



2022 BLACK HILLS DEFENSE & INDUSTRY SYMPOSIUM:

LEADING THE NATIONAL
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CO-HOSTED BY:





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PFAS Regulatory Framework

The curse of living in interesting times



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The Regulatory Framework for PFAS is Evolving in Real Time

- **Although the regulatory structure for remediation is generally well-established, federal regulation there are gaps when it comes to PFAS**
- **These regulatory gaps include, but are certainly not limited to the status of PFAS under the:**
 - **Comprehensive Environmental Response Compensation and Liability Act (CERCLA),**
 - **Resource Conservation and Recovery Act (RCRA)**
 - **Clean Water Act (CWA)**
 - **Safe Drinking Water Act (SDWA)**
 - **State statutory equivalents**



The Regulatory Framework for PFAS is Evolving in Real Time (cont.)

- **These regulatory gaps are further complicated by the following:**
 - **The sheer number of PFAS compounds**
 - **The rapid evolution of the scientific literature regarding PFAS toxicity and possible human health and environmental risks**
 - **The absence of widely available analytical methods to quantify the concentrations of many PFAS in water, soil, sediment and air**
 - **The lack of regulatory guidance**



EPA's PFAS Roadmap

- EPA issued the “*PFAS Strategic Roadmap: EPA’s Commitments to Action 2021-2024*” (Roadmap) on 18 October 2021
 - Presents a comprehensive “lifecycle” approach to managing PFAS impacts from manufacturing, processing, distribution in commerce, use and disposal
 - States EPA’s intent to review previous decisions on PFAS and to continually add more PFAS compounds to regulations under the Toxic Substances Control Act (TSCA), CERCLA, the Clean Air Act (CAA) and the CWA
 - The Roadmap is an aggressive, far-reaching plan for expanding their knowledge of PFAS and crafting a comprehensive regulatory framework that extends across numerous statutes
 - Many of these proposed actions resemble or overlap with actions already taken by states
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EPA's PFAS Roadmap (cont.)

- **The path from the Roadmap to actual regulations, however, will be long and difficult. It is not possible to predict with any certainty:**
 - **Which parts of the Roadmap will survive as drafted**
 - **How long it will really take to complete all of the proposed rulemaking or**
 - **What the final rules will actually look like?**
- **All of the proposed rules in this Roadmap will be contentious and subject to significant public comment and possibly litigation by a number of parties**
- **With these caveats in mind – here are some of the Roadmap regulatory initiatives that impact remediation...**



EPA's PFAS Roadmap (cont.)

- **Key Roadmap regulatory initiatives include, but are not limited to, the following:**
 - **Winter 2021: EPA submitted draft scientific documents regarding the health effects of PFOA and PFOS to the Scientific Advisory Board for review (first step in establishing MCLs)**
 - **Winter 2021: EPA published the final fifth Unregulated Contaminant Monitoring Rule (UCMR 5) in December 2021, which will require sample collection for 29 PFAS between 2023 and 2025**
 - **Spring 2022: Issue notice of proposed rulemaking PFOA and PFOS as hazardous substances under CERCLA**
 - **The proposed rule will likely be published in the Federal Register this spring**
 - **EPA plans to issue a final rule by the summer 2023**



EPA's PFAS Roadmap (cont.)

- **Spring 2022** - Publish an advanced notice of proposed rulemaking (ANPR) to collect information on designation of other PFAS compounds as CERCLA hazardous substances
 - **Spring 2022** - Issue Health Advisory (HA) Levels for GenX compounds and perfluorobutane sulfonic acid (PFBS) - note EPA published the final version of its human health toxicity assessment for GenX in October 2021
 - **Spring – Fall 2022**: Complete draft PFHxS, PFHxA, PFNA, and PFDA IRIS assessments for public comment and peer review
 - **Summer 2022**: Monitor fish tissue for PFAS from the nation's lakes and evaluate human biomarkers for PFAS
 - **Fall 2022**: Propose MCLs or treatment techniques for PFOA and PFOS in drinking water systems
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EPA's PFAS Roadmap (cont.)

- **Fall 2022**: Draft methods and approaches for evaluating PFAS leaching from solid material (rulemaking to follow)
- **Winter 2022**: Publish guidance to states on monitoring and addressing PFAS in National Pollutant Discharge Elimination (NPDES) permits
- **Winter 2022**: Develop recommended aquatic life water quality criteria for PFOA and PFOS and benchmarks for other PFAS
- **Fall 2023**: Issue updated guidance on destroying and disposing of certain PFAS containing materials (update to December 2020 interim guidance)
- **Fall 2023**: Promulgate national primary drinking water rules for a PFOA and PFOS



EPA's PFAS Roadmap (cont.)

- **Fall 2024**: Publish updates to PFAS analytical methods to monitor drinking water
- **Fall 2024**: Publish recommended human health water quality criteria for PFOA and PFOS
- **Winter 2024**: Complete final risk assessment for PFOA and PFOS in biosolids
- **Fall 2024**: Publish updated PFAS analytical methods to monitor drinking water by Fall 2024



But Wait...There's More

- **Governor Michelle Lujan Grisham of New Mexico submitted a petition to EPA in October 2021 requesting that EPA make PFAS a listed hazardous waste under RCRA, either as a class or as individual chemicals**
- **In response, EPA announced steps toward evaluating the existing data of four PFAS under RCRA to enable PFAS contamination to be addressed under the RCRA corrective action process. EPA will initiate rulemakings to:**
 - **Add PFOA, PFOS, PFBS and GenX as RCRA Hazardous Constituents under 40 CFR Part 261 Appendix VIII. This as a fundamental step to any listing determination**
 - **“Clarify” that the RCRA Corrective Action Program has the authority to require investigation and cleanup for wastes that meet the statutory definition of hazardous waste, as defined under RCRA § 1004(5) (i.e.; emerging contaminants such as PFAS can be addressed through RCRA corrective action)**



Quick Reminder of Where the Regulations Currently Stand

- **Now that you've heard a brief overview of what EPA is planning for the next few years let's take a breath and review the current regulatory framework for DoD restoration projects**
 - **No PFAS constituent has yet been defined to be a CERCLA hazardous substance but DoD does address PFAS constituents as a CERCLA §101(33) "pollutant or contaminant"**
 - **PFAS constituents are not yet regulated under RCRA hazardous waste program though states are working to include PFAS in their RCRA delegated programs (e.g. CO has added PFAS to the list of hazardous constituents in App. VIII)**
 - **There are no federal SDWA MCLs or MCL goals (MCLGs) for PFAS constituents**



How Does This Uncertain Regulatory Climate Affect Your DoD Projects?

- **Preliminary Assessment/Site Inspection (PA/SI)**
 - **Use EPA regional screening levels (RSLs) not state requirements or guidance**
 - **The EPA screening level of 40 ppt for PFOS/PFOA is used to determine if a site moves from a SI to Remedial Investigation (RI)**
 - **This existing EPA screening levels may change and the list will expand to additional PFAS compounds**



How Does This Uncertain Regulatory Climate Affect Your DoD Projects? (cont.)

■ Removal Actions Today

- In 2016, EPA published lifetime HAs for PFOS and PFOA, individually and combined with a level of 70 ppt
- Although HAs are not enforceable standards, DoD practice has been to use 70 ppt of PFOS/PFOA in drinking water as a trigger for CERCLA removal actions
- The 22 December 2021 ASD(S) Memo *Department of Defense Guidance on Using State Per- and Polyfluoroalkyl Substances Drinking Water Standards in Comprehensive Environmental Response, Compensation, and Liability Act Removal Actions* offers guidance on how DoD should address properly promulgated State PFAS drinking water standards as part of a CERCLA removal action.



How Does This Uncertain Regulatory Climate Affect Your DoD Projects? (cont.)

- **Roadmap Impacts on future removal actions?**
 - **The existing HA of 70 ppt is derived from current RfDs, the pending RfD revisions based on EPA's submissions to the SAB are likely to lead development of significantly lower HAs, orders of magnitude lower than EPA calculated in 2016**
 - **Using the same formula EPA used in developing the 2016 HAs (and adjusting it to be protective of children) would result in a range of 6 to 7 parts per quadrillion (ppq) for PFOA and 30 to 37 ppq for PFOS -- levels that are below most laboratories' detection limits**
 - **If EPA finalizes its proposed health-based conclusion that PFOA is a likely carcinogen, then the unenforceable MCLG would be zero**
 - **The final MCLs, however, would most likely be some number above zero because the MCL includes consideration of economic and technical**
 - **The intricacies of this process will be difficult to explain to the public**



Remedial Investigations

- EPA defines an RI as “...*the mechanism for collecting data to characterize site conditions, determine the nature of the waste, assess risk to human health and the environment, and conduct treatability testing to evaluate the potential performance and cost of the treatment technologies that are being considered*”
- As detailed in the Roadmap, EPA is aggressively pursuing moving the goal posts we use for defining nature and extent, assessing risk and evaluating potential treatment technologies
- This leaves us with the question of when is an RI done?



Applicable or Relevant and Appropriate Requirements (ARARs)

- **Federal environmental or state environmental or facility siting laws and regulations that are identified when evaluating CERCLA removal or remedial actions**
- **Must be established for CERCLA actions because CERCLA provides exemptions from some aspects of environmental laws and regulations for activities conducted entirely on-site**
- **Applicable requirements**
 - **substantive requirements that specifically address a hazardous substance, pollutant or contaminant, action, location or other site circumstances [40 CFR 300.5 definition]**
 - **Examples: groundwater and surface water quality standards/cleanup criteria, effluent limitations, hazardous waste requirements**



Applicable or Relevant and Appropriate Requirements (ARARs) (cont.)

- **Relevant and appropriate requirements**
 - **Substantive requirements that, while not applicable, address sufficiently similar problems or situations such that their use is well suited to particular site [40 CFR 300.5 definition]**
 - **For example, an MCL**
- **Types of ARARs**
 - **“Chemical specific” (e.g. MCLs, effluent limits, and media cleanup levels)**
 - **“Action specific” (RCRA land disposal restriction)**



Applicable or Relevant and Appropriate Requirements (ARARs) (cont.)

- **To be considered (TBCs)**
 - **To clarify the application, implementation and interpretation of ARARs, or in the absence of ARARs, other federal and state advisories, criteria and guidance may be used to establish remedial goals and support protectiveness determinations**
 - **EPA and other reliable federal and state toxicity values are a primary source of TBCs – used to establish protective health- and risk-based concentrations in the absence of ARARs**
 - **For example, EPA RSLs and similar state screening levels**
- **ARARs will be in flux as states and EPA continue to expand and refine their regulation of PFAS**



Waste Management

- **Restoration projects generate waste including, but not limited to, investigative derived waste (IDW), excavated soil, spent treatment media, and extracted groundwater**
- **Even though EPA's RCRA rulemaking proposals are in their infancy disposal of PFAS containing waste is getting trickier**
 - **Landfill and incineration operators are concerned about managing materials that may include PFAS**
 - **They may choose to refuse PFAS-containing wastes until the regulatory status of such wastes has been resolved or at least clarified**



Waste Management (cont.)

- **Section 343 of FY22 NDAA contains an incineration prohibition**
 - **The prohibition and reporting requirements apply to:**
 - **Materials sent directly by the DoD to an incinerator and**
 - **Materials sent to another entity or entities, including any waste processing facility, subcontractor, or fuel blending facility, prior to incineration**
 - **“Covered material” means any AFFF formulation containing PFAS, material contaminated by AFFF release, or spent filter or other PFAS-contaminated material resulting from site remediation or water filtration**



Waste Management (cont.)

- **What if EPA adds PFOA, PFOS, PFBS, and Gen X to Appendix VIII?**
 - **The first rulemaking will have the most immediate impact on permitted facilities because they are already subject to corrective action requirements**
 - **EPA could then move to designate these chemicals as listed hazardous wastes**
- **What if EPA designates PFOA, PFOS, PFBS, and Gen X as listed hazardous wastes?**
 - **Remember listed waste are based on their source (e.g. specific industrial process) not the results an analytical test**
 - **PFAS-impacted groundwater or soil could become a listed hazardous waste once it's no longer *in situ***
 - ***RCRA hazardous wastes are automatically hazardous substances under CERCLA***



Waste Management (cont.)

- **Waste treatment, storage and disposal options could become very limited while permitted facilities catch up with EPA's rule making**
- **What if EPA promulgates a rule clarifying that the RCRA Corrective Action Program has the authority to require investigation and cleanup of "hazardous wastes" as defined by RCRA section 1004(5)?**
 - **EPA's goal for this rulemaking is to make it clear that emerging contaminants like PFAS can be cleaned up through the RCRA corrective action process**
 - **The statutory definition in RCRA section 1004(5) is much broader than the regulatory definition in as identified and listed in the RCRA Subtitle C regulations**



We've Glimpsed the Future – What Do we Do Now?

- **Believe or not I only scratched the surface of the surface of the regulatory changes that are likely coming our way**
- **Despite this uncertainty, it is important for us to:**
 - **Become familiar with the Roadmap and perform a high level evaluation of possible impacts to restoration and waste management and update it as the Roadmap is implemented**
 - **Put together a PFAS team so that you can promptly review all ANPRs, proposed rules, HAs, MCLs, analytical method updates, and guidance for potential impacts to your restoration program**
 - **Make friends with your legal counsel – they really are your friend**