

PFAS and the Clean Water Act: Considerations for Wastewater Treatment Plants

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The U.S. Environmental Protection Agency is rolling out a robust enforcement program aimed at wastewater treatment plants and other wastewater operations for potential contamination based on [Section 301 of the Clean Water Act \(CWA\)](#).

Per- and polyfluoroalkyl substances (PFAS) are a group of industrial chemicals that have gained increasing regulatory attention based on studies which have shown them to be potentially harmful. PFAS have been used in various consumer products, firefighting foams, and industrial applications. As such, wastewater operations can be considered at particular risk for potential PFAS contamination due to the use of PFAS-containing products and the possible discharge of PFAS-containing wastewater into the environment.

Concerns for Wastewater Operations

Regulatory Enforcement

Under [CWA § 301](#), it is unlawful for any person to discharge any pollutant into waters of the United States without authorization under specific provisions of the CWA, including [§ 402](#) (National Pollutant Discharge Elimination System, or NPDES) and [§ 404](#) (discharge of dredged or fill material). EPA has begun using Section 301 of the CWA as an enforcement tool for holding polluters responsible for the discharge of PFAS into waters of the United States. EPA has targeted wastewater treatment plants (WWTPs) as a potential source of contamination, due to their role in treating industrial, residential, and commercial effluents.

Legal Ramifications

Wastewater operators may face unwanted attention if found to contribute to PFAS contamination. This attention may arise from lawsuits by private parties, such as property owners or citizens affected by PFAS-contaminated water, or from regulatory enforcement. Failure to comply with PFAS-related regulations can result in significant penalties, legal disputes, and potentially criminal liability.

While EPA has broad enforcement discretion to exempt Publicly Owned Treatment Works (POTW) Facilities, EPA strongly encourages states and municipalities to identify known or suspected sources of PFAS using the most current sampling and analysis methods in their NPDES programs. Further, EPA suggests using pretreatment provisions, effluent, and wastewater residuals monitoring, permitting limitations, and other best management practices to address potential PFAS discharge.

Financial Burden

PFAS clean-up and containment measures may pose significant financial challenges for wastewater operations. If found liable for PFAS contamination, operators may be required to pay for remediation activities, reimburse impacted parties, and/or invest in costly treatment technologies to reduce PFAS discharges.

Risk Management Strategies for Wastewater Operations

PFAS Monitoring and Testing

WWTPs and other wastewater operations may want to consider a comprehensive monitoring program to track the levels of PFAS in influent wastewater, treated effluent, wastewater sludge, and downstream receiving waters. Regularly testing for PFAS in wastewater effluents may help operators identify potential sources of contamination and ensure compliance with applicable regulations. Accurate monitoring data can also support more effective decision-making and risk management. This is especially crucial in that EPA intends to fold PFAS discharges into its National Pollutant Discharge Elimination System (NPDES) Permitting Program.

Treatment Optimization

Wastewater operators may consider evaluating and optimizing their current treatment processes to minimize potential PFAS releases. Assessing and potentially upgrading the POTW's treatment capabilities may better remove PFAS from effluent. Innovative technologies like activated carbon, ion-exchange resins, and reverse osmosis may be explored for enhanced treatment efficacy. This should involve identifying best practices, investing in new treatment technologies, or adjusting operational strategies to improve potential contaminant removal. Unfortunately, most remedial activities, to date, are focused on transfer media technology and not destructive technology. However, emerging destructive pilot technologies appear to be on the horizon.

Source Control

Identifying industrial and other facilities that may use PFAS in the POTW's catchment area may be a good starting place, including manufacturing plants, firefighting facilities, landfills, and septic systems. Parties that may discharge PFAS into the POTW may want to explore cost-effective pollution prevention and source control measures. These measures could include permit-specified limits and requirements to implement best management practices. Operators may wish to explore working with industrial and commercial dischargers to implement robust source control measures, such as proper containment or disposal protocols. By proactively addressing possible contaminant releases at the original source, wastewater operators may be able to reduce further ramifications and improve overall plant performance.

Communication and Collaboration

Networking and collaboration channels between POTWs, government agencies, industries, and academic institutions can encourage information sharing on PFAS management best practices, treatment advancements, and data collection. It may also build trust and collective understanding of related risks. This cooperative approach can lead to more effective solutions and shared responsibility in addressing contamination.

PFAS Management Plans

Regularly reviewing and updating the PFAS management plans to incorporate the latest technologies and regulations may be helpful. This will position WWTPs to adapt any new practices, methods, or findings to maintain an effective strategy for addressing potential PFAS discharges from POTWs. Experienced and knowledgeable counsel can help to develop Management Plans, areas of regulatory non-compliance, legal disputes, or public concerns. Developing and refining such plans may also help minimize risks and respond more effectively as issues arise. Wastewater operators may also seek legal advice from experienced environmental counsel regarding current regulatory schemes, EPA Guidance Policies, and current case law related to a comprehensive risk mitigation strategy.

Conclusion

Wastewater treatment plants face ongoing scrutiny stemming from potential PFAS contaminations that may warrant the adoption of proactive risk management strategies. By implementing protocols to monitor and test water, optimizing treatment processes, controlling sources of potential contamination, and fostering collaboration with stakeholders, wastewater operators may be able to mitigate possible legal and financial consequences associated with possible PFAS releases.

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