispersion
- Spills
- Disposal of manufacturing wastes and wastewater

Potential impacts to air, soil, surface water, stormwater, and groundwater are present not only at release areas but potentially over the surrounding area.

SOURCES OF PFAS

INDUSTRIAL COMPANIES THAT USE PFAS IN PRODUCTS

- Aqueous film-forming foam (AFFF)
- Textiles and leather: factory and consumer applied coating to repel water, oil, and stains
- Paper products: surface coatings to repel grease and moisture
- Metal plating and etching: corrosion prevention, wear reduction, surfactant, fume suppressant
- Wire manufacturing: coating and insulation
- Pesticides, cleaning products, polishes, photo processing

RECEIVERS OF PFAS

Solid Waste and Wastewater facilities are not creators of PFAS waste but receive PFAS-containing materials from others.

SOLID WASTE FACILITIES

- PFAS production facilities waste disposal
- Secondary manufacturing sites waste disposal
- Municipal solid waste facilities
  - Consumer and industrial PFAS-containing waste
  - Leachate
- Unlined landfills such as C&D

WASTEWATER TREATMENT

Consumer and industrial use of PFAS-containing materials, including disposal of landfill leachate, firefighting foam, and industrial effluent results in the discharge of PFAS to Wastewater Treatment Plants (WWTPs).

WWTP OPERATIONS

- Conventional sewage treatment methods do not remove or treat PFAS
- Conventional treatment processes can change PFAS concentrations
- PFAS discharge to receiving water, sludge, and biosolids

PFAS SDWA UPDATE

- SOURCES & RECEIVERS
- REGULATORY UPDATE
- UCMR 5 UPDATE

REGULATORY UPDATE: FEDERAL

- PFAS Strategic Roadmap: EPA's Commitments to Action 2021-2024
- Whole-of-agency approach
- Set timelines for specific actions and establishing new policies
- EPA Goals
  - Research – Invest, Development, Innovation
  - Restrict – Prevent PFAS land, air, water
  - Remediate – clean up contamination, human and ecological health

Source: USEPA PFAS Roadmap: https://www.epa.gov/pfas/pfas-strategic-roadmap-epas-commitments-action-2021-2024

REGULATORY UPDATE: FEDERAL

- Finalize UCMR 5 (Fall 2021) - ✓
- Establish a national drinking water MCL PFOA/PFOS (Fall 2022)
- GenX Toxicity report released 25-Oct-21, PFBA, PFHxA, PFHxS, PFNA, and PFDA to follow (Fall 2021, ongoing)
- Propose rule - PFAS chemicals as hazardous substances (Spring 2022)
- Address PFAS air emissions, mitigation, fate and transport (Fall 2022)
- Restrict discharge on industrial releases of PFAS (2022), NPDES (2022)

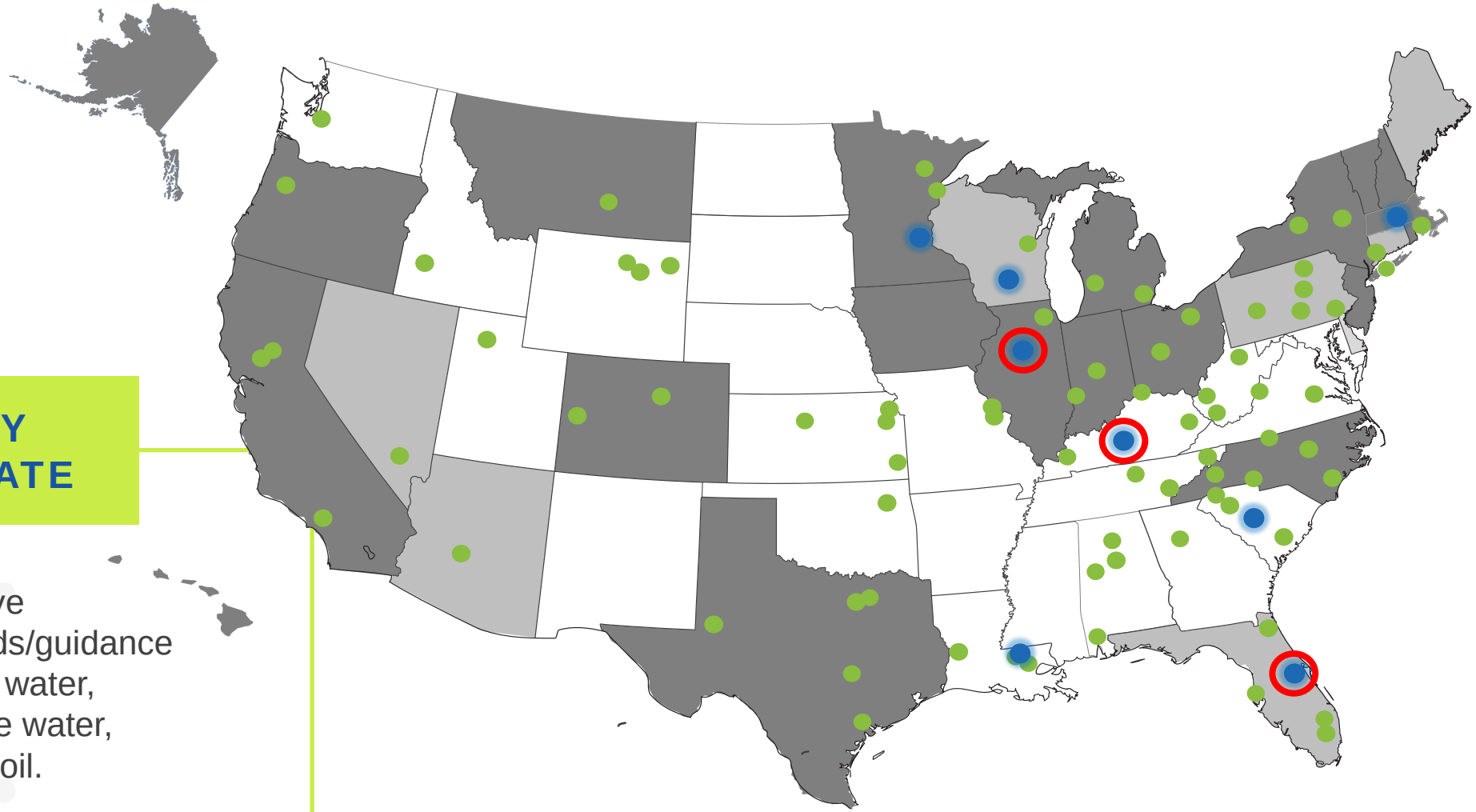
REGULATORY UPDATE: FEDERAL

Likely roll-out to the nation's water systems:

- Quarterly sampling for first 12 months for systems that have not sampled for PFAS at each Entry Point To the Distribution System (EPTDS)
- Systems with no exceedances will be scheduled to sample thereafter on a triennial basis along with SOCs
- UCMR 3 data will not be allowed for initial sampling period

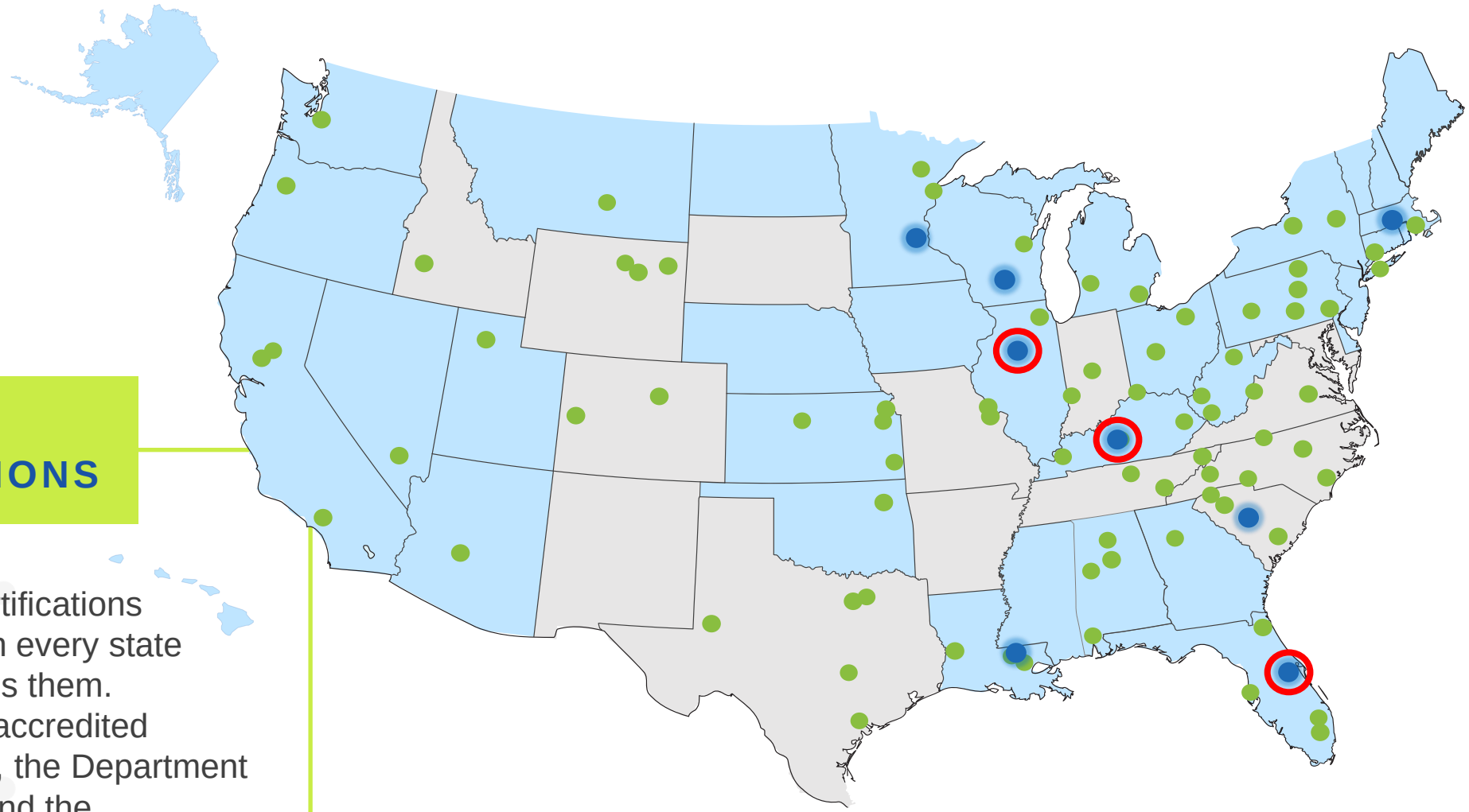
REGULATORY UPDATE: STATE

So far, 25 states have established standards/guidance for PFAS in drinking water, groundwater, surface water, wastewater and/or soil.



PFAS CERTIFICATIONS

Pace® maintains certifications and accreditations in every state that offers or requires them. We're also certified/accredited by TNI NELAC, ISO, the Department of Defense (DoD), and the Department of Energy (DOE).



PFAS Certified

PFAS Certification not available/required for non-DoD Projects

Pace® PFAS lab

Pace® laboratories & service centers

Pace® UCMR Laboratories

Pace® Gulf Coast and SC are PFAS DoD ELAP accredited throughout the US.

- SOURCES & RECEIVERS
- REGULATORY UPDATE
- UCMR 5 UPDATE

UCMR 5 - BACKGROUND

UCMR - The Unregulated Contaminant Monitoring Rule of the SDWA

- Every 5 years EPA uses the Unregulated Contaminant Monitoring Rule (UCMR) to collect data on up to 30 contaminants that are suspected to be present in drinking water and do not have health-based standards set under the Safe Drinking Water Act
- UCMR is not a compliance monitoring program, the data is studied to consider adding contaminants to the regulated list with enforceable limits
- Two PFAS are examples of this – PFOA and PFOS

Source: USEPA UCMR 5: https://www.epa.gov/dwucmr/fifth-unregulated-contaminant-monitoring-rule

UCMR 5 - BACKGROUND

Changes from UCMR 4 to UCMR 5

- Addition of all systems that serve 3,300 – 10,000 consumers – compelled by AWIA 2018
- EPA is intent on paying for testing for all systems that serve 3,300 – 10,000 consumers in its "small systems" contract with 800 randomly selected smaller systems, "subject to the availability of appropriations"
- Addition of systems more than doubles the number required to participate to approximately 10,300

UCMR 5 - BACKGROUND

Changes from UCMR 4 to UCMR 5

- No sampling of source water
- No bi-weekly sampling for surface water systems (Microcystins)
- No sampling at Distribution System (DS) locations

UCMR 5 – TESTING & SAMPLING

UCMR 5 contaminants and sampling

- 29 PFAS compounds by EPA 537.1 and EPA 533 – each sample will be required to include 1 Field Reagent Blank per method
- Lithium by EPA 200.7
- Sampling at the Entry Point To the Distribution System (EPTDS, EP, POE) only

UCMR 5 – SAMPLING SCHEDULE

- EPA will assign a 12-month sampling schedule for each system between January 2023 – December 2025
- Groundwater Systems – sample each Entry Point to the Distribution System (EPTDS) – twice during a 12 consecutive month period
- Surface water and Groundwater Under Direct Influence (GWUDI) systems – sample quarterly during a 12 consecutive month period

UCMR 5 – BUDGETARY INFORMATION

- EPA estimates all testing costs per sampling point, per sampling event to be $950
- Contact us for detailed budgetary costs

UCMR 5 – GROUNDWATER REPRESENTATIVE MONITORING PLAN

Option for groundwater systems to reduce monitoring

- Applications from ground water systems now being accepted
- PWSs with multiple ground water EPTDSs can sample at representative sampling locations EPA approval
- Previously-approved plans may be used
- Submit proposals for new GWRMPs to: UCMR_Sampling_Coordinator@epa.gov

UCMR 5 – REPRESENTATIVE CONNECTIONS

Water systems that purchase water with multiple connections from the same wholesaler may select one representative connection from that wholesaler

- Do not need EPA approval
- Upload your representative connection information to SDWARS

UCMR 5 – SDWARS

- Safe Drinking Water Accession and Review System (SDWARS) used by PWSs and EPA-approved UCMR 5 laboratories to report results
- Internet-based electronic reporting system that utilizes a secure access portal, the Central Data Exchange (CDX), to access SDWARS 5
- SDWARS 5 user instructions and trainings for labs, PWSs, and States will be available after the final rule is published Fall 2021
- January 2022 EPA issued email to all large PWSs providing direction for actions that must be taken

Source: USEPA SDWARS: https://www.epa.gov/dwucmr/reporting-requirements-unregulated-contaminant-monitoring-rule-ucmr-5

TAKE-AWAYS

- PFAS are now marching down the path to become regulated in public water – consider budgeting now
- UCMR 5 – 29 PFAS and Lithium, sampling required at each Entry Point to the Distribution System
- Not all labs are created equal – regulated parameters and unregulated parameters like PFAS and UCMR
- Pace® is your source the most current information and truly full-service lab testing

OUR OFFERINGS FOR THE NATION'S WATER SYSTEMS…

UCMR

US EPA APPROVED

- Thousands of samples run for previous rounds of UCMR
- Already prepared and US EPA approved for UCMR 5

PFAS

EXPERIENCE AND CAPACITY

6 labs testing in all matrices

FULL-SERVICE TESTING

All regulated and unregulated contaminants

SAMPLING & SAMPLE COURIER SERVICES

THANK YOU

Additional resources:

- PFAS.com
- PACELABS.COM | Search: PFAS

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