PFAS/PFOS

CIBO

Environmental Meeting

December 7, 2021

Recent PFAS Related Actions

- April, 2021, EPA Administrator Michael Regan established the EPA Council on PFAS charging it to develop a bold, strategic, whole-of-EPA strategy to protect public health and the environment from the impacts of PFAS that would be a PFAS Strategic Roadmap laying out EPA's whole-of-agency approach to tackling PFAS and set timelines
- On Oct. 18, 2021, EPA Released its PFAS Strategic Roadmap
- Oct. 26, 2021 EPA announced it would initiate two rulemakings to address per- and polyfluoroalkyl substances (PFAS) under the Resource Conservation and Recovery Act (RCRA)
- Infrastructure Investment and Jobs Act ("Infrastructure Act") was passed on Nov. 9, 2021, and signed into law on Nov. 19, 2021.

Environmental Protection Agency ("EPA") Announcement

- The initiation of two important rulemaking efforts to regulate PFAS substances under the RCRA framework
  - Listing Four PFAS Substances as Hazardous Constituents
  - Clarify Correction Action Program Regulations

Listing Four PFAS Substances as Hazardous Constituents

- Proposes to list PFOA, PFOS, PFBS and GenX (also known as HFPO-DA) as "hazardous constituents" under RCRA.
- EPA will need to evaluate existing data for these chemicals and will establish a record supporting this designation.
- The recently published human health and toxicity assessments for GenX will most likely be the methodology to be applied to the PFOA, PFOS, and PFBS analysis.

Clarify Correction Action Program Regulations

- EPA has the authority under RCRA to investigate, clean-up, and remediate hazardous wastes through the RCRA Corrective Action Program.
- Under the proposed rulemaking, EPA would be revising the Corrective Action Program regulations to clarify that EPA has the authority to require investigation and cleanup for emerging contaminants, such as PFAS substances, that meet the statutory definition of hazardous waste under RCRA section 1004(5).

Recognition

- A “hazardous constituent” designation under RCRA is an important step towards listing certain PFAS substances as “hazardous substances” under CERCLA.
- Thus, reinforcing EPA’s commitment to listing certain PFAS compounds under CERCLA!

How do these actions impact Industry?

- If the rulemaking efforts are successful:
  - Industry will need to characterize and handle PFAS waste in compliance with RCRA.
  - EPA will be able to initiate investigation and cleanup actions to address legacy PFAS contamination.

Industry Impacts

- Increased Waste Management Costs
- Investigation and Cleanup Liability
- Due Diligence and All Appropriate Inquiries.

Increased Waste Management Costs

- If PFAS substances are defined as “hazardous constituents”,
  - Monitor waste streams for these compounds
  - If present, have to comply with
    - RCRA’s characterization
    - Recordkeeping
    - Disposal requirements for that waste.

Investigation and Cleanup Liability

- By broadened RCRA Corrective Action Program authority, EPA will be able to:
  - Order facilities that historically used or may have generated PFAS waste to investigate the impacts.
  - If necessary, order cleanup residual contamination of the facility and site.
  - This further allows for federal investigation and cleanup of landfills and other waste disposal facilities that have received PFAS-containing waste.

Due Diligence and All Appropriate Inquiries

- Cautionary Note:
- PFAS impacts are not technically within the required scope of Phase I Environmental Site Assessments in order to satisfy the All Appropriate Inquires until they are designated as hazardous substances under CERCLA,
- If an entity is considering purchasing property or conducting a transaction should evaluate their potential RCRA liability resulting from the historic or ongoing presence of PFAS-contaminated RCRA waste.
- The corollary here is “If you are selling property or conducting a transaction, you should probably look at your potential RCRA liability resulting from the historic or ongoing presenc of PFAS-contaminated RCRA waste

The Unknown

- The unknown is what are the levels of allowable PFAS for protecting the environment.
- Most likely, the starting point to work backwards from will be the acceptable level of PFAS for drinking water.
- While the proposed rules are directed at defining PFAS as a Hazardous Constituent under RCRA, there will probably regulations establishing a drinking water standard for PFAS

The Unknown

- Don’t be surprised that EPA may be requesting Industrial Facilties as well as Municipal Wastewater Treatment Facilities to conduct monitoring and testing for PFAS.

Awareness

- The two proposed rule changes will have significant impacts on industry.
- It is important to recognize that PFAS risks are no longer a state-by-state analysis.
- It is becoming a series of national compliance challenges.
- However, the States, who have taken a lead and presently have lower standards than the safe drinking water levels for PFAS will have an active role ensuring their levels of controls are allowed or that the nationals standards reflect their standards.

Questions-Comments

- Questions – Comments

- Attached or some additional slides to provide more insights into the PFAS program

Supplemental Slides

PFAS Strategic Road Map

- EPA Administrator Michael Regan established the EPA Council on PFAS in April 2021 and charged it to develop a bold, strategic, whole-of-EPA strategy to protect public health and the environment from the impacts of PFAS.
  - developed the PFAS Strategic Roadmap to lay out EPA's whole-of-agency approach to tackling PFAS and set timelines
  - comprised of senior technical and policy leaders from across EPA program offices and Regions and is chaired by Assistant Administrator for Water Radhika Fox and Acting Region 1 Administrator Deb Szaro

EPA Comprehensive Approach

- ***Consider the Lifecycle of PFAS***
- ***Get Upstream of the Problem***
- ***Hold Polluters Accountable***
- ***Ensure Science-Based Decision-Making***
- ***Prioritize Protection of Disadvantaged Communities***

EPA Offices Involved

- **Office of Chemical Safety and Pollution Prevention**
- **Office of Water**
- **Office of Land and Emergency Management**
- **Office of Air and Radiation**
- **Office of Research and Development**
- **Cross-Program**

Office of Chemical Safety and Pollution Prevention

- Publish a national PFAS testing strategy to deepen understanding of the impacts of categories of PFAS, including potential hazards to human health and the environment. ***(National Testing Strategy released October 2021)***
- Ensure a robust review process for new PFAS under the Toxic Substances Control Act to ensure these substances are safe before they enter commerce. ***(ongoing)***
- Review existing PFAS under TSCA to ensure existing PFAS are being used in ways that do not present concerns, and to prevent resumed production of legacy PFAS or their use in new ways. ***(expected summer 2022 and ongoing)***
- Enhance PFAS reporting under the Toxics Release Inventory by proposing a rulemaking to remove exemptions and exclusions for toxic chemical reporting. ***(expected spring 2022)***
- Finalize new PFAS reporting under TSCA Section 8 to better characterize the sources and quantities of manufactured PFAS in the United States. ***(expected winter 2022)***

Office of Water

- Undertake nationwide monitoring for PFAS in drinking water under the fifth Unregulated Contaminant Monitoring Rule, significantly expanding the number of drinking water systems participating in the program, pending sufficient appropriations by Congress. ***(expected fall 2021)***
- Establish a national primary drinking water regulation for PFOA and PFOS that would set enforceable limits and require monitoring of public water supplies, while evaluating additional PFAS and groups of PFAS. ***(proposed rule fall 2022, final rule fall 2023)***
- Publish the final toxicity assessment for GenX and five additional PFAS—PFBA, PFHxA, PFHxS, PFNA, and PFDA—to better understand their human health and environmental effects. ***(expected fall 2021 and ongoing)***
- Publish health advisories for GenX and PFBS based on final toxicity assessments to enable tribes, states, and local governments to inform the public and take appropriate action. ***(expected spring 2022)***
- Restrict PFAS discharges from industrial sources through a multi-faceted Effluent Limitations Guidelines program to proactively establish national technology-based regulatory limits, including progress on the nine industrial categories in the proposed PFAS Action Act of 2021. ***(expected 2022 and ongoing)***

Office of Water

- Leverage National Pollutant Discharge Elimination System permitting to reduce PFAS discharges to waterways to reduce discharges of PFAS at the source and obtain more comprehensive information through monitoring on the sources of PFAS and quantity of PFAS discharged by these sources. ***(expected winter 2022)***
- Publish improved analytical methods to enable 40 PFAS to be monitored in eight different environmental matrices, and to update methods for drinking-water monitoring. ***(expected fall 2022 and fall 2024)***
- Publish final recommended ambient water quality criteria for PFAS for aquatic life and human health to help Tribes and states develop standards, write permits, and assess cumulative impacts. ***(expected winter 2022 and fall 2024)***
- Enhance data availability on PFAS in fish tissue to better assess the impacts of PFAS on the aquatic environment and to inform federal, state, and Tribal efforts to set PFAS fish advisories. ***(expected summer 2022 and spring 2023)***
- Finalize risk assessment for PFOA and PFOS in biosolids that will serve as the basis for determining whether regulation of PFOA and PFOS in biosolids is appropriate. ***(expected winter 2024)***

Office of Land and Emergency Management

- Propose to designate certain PFAS as CERCLA hazardous substances to require reporting of PFOA and PFAS releases, enhance the availability of data, and ensure agencies can recover cleanup costs. ***(proposed rule expected spring 2022, final rule expected summer 2023)***
- Issue advance notice of proposed rulemaking on various PFAS under CERCLA to seek public input on whether to similarly seek CERCLA designation of other PFAS. ***(expected spring 2022)***
- Issue updated guidance on destroying and disposing PFAS to reflect public comments on interim guidance and to reflect newly published research results. ***(expected fall 2023)***

Office of Air and Radiation

- Build the technical foundation to address PFAS air emissions to identify sources, develop and finalize monitoring approaches for stack emissions and ambient air, develop information on cost-effective mitigation technologies, and increase understanding of the fate and transport of PFAS air emissions—to inform potential regulatory and non-regulatory mitigation options. ***(expected fall 2022 and ongoing)***

Office of Research and Development

- Develop and validate methods to detect and measure PFAS in the environment, including additional targeted methods for detecting and measuring specific PFAS, non-targeted methods for identifying unknown PFAS in the environment, and exploring “total PFAS” methods. ***(ongoing)***
- Advance the science to assess human health and environmental risks from PFAS by developing human health toxicity assessments under EPA’s Integrated Risk Information System program; by compiling and summarizing available and relevant scientific information; by identifying PFAS sources, transport, and exposure pathways; and by characterizing how exposure to PFAS may contribute to cumulative impacts on communities. ***(ongoing)***
- Evaluate and develop technologies for reducing PFAS in the environment to inform decisions on drinking water and wastewater treatment, contaminated site cleanup and remediation, air emission controls, and end-of-life materials management. ***(ongoing)***

Cross-Program

- Use enforcement tools to better identify and address PFAS releases at facilities, as appropriate, to require actions by responsible parties, to limit future releases, and to address existing contamination. ***(ongoing)***
- Accelerate public health protections by identifying PFAS categories—based on toxicological data for hazard assessment and decision-making, and based on removal technologies. ***(expected winter 2021 and ongoing)***
- Establish a PFAS Voluntary Stewardship Program to challenge industry to go above and beyond regulatory or compliance requirements to reduce overall releases of PFAS into the environment. ***(expected spring 2022)***
- Educate the public about the risks of PFAS to help the public understand what PFAS are, how they are used, and how they can impact their health. ***(expected fall 2021 and ongoing)***
- Issue an annual public report on progress towards PFAS commitments included in this roadmap, as well as future actions the Agency may take. ***(winter 2022 and ongoing)***

EPA Rulemakings

First Rulemaking

- EPA will initiate the process to propose listing four PFAS chemicals as “hazardous constituents” in 40 CFR Part 261, Appendix VIII:
  - perfluorooctanoic acid (PFOA)
  - perfluorooctane sulfonic acid (PFOS)
  - perfluorobutane sulfonic acid (PFBS), and
  - GenX

  In its announcement, EPA stated that it would start the rulemaking process by evaluating the existing data for these chemicals and establishing a record to support such a proposed rule.

  This is needed to show that these substances has a toxic effect of human or other lifeforms.

Consequences of listing these PFAS chemicals in Appendix VIII

- First, the listed chemicals would be subject to RCRA corrective action requirements at hazardous waste treatment, storage, and disposal facilities (TSDFs).
- Second, this listing would be the first step necessary toward a future formal rulemaking process under 40 CFR § 261.11(a)(3) to regulate these chemicals as listed hazardous wastes.

Second Rulemaking

- EPA will clarify that the RCRA Corrective Action Program has the authority to require investigation and cleanup of “hazardous wastes” as defined by RCRA section 1004(5).
- This is an attempt to resolve an ambiguity about whether the Corrective Action Program, such as an order under RCRA section 3008(h), applies to “hazardous waste” as defined by statute in section 1004(5) or to “hazardous waste” as identified and listed in the RCRA Subtitle C regulations.
- With the statutory definition being much broader than the regulatory definition, EPA has previously suggested in guidance an interpretation in line with the former and is using this proposed rule to codify that approach.

Regulated Community Takeaways

- This action is significant step in EPA's efforts to regulate PFAS, particularly to provide federal investigation and cleanup authority over PFAS.
- The first rulemaking will have the most immediate impact on TSDFs because they are already subject to RCRA permitting requirements and EPA and authorized states to.
  - undertake modification of permits based on new regulatory requirements
  - expand the universe of facilities subject to corrective action.
- Assuming EPA succeeds in listing PFOA, PFOS, PFBS, and Gen X in Appendix VIII, then
  - Expect EPA to move next to designate these chemicals as listed hazardous wastes.
  - This results in these chemicals are automatically hazardous substances under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).
  - Thus, providing CERCLA cleanup authority over these PFAS chemicals and subject potentially responsible parties to cost recovery or contribution actions with respect to contaminated facilities.
-

Infrastructure Investment and Jobs Act

- Establishes three new grant programs addressing PFAS
  - $5 billion will go to assisting rural and disadvantaged communities address PFAS in drinking water
  - $4 billion is pledged to removing PFAS from drinking water supplies, and
  - $1 billion will be used to help address the presence of PFAS in wastewater discharge.

Infrastructure Act – PFAS Background

- The final infrastructure package includes additional funding for the EPA's State Revolving Funds (SRF). Specifically, it includes $4 billion for the Drinking Water SRF for emerging contaminants with a focus on PFAS, and $1 billion for the Clean Water SRF for emerging contaminants. The amendment allocates $5 billion through the U.S. Environmental Protection Agency (EPA) to help disadvantaged communities, states, and private well owners test for PFAS in their response actions to addressing PFAS. This program was modified in April when the Senate overwhelmingly passed the bipartisan DWWIA, which included an amendment cosponsored by Senator Gillibrand that modifies the EPA's Assistance for Small and Disadvantaged Communities program to allow states to assist more households, including those who rely on private wells, impacted by unregulated contaminants like PFAS and heavy metals and carcinogens, such as lead, arsenic and radon. The amendment also expands eligibility of the program and provides states more flexibility to take on necessary and appropriate activities or projects that can help restore clean drinking water in communities facing contamination. The bill also authorized funds to replace lead service lines, the Drinking Water and Clean Water State Revolving Funds, a pilot program at the EPA for low-income water assistance, and funding for rural and disadvantaged communities, among other measures. Before this, states could only use funds on behalf of an underserved community, which is defined as a political subdivision of the state that has an inadequate system for obtaining drinking water.

Critical Take A Ways

- This is the start of the Forever Chemicals”
- Today, the focus is directed at the PFAS/PFOS Chemical
- Tomorrow, a similar focus will be places on other chemicals.
- The protection level for drinking water will be a key decision
- Why?
  - The Drinking Water Standard will impact the evaluation of water and waste and determine its protection standards and how it will be managed
  - This will be a critical aspect in determining the clean up standards for any CERCLA Action and remediation project.
  - P:retreatment levels when PFAS/PFOS contaminated water is discharge to a wastewater treatment plant
  - Will play a role in defining the impacts on private and public water supplies

CIBO

- Monitor EPA's Strategic Road Map for PFAS
  - At the State and Federal Level (as many states are ahead of the EPA curve in defining acceptable levels of PFAS in ground and surface water and drinking water
  - Be prepared to respond to how PFAS contaminated waste and water is managed
  - Provide comments on proposed standards for PFAS/PFOS
  - Water Treatment of PFAS/PFOS has been primarily by using activated carbon or coated plastic polymers