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Michael B. Gerrard
Editor


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Making Sense of Efforts to Regulate PFAS

Matthew J. Sinkman

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The number of headlines and regulatory announcements regarding per- and poly-fluoroalkyl substances (PFAS) over the past few years has been bewildering. One thing is clear: Regulators are intently focused on regulating PFAS. This article seeks to clarify the extent to which those myriad efforts fit together and to describe some of the significant challenges to effectively regulating PFAS. Particular attention is paid to how the changing regulatory landscape will affect practitioners and the regulated community in New York.

First, the article provides background regarding PFAS. Second, the article describes how the federal and state governments generally share regulatory and enforcement responsibilities under most of the major federal environmental statutes. The next sections of the article (i) review the contours of the federal-state relationship under some of the major environmental laws; (ii) discuss federal and state efforts to regulate PFAS under those laws; and (iii) describe complexities and challenges relating to those efforts.

This article shows the interlocking nature of the major environmental laws and how they are being used to target the “lifecycle” of PFAS. The article also shows that while regulatory efforts to address PFAS are likely to affect many areas of environmental law, the extent to which those efforts will effectively respond to PFAS contamination is less clear. Regardless, practitioners and the regulated community will need to stay informed about the changing regulatory landscape.

I. Background Regarding PFAS and the Evolving Regulatory Landscape to Address Them

PFAS are a group of thousands of human-made chemical compounds characterized by extremely strong carbon-fluorine bonds. PFAS have been used in ubiquitous consumer and industrial products, such as water-repellent clothing, furniture, food packaging, non-stick cooking pans, insulation for electrical wires, and aqueous film-forming foam, which is used to fight hydrocarbon fires. According to the U.S. Environmental Protection Agency (EPA), PFAS degrade slowly and “exposure to certain levels of PFAS may lead to” significant health effects.¹

PFAS are the subject of intense governmental attention and statutes and regulations that are developing in “real time.” However, those regulations face challenges because PFAS are difficult to address for several reasons: PFAS are still contained in many consumer and industrial products; PFAS are common in various environmental media and are often present at significant background levels; PFAS are mobile in groundwater and surface water; and remedial technologies are costly and there are uncertainties regarding how effective they are. Additionally, the federal and state governments themselves may be the source of PFAS contamination, which may cross state borders and cause additional complexities.

¹ See *Our Current Understanding of the Human Health and Environmental Risks of PFAS*, EPA, <https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas> (last updated June 7, 2023).

II. Enforcement of Environmental Laws by the Federal and State Governments Generally

Under most of the major environmental statutes, the federal government sets minimum standards, and the states² issue and enforce regulations, subject to federal oversight. States generally are authorized to establish standards that are more stringent than federal standards. This shared authority often is described with the optimistic label of “Cooperative Federalism.”³ However, the federal-state relationship is not always simple or without conflict.⁴

III. The Clean Water Act (CWA)

Absent a permit, the CWA prohibits discharges of pollutants from point sources into “navigable waters,” which are defined as “waters of the United States” (WOTUS).⁵ The CWA’s permitting framework is known as the National Pollutant Discharge Elimination System (NPDES).⁶ NPDES permits are required for discharges to WOTUS from sewage treatment plants (known as publicly owned treatment works (POTWs)) and industrial sources. EPA sets “effluent limitations” (i.e., standards) for such discharges based on treatment technologies that vary by industry categories and on water quality standards set by states for different types of water uses.⁷ EPA also sets technology-based pretreatment standards for industrial discharges to POTWs, which are referred to as “indirect discharges” and for which permits are also required.⁸ The CWA uses a technology-based approach, in addition to water quality standards, “because of difficulties in linking a particular discharger to violations of stream quality standards” and the slow pace of cleanup efforts that had characterized prior approaches.⁹

The CWA authorizes states to administer their own permitting programs¹⁰ and to adopt standards that are more stringent than EPA’s standards.¹¹ EPA has delegated permitting authority to 47 states, including New York, which operates the State Pollutant Discharge Elimination (SPDES) permit program.¹²

Surface waters that are not WOTUS are not regulated by the CWA, but they may be regulated by state law.¹³ New York regulates discharges into significant categories of surface waters beyond WOTUS.¹⁴ That is noteworthy given the U.S. Supreme Court’s recent decision in *Sackett v. EPA*, which held that the CWA applies to wetlands only if they have “a continuous surface connection” to a WOTUS, “so that they are indistinguishable from” WOTUS.¹⁵

Additionally, as noted above, the NPDES program does not regulate discharges from nonpoint sources. However, the Supreme Court has held that the CWA applies to discharges to groundwater if the discharge “is the functional equivalent of a direct discharge from the point source into navigable waters.”¹⁶ Further, the CWA imposes some requirements on states to address discharges from nonpoint sources and provides grants to address these discharges,¹⁷ which cause significant water quality issues.¹⁸ New York regulates discharges to groundwater.¹⁹

a. Addressing PFAS Under the CWA

As noted above, PFAS are mobile and readily travel through surface water and groundwater, which is a significant source of drinking water.²⁰ A recent study found that wastewater from treatment plants is a “key route” for PFAS to enter the

² References to states in this article include tribal areas, territories, and the District of Columbia, as applicable.

³ Scholars debate whether this framework results in a regulatory “race to the bottom,” “top,” or “middle.” See, e.g., William Magnuson, *The Race to the Middle*, 95 NOTRE DAME L. REV. 1183 (2020) (collecting scholarship and arguing that federalism leads to a “race to the middle”).

⁴ See Daniel Fiorino & Carley A. Weted, *Environmental Federalism in a Polarized Era*, 52 STATE & LOC. GOV’T REV. 138 (2020); Hannah R. Miles, Note, *Overfiling and Under-Enforcement*, 95 N.Y.U. L. REV. 837 (2020) (discussing federal oversight of state enforcement of environmental laws).

⁵ See 33 U.S.C. § 1362(7) (defining “navigable waters”), (14) (defining “point source”).

⁶ See 33 U.S.C. § 1342.

⁷ See 33 U.S.C. § 1311; *Effluent Guidelines*, EPA, <https://www.epa.gov/eg> (last updated Sept. 5, 2023).

⁸ See 33 U.S.C. § 1317; *National Pretreatment Program*, EPA, <https://www.epa.gov/npdes/national-pretreatment-program> (last updated Apr. 28, 2023).

⁹ See CONG. RSCH. SERV., RL30030, CLEAN WATER ACT: A SUMMARY OF THE LAW 2 (Oct. 18, 2016) [hereinafter CRS CWA SUMMARY], <https://crsreports.congress.gov/product/pdf/RL/RL30030>; accord RICHARD J. LAZARUS, *THE MAKING OF ENVIRONMENTAL LAW* 72 (2006).

¹⁰ See 33 U.S.C. § 1342(b).

¹¹ See 33 U.S.C. § 1370.

¹² See *State Pollutant Discharge Elimination System (SPDES) Permit Program*, N.Y. DEPT. OF ENV’T CONSERV. (DEC), <https://www.dec.ny.gov/permits/6054.html> (last visited Nov. 12, 2023).

¹³ See 33 U.S.C. § 1370.

¹⁴ See James McElfish, *State Protection of Nonfederal Waters: Turbidity Continues*, 52 ENVTL. L. REP. (Envtl. Law Inst.) 10679, 10686 n.100 (2022), <https://www.eli.org/sites/default/files/files-pdf/52.10679.pdf>.

¹⁵ 598 U.S. 651, 143 S. Ct. 1322, 1344 (2023) (citation and quotation marks omitted).

¹⁶ *County of Maui v. Haw. Wildlife Fund*, 590 U.S. ___, 140 S. Ct. 1462, 1468 (2020).

¹⁷ See 33 U.S.C. § 1329(h).

¹⁸ CRS CWA SUMMARY, *supra* note 9, at 2–3.

¹⁹ See 6 N.Y.C.R.R. pt. 703.

²⁰ See *Addressing Challenges of PFAS: Protecting Groundwater and Treating Contaminated Sources*, EPA (Sept. 20, 2021), <https://www.epa.gov/sciencematters/addressing-challenges-pfas-protecting-groundwater-and-treating-contaminated-sources>; see also Press Release, NACWA, *Feds Vastly Underestimate Forever Chemical Clean-Up Costs for Water Sector; PFAS Myths Report Shows Operational Costs for Wastewater Utilities to go up 60%, Drinking Water Utilities Require at Least \$50 Billion for New Treatment Technology* (July 18, 2023), [https://www.nacwa.org/news-publications/press-release-details/2023/07/18/feds-vastly-underestimate-forever-chemical-clean-up-costs-for-water-sector-pfas-myths-report-shows-operational-costs-for-wastewater-utilities-to-go-up-60-drinking-water-utilities-require-at-least-\\$50-billion-for-new-treatment-technology](https://www.nacwa.org/news-publications/press-release-details/2023/07/18/feds-vastly-underestimate-forever-chemical-clean-up-costs-for-water-sector-pfas-myths-report-shows-operational-costs-for-wastewater-utilities-to-go-up-60-drinking-water-utilities-require-at-least-$50-billion-for-new-treatment-technology).

environment, but treatment is “unaffordable.”²¹ EPA is reviewing technology-based approaches to mitigate PFAS contamination in discharges to WOTUS.²² EPA also has indicated it will revise effluent limitations and pretreatment standards for discharges from one industrial category (landfills) to address PFAS; EPA is continuing to study discharges from other industrial sources.²³

Additionally, EPA is working on establishing limits on PFAS in biosolids (i.e., sludge, a by-product of the wastewater treatment process).²⁴ Biosolids may be used in beneficial ways, such as fertilizer for agriculture. However, the use of biosolids may result in releases of PFAS in agricultural areas, landfills, or other areas, which may lead to the transfer of PFAS to soil, groundwater, or the food system.²⁵ Stakeholders have expressed a concern that the disposal of biosolids (or wastewater) containing PFAS could lead to liability under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (discussed below).²⁶

The New York State Department of Environmental Conservation (DEC) recognizes that some technologies can be used to mitigate PFAS contamination in surface water.²⁷ New York has established guidance values (GVs) for two types of PFAS in water and requires some industrial dischargers to monitor for PFAS.²⁸ DEC has indicated that it will use the GV's to determine effluent guidelines for some industrial dischargers and that discharges from POTWs will be addressed in the future.²⁹

b. Some Potential Challenges of Regulating PFAS Under the CWA

Regulation of PFAS under the CWA may cause several complications. First, if or when more comprehensive CWA regulations addressing PFAS are issued, there may be challenges

relating to the affordability and efficacy of treatment technologies. Given the foregoing, there is the potential for EPA or New York to exercise enforcement discretion and not pursue noncompliant dischargers and for tension between EPA and New York about over- or under-enforcement. Second, it is unclear whether wastewater treatment plants that dispose of biosolids or wastewater containing PFAS might incur liability under CERCLA. Third, the slowly evolving nature of CWA regulations may make compliance with PFAS drinking water and other standards difficult, including in states that are downstream of other states with lax CWA regulations or enforcement. (See below for discussions of drinking water standards and waste disposal.)

Practitioners should closely monitor evolving CWA and SPDES regulations to understand their compliance obligations and associated costs.

IV. The Safe Drinking Water Act (SDWA)

EPA protects drinking water supplies by establishing maximum contaminant levels (MCLs), which are legal limits on the levels of contaminants in drinking water in “public drinking water systems.”³⁰ MCLs are set based on multiple factors, including health, treatment techniques, and costs.³¹

EPA may delegate “primary enforcement responsibility” to states that adopt standards that are at least as stringent as EPA’s.³² Forty-nine states have been authorized by EPA to implement and enforce the SDWA.³³

As a practical matter, the targets of SDWA regulations are often local governments, because they own and operate most public water supplies.³⁴ EPA may authorize states to issue “variances” for small systems that cannot afford compliance technologies.³⁵

²¹ See News Release, Minn. Pollution Control Agency, Groundbreaking Study Shows Unaffordable Costs of PFAS Cleanup from Wastewater (June 6, 2023), <https://www.pca.state.mn.us/news-and-stories/groundbreaking-study-shows-unaffordable-costs-of-pfas-cleanup-from-wastewater>.

²² EPA is reviewing the efficacy of ion exchange and granular activated carbon systems. See EPA, EFFLUENT GUIDELINES PROGRAM PLAN 15, at 1-1, 1-2, 5-12 § 5.5 (Jan. 2023) [hereinafter EFFLUENT GUIDELINES PROGRAM PLAN], https://www.epa.gov/system/files/documents/2023-01/11143_EL%20Plan%2015_508.pdf.

²³ See EFFLUENT GUIDELINES PROGRAM PLAN, *supra* note 22, at 1-1, 1-2.

²⁴ *Risk Assessment of Pollutants in Biosolids*, EPA, <https://www.epa.gov/biosolids/risk-assessment-pollutants-biosolids> (last updated Mar. 23, 2023).

²⁵ ITRC, Biosolids and Per- and Polyfluoroalkyl Substances (PFAS) (Sept. 2023), https://pfas-1.itrcweb.org/wp-content/uploads/2023/10/Biosolids_PFAS_Fact_Sheet_Sept2023_final.pdf.

²⁶ Ass’n of Metro. Water Agencies et al., Correcting PFAS Myths: Misperceptions Risk Higher Clean-up Costs for Water Ratepayers 2-3 (not dated) [hereinafter Correcting PFAS Myths], <https://www.nacwa.org/docs/default-source/resources---public/water-coalition-fact-sheet-202307-v1-2.pdf> (last visited Dec. 3, 2023).

²⁷ See DEC, DOW – 1.3.13, Industrial Permitting Strategy for Implementing Guidance Values for PFOA, PFOS, and 1,4-Dioxane 2-3 (Feb. 2023) [hereinafter DOW – 1.3.13], https://www.dec.ny.gov/docs/water_pdf/2923togs1313.pdf.

²⁸ See *Water Quality Guidance Values to Regulate PFOA, PFOS, and 1, 4-Dioxane*, DEC, https://www.dec.ny.gov/chemical/127939.html#Water_Quality_Guidance_Values (last visited Nov. 12, 2023).

²⁹ See DOW – 1.3.13, *supra* note 27, at 3.

³⁰ A “public water system” means a system that serves 25 or more people or has 15 or more service connections. See 42 U.S.C. § 300f(4).

³¹ 42 U.S.C. § 300g-1(b).

³² 42 U.S.C. § 300g-2.

³³ *Public Water System Supervision (PWSS) Grant Program*, EPA, <https://www.epa.gov/dwreginfo/public-water-system-supervision-pwss-grant-program> (last updated May 19, 2023).

³⁴ Andrea Kopaskie, *Public vs Private: A National Overview of Water Systems*, ENV’T FIN. BLOG (Oct. 19, 2016), <https://efc.web.unc.edu/2016/10/19/public-vs-private-a-national-overview-of-water-systems/>. The vast majority of water systems serve 500 people or less. CONG. RSCH. SERV., RL31243, SAFE DRINKING WATER ACT (SDWA): A SUMMARY OF THE ACT AND ITS MAJOR REQUIREMENTS 5 tbl.2 (July 1, 2021) [hereinafter CRS SDWA SUMMARY], <https://crsreports.congress.gov/product/pdf/RL/RL31243/32>.

³⁵ 42 U.S.C. § 300g-4.

but to date, no variances have been issued.³⁶ States also may issue temporary exemptions “due to compelling factors,” including cost considerations.³⁷ A “suite of provisions” in the SDWA provide financial and other assistance so that public water providers can meet drinking water standards.³⁸

a. Addressing PFAS Under the SDWA

In March 2023, EPA requested comments on proposed MCLs for two types of PFAS that are known by the acronyms PFOA and PFOS. The proposed MCLs are close to zero: four parts per trillion (ppt) for both PFOA and PFOS.³⁹ EPA expects to issue final regulations for the proposed MCLs by the end of 2023.⁴⁰ Also in March, EPA requested comment on preliminary determinations to set MCLs for four other PFAS.⁴¹

EPA has announced significant funding to address PFAS in drinking water. In June 2022, EPA announced \$1 billion in grants to address PFAS and other “emerging contaminants” in drinking water in small and disadvantaged communities.⁴² In February 2023, EPA announced that an additional \$2 billion would be available for similar purposes.⁴³ Those grants are part of a total of \$10 billion provided for such purposes by the Bipartisan Infrastructure Law.⁴⁴

New York has taken similar actions. Since at least 2016, New York has investigated and remediated drinking water sources contaminated with PFAS.⁴⁵ Also in 2016, New York set MCLs for PFOA and PFOS of 10 ppt each.⁴⁶ The New York Clean Water Infrastructure Act of 2017 invested \$2.5 billion to upgrade

drinking water infrastructure generally.⁴⁷ In October 2022, New York proposed MCLs for an additional four PFAS.⁴⁸

b. Some Potential Challenges of Regulating PFAS Under the SDWA

The ambitious regulatory efforts described above may be challenging to implement, given the prevalence of PFAS in drinking water. EPA has estimated that complying with its proposed MCLs nationwide would cost around \$1 billion annually and that these costs would be offset by quantifiable and non-quantifiable health benefits.⁴⁹ However, some stakeholders have estimated that compliance costs would be nearly \$4 billion annually.⁵⁰ The U.S. Geological Survey has estimated that at least 45% of the nation’s drinking water contains PFAS.⁵¹ It appears likely that there will be legal challenges to EPA’s expected MCLs on the basis that EPA did not sufficiently consider whether they are economically and technically feasible.⁵²

Even with governmental funding, it is unclear whether water suppliers (or their customers) will be able to afford to comply with either New York’s MCLs or the expected federal MCLs. Given the foregoing, will EPA grant variances or will New York grant exemptions? Will New York exercise enforcement discretion and decide not to pursue noncompliant systems?

In addition to funding challenges, there will be challenges relating to treatment. EPA believes there are technologies to treat the PFAS that it seeks to regulate.⁵³ However, if EPA and/or New York decide that additional PFAS pose threats to human health,

³⁶ *Small Drinking Water System Variances*, EPA, <https://www.epa.gov/sdwa/small-drinking-water-system-variances> (last edited Feb. 14, 2023).

³⁷ 42 U.S.C. § 300g-5.

³⁸ CRS SDWA SUMMARY, *supra* note 34, at 14–18.

³⁹ See 88 Fed. Reg. 18,638 (Mar. 29, 2023).

⁴⁰ See *Per- and Polyfluoroalkyl Substances (PFAS): Proposed PFAS National Primary Drinking Water Regulation*, EPA, <https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas> (last updated Sept. 22, 2023).

⁴¹ See 88 Fed. Reg. 18,638.

⁴² See *Per- and Polyfluoroalkyl Substances (PFAS): Proposed PFAS National Primary Drinking Water Regulation*, EPA, <https://www.epa.gov/pfas/key-epa-actions-address-pfas> (last updated Sept. 22, 2023). EPA has found that “[m]any known and potential sources of PFAS contamination (including military bases, airports, industrial facilities, and waste management and disposal sites) are near low-income communities and communities of color.” EPA, EPA-100-K-21-002, PFAS STRATEGIC ROADMAP: EPA’S COMMITMENTS TO ACTION—2021–2024, at 8 (Oct. 2021) [hereinafter PFAS STRATEGIC ROADMAP], https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf.

⁴³ See PFAS STRATEGIC ROADMAP, *supra* note 42.

⁴⁴ EPA, EPA-800-K-22-001, EPA’S PFAS STRATEGIC ROADMAP: A YEAR OF PROGRESS 7 (Nov. 2022) [hereinafter PFAS ROADMAP PROGRESS REPORT], https://www.epa.gov/system/files/documents/2022-11/PFAS%20Roadmap%20Progress%20Report_final_Nov%202017.pdf.

⁴⁵ See *Per- and Polyfluoroalkyl Substances (PFAS)*, DEC [hereinafter *DEC PFAS*], <https://www.dec.ny.gov/chemical/108831.html> (last visited Nov. 12, 2023).

⁴⁶ See *DEC PFAS*, *supra* note 45; see also 10 N.Y.C.R.R. § 5-1.52.

⁴⁷ See *DEC PFAS*, *supra* note 45.

⁴⁸ See N.Y. State Reg., Oct. 5, 2022, at 16, <https://dos.ny.gov/system/files/documents/2022/10/100522.pdf>.

⁴⁹ See 88 Fed. Reg. 18,638, 18,724 (Mar. 29, 2023).

⁵⁰ Correcting PFAS Myths, *supra* note 26, at 2.

⁵¹ News Release, U.S. Geo. Serv., Tap Water Study Detects PFAS ‘Forever Chemicals’ Across the US (July 5, 2023), <https://www.usgs.gov/news/national-news-release/tap-water-study-detects-pfas-forever-chemicals-across-us>.

⁵² Pamela King & E.A. Crunden, *PFAS Rule Sets Up Sprawling Legal War*, E&E NEWS/GREENWIRE (Mar. 15, 2023), <https://www.eenews.net/articles/pfas-rule-sets-up-sprawling-legal-war/>. A recent challenge to MCLs for PFAS in Michigan succeeded on similar grounds. See 3M Co. v. Dept. of Env’t Great Lakes & Energy, 2023 Mich. App. LEXIS 5967 (Mich. App. Aug. 22, 2023); Peter McGuire, *Mich. Panel Invalidates State Drinking Water PFAS Limits*, LAW360 (Aug. 23, 2023), <https://www.law360.com/environmental/articles/1714183>.

⁵³ See 88 Fed. Reg. at 18,684.

which seems likely,⁵⁴ it is not clear that technology exists that can effectively treat all such PFAS.⁵⁵

Water providers should carefully track their evolving obligations under the SDWA, as well as government funding sources and available water treatment technologies.

V. The Resource Conservation and Recovery Act (RCRA)

RCRA provides national standards for the management of “hazardous waste” (and nonhazardous waste) from “cradle to grave.” Among other things, RCRA provides for a manifest system and sets standards applicable to generators,⁵⁶ transporters,⁵⁷ and treatment, storage, and disposal facilities (TSDFs).⁵⁸ RCRA seeks to prevent the creation of environmental threats that might lead to the creation of Superfund sites, which are discussed below.⁵⁹ RCRA empowers EPA and the states, if necessary, to take corrective action.⁶⁰

RCRA authorizes states to operate RCRA programs under delegated authority, as long as states have programs that are at least as stringent as EPA’s program.⁶¹ Forty-eight states have EPA-approved RCRA programs.⁶²

a. Addressing PFAS Under RCRA

EPA is evaluating whether PFAS should be considered “hazardous constituents” under RCRA, which would ensure that PFAS can be cleaned up through the corrective action process and ultimately be listed as RCRA “hazardous wastes.”⁶³

b. Some Potential Challenges of Regulating PFAS Under RCRA

There are significant challenges relating to the disposal of PFAS, regardless of whether they may be considered hazardous waste. First, it is not clear that landfills are equipped to handle PFAS. Landfills receive PFAS in the form of biosolids and residuals from wastewater treatment systems,⁶⁴ in residential and commercial waste streams,⁶⁵ and other sources. However, treatment methods for landfills are still being developed,⁶⁶ and a recent study found that the costs of treatment are very high, even if leachate from landfills can be a “key” route by which PFAS enters the environment.⁶⁷ Further, there is a concern that landfill owners could incur liability under CERCLA for discharges to wastewater treatment plants.⁶⁸

Practitioners should note that if PFAS become RCRA hazardous wastes, they will be subject to stringent manifest and handling requirements. Additionally, landfills should be mindful of their obligations to properly manage PFAS.

VI. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

CERCLA is fundamentally different from the statutes discussed above because it is not primarily a statute that regulates behavior. Instead, CERCLA focuses on cleaning up inactive hazardous waste sites. Under CERCLA, responsible parties (owners, operators, arrangers, and transporters) are strictly, and jointly and severally, liable for the investigation and cleanup of “hazardous substances.”⁶⁹ CERCLA also provides a fund (the Superfund) to

⁵⁴ See PFAS ROADMAP PROGRESS REPORT, *supra* note 44, at 4 (EPA is studying the toxicity of numerous PFAS and collecting data regarding numerous PFAS in drinking water).

⁵⁵ See *12 Treatment Technologies*, ITRC, <https://pfas-1.itrcweb.org/12-treatment-technologies/> (updated Sept. 2023).

⁵⁶ 42 U.S.C. § 6922.

⁵⁷ 42 U.S.C. § 6923.

⁵⁸ 42 U.S.C. §§ 6924–6925.

⁵⁹ See 42 U.S.C. § 6902(a)(4)–(6); *Resource Conservation and Recovery Act (RCRA) Overview*, EPA, <https://www.epa.gov/rcra/resource-conservation-and-recovery-act-rcra-overview> (last updated June 19, 2023).

⁶⁰ 42 U.S.C. § 6973; *RCRA Corrective Action Enforcement Authorities*, EPA, <https://www.epa.gov/enforcement/rcra-corrective-action-enforcement-authorities> (last updated Apr. 14, 2023).

⁶¹ 42 U.S.C. §§ 6926, 6929; 40 C.F.R. pt. 271.

⁶² See *Federal Register Notices and State Authorization Tracking System (StATS) Reports for State Authorization Under the Resource Conservation and Recovery Act*, EPA, <https://www.epa.gov/rcra/federal-register-notices-and-state-authorization-tracking-system-stats-reports-state> (last updated Aug. 5, 2023).

⁶³ News Release, EPA, EPA Responds to New Mexico Governor and Acts to Address PFAS Under Hazardous Waste Law (Oct. 26, 2021), <https://www.epa.gov/newsreleases/epa-responds-new-mexico-governor-and-acts-address-pfas-under-hazardous-waste-law>; see also 40 C.F.R. pt. 261, app. VII (listing Hazardous Constituents).

⁶⁴ See 88 Fed. Reg. 18,638, 18,686 (Mar. 29, 2023); Letter to Members of Congress from Nat’l Waste & Recycling Ass’n & Solid Waste Ass’n of N. Am. regarding Relief for Municipal Solid Waste Landfills from CERCLA Liability for PFAS (May 10, 2022) [hereinafter NWRA & SWANA Letter], https://d12v9rtomnebu.cloudfront.net/diveimages/Letter-to-Congress-on-CERCLA-Relief-and-PFAS-5-10-2218_1.pdf.

⁶⁵ See NWRA & SWANA Letter, *supra* note 64.

⁶⁶ See EPA, Interim Guidance on the Destruction and Disposal of Perfluoroalkyl and Polyfluoroalkyl Substances and Materials Containing Perfluoroalkyl and Polyfluoroalkyl Substances 71 (Dec. 18, 2020) [hereinafter EPA Interim Guidance], https://www.epa.gov/system/files/documents/2021-11/epa-hq-olem-2020-0527-0002_content.pdf (noting a “high level of uncertainty associated with PFAS behavior in landfills”).

⁶⁷ MINN. POLLUTION CONTROL AGENCY, EVALUATION OF CURRENT ALTERNATIVES AND ESTIMATED COST CURVES FOR PFAS REMOVAL AND DESTRUCTION FROM MUNICIPAL WASTEWATER, BIOSOLIDS, LANDFILL LEACHATE, AND COMPOST CONTACT WATER § 11.1 (May 2023), <https://www.pca.state.mn.us/sites/default/files/c-pfc1-26.pdf>; see also April Reese, *Some Landfills Will Begin Treating PFAS On-Site as Regulators Move to Adopt New Limits*, WASTE DIVE (Jan. 17, 2023), <https://www.wastedive.com/news/pfas-landfill-leachate-epa-casella-waste-connections/639462/> (discussing cost).

⁶⁸ NWRA & SWANA Letter, *supra* note 64.

⁶⁹ 42 U.S.C. § 9607.

ensure that such cleanups proceed if responsible parties do not take action.

While EPA oversees cleanups at the largest Superfund sites pursuant to CERCLA, EPA is required to coordinate cleanup decisions with states.⁷⁰ Additionally, cleanup goals at federal Superfund sites may incorporate state standards that are more stringent than federal standards.⁷¹ States also may initiate cleanups themselves and recover costs from responsible parties pursuant to CERCLA.⁷²

a. Addressing PFAS Under CERCLA

In April 2023, EPA issued an Advance Notice of Proposed Rulemaking that would designate PFOA and PFOS as “hazardous substances” under CERCLA.⁷³ That designation would enable the federal government and states to commence strict liability actions that could prove extremely costly to defendants.^{73.1} EPA is also considering designating other PFAS as hazardous substances.⁷⁴

In 2017, New York designated PFOA and PFOS as hazardous substances under state law.⁷⁵ That designation enabled DEC to use the New York State Superfund to pursue cleanups, and it also imposed Chemical Bulk Storage obligations on some facilities⁷⁶ and required the reporting of many releases of PFOA and PFOS.⁷⁷

Designating PFAS as hazardous substances under CERCLA will have significant consequences. Notably, the federal government itself could incur very substantial liability at numerous sites around the country, including Department of Defense (DOD) sites where aqueous film-forming foam (AFFF) containing PFOA or PFOS has been used for decades and continues to be used.⁷⁸ Indeed New York has sued DOD relating to its use of AFFF containing PFAS, which New York alleges resulted in the contamination of

drinking water sources.⁷⁹ However, it is also possible that New York could incur liability at some of these sites based on its role in connection with National Guard activities.⁸⁰

EPA has already incorporated PFAS into its “regional screening levels,” which are non-binding values used to determine if further investigations or cleanup actions are required.⁸¹ DEC has proposed regulations (i.e., Soil Cleanup Objectives) for the New York State Superfund, Brownfield Cleanup Program, and other programs that would require the remediation of PFAS in soil to very low levels.⁸² Interim SCOs from DEC are already in effect.⁸³

b. Some Potential Challenges of Regulating PFAS Under CERCLA

The screening levels and potential regulations discussed above may prove very expensive to implement, and their significance is unclear given that background levels of PFAS may result in exceedances of legal limits.⁸⁴

Superfund and Brownfield practitioners should stay updated about their obligations to test for and potentially remediate PFAS. However, if PFAS are not driving a remedy, parties should consider requesting that regulators not require onerous sampling or remediation of PFAS. Additionally, practitioners in New York will need to comply with Chemical Bulk Storage regulations relating to PFOA and PFOS and to report releases.

VII. The Clean Air Act (CAA)

The Clean Air Act (CAA) addresses air pollution by regulating emissions of pollutants from stationary and mobile sources. Under the CAA, EPA sets standards for the emissions of “hazardous air

⁷⁰ 42 U.S.C. § 9621(f).

⁷¹ 42 U.S.C. § 9621(d).

⁷² 42 U.S.C. § 9607(a)(4).

⁷³ 88 Fed. Reg. 22,399 (Apr. 13, 2023). EPA is already requiring sampling for PFAS at least some Superfund sites, and DEC is requiring such sampling at Superfund, Brownfield, and other sites.

^{73.1} EPA is developing a policy regarding enforcement discretion and settlement under CERCLA relating to PFAS. *See CERCLA PFAS Enforcement Listening Sessions*, EPA, <https://www.epa.gov/enforcement/cercla-pfas-enforcement-listening-sessions> (last updated Apr. 3, 2023).

⁷⁴ PFAS ROADMAP PROGRESS REPORT, *supra* note 44, at 8.

⁷⁵ *See* 6 N.Y.C.R.R. § 597.3.

⁷⁶ *See* 6 N.Y.C.R.R. pts. 596–599.

⁷⁷ *See* 6 N.Y.C.R.R. § 597.4.

⁷⁸ U.S. GOV’T ACCOUNTABILITY OFFICE (U.S. GAO), GAO-23-106725, INSTALLATION MANAGEMENT: DOD NEEDS BETTER DATA, STRONGER OVERSIGHT, AND INCREASED TRANSPARENCY TO ADDRESS SIGNIFICANT INFRASTRUCTURE AND ENVIRONMENTAL CHALLENGES 4 (Apr. 19, 2023), <https://www.gao.gov/assets/2023-04/gao-23-106725.pdf> (discussing PFAS contamination at and around Department of Defense (DOD) sites where AFFF has been used); U.S. GAO, GAO-23-105982, PERSISTENT CHEMICALS: ACTIONS NEEDED TO IMPROVE DOD’S ABILITY TO PREVENT THE PROCUREMENT OF ITEMS CONTAINING PFAS 5 (Apr. 2023), <https://www.gao.gov/assets/gao-23-105982.pdf> (DOD continues to use firefighting foam containing PFAS).

⁷⁹ *See, e.g.,* New York v. 3M Co., No. 2:19-cv-01022-RMG (D.S.C.). The author was involved with this litigation when he was employed as an Assistant Attorney General in the New York State Office of the Attorney General’s Environmental Protection Bureau.

⁸⁰ *See, e.g.,* County of Westchester v. United States, No. 2:19-cv-01724-RMG (D.S.C.).

⁸¹ *See* News Release, EPA, EPA Adds Five PFAS Chemicals to List of Regional Screening and Removal Management Levels to Protect Human Health and the Environment (May 18, 2022), <https://www.epa.gov/newsreleases/epa-adds-five-pfas-chemicals-list-regional-screening-and-removal-management-levels>.

⁸² *See* DEC, Express Terms: Amendments to 6 NYCRR Part 375—Environmental Remediation Programs 70, 75 (not dated), https://www.dec.ny.gov/docs/remediation_hudson_pdf/part375exterm.pdf (last visited Dec. 6, 2023).

⁸³ DEC, Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Under NYSDEC’s Part 375 Remedial Programs, at v (Apr. 2023) [hereinafter DEC PFAS Sampling], https://www.dec.ny.gov/docs/remediation_hudson_pdf/pfassampanaly.pdf.

⁸⁴ *See* Grant Gilezan et al., *The Legal Consequences of High PFAS Background Levels*, LAW360 (Apr. 18, 2023), <https://www.law360.com/articles/1595992/the-legal-consequences-of-high-pfas-background-levels>; *see also* DEC PFAS Sampling, *supra* note 83.

pollutants” from different categories of sources.⁸⁵ Some states, including New York, are authorized to grant permits to facilities that are major sources of such pollution.⁸⁶ EPA also sets “national ambient air quality standards” (NAAQS) for “criteria pollutants.”⁸⁷ States have flexibility in determining how to achieve NAAQS.⁸⁸

States may adopt more stringent standards than those adopted by EPA,⁸⁹ except for mobile sources.⁹⁰ In addition to addressing intrastate air pollution, states also must prevent emissions that could significantly contribute to nonattainment of NAAQS in downwind states.⁹¹ Likewise, states may petition EPA for control of pollution from upwind states.⁹²

a. Addressing PFAS Under the CAA

PFAS in air may cause significant contamination in other environmental media, but there is a lack of certainty about this issue. According to EPA, PFAS in air “can lead to the contamination of surface and ground water,” but further study is needed to determine whether PFAS in air may travel significant distances.⁹³ EPA is studying the fate and transport of PFAS in air and is considering whether to designate PFAS as “hazardous air pollutants” under the CAA.⁹⁴ Similarly, DEC’s permitting guidelines for evaluating emissions from manufacturing and other activities now include concentrations for certain PFAS.⁹⁵

Notably, until recently DOD was incinerating AFFF and other items containing PFAS, including in New York.⁹⁶ While incineration is thought to be one of the few methods that may actually destroy PFAS, its effectiveness is not clearly understood.⁹⁷ Accordingly, it is possible that DOD has caused PFAS contamination via air emissions in New York and elsewhere. EPA anticipates that by the end of the year it will update its guidance about destroying and disposing PFAS.⁹⁸

b. Some Potential Challenges of Regulating PFAS Under the CAA

Knowledge about the fate and transport of PFAS in air is evolving and could lead to significant new regulations, compliance costs, and liability. Practitioners should track these developments. Additionally, there may be litigation among sources of contamination, which may include the federal government and industries in upwind states.

VIII. Conclusion

As discussed above, the federal and state governments—including New York, in particular—are intently focused on addressing PFAS. Statutes and regulations targeted at PFAS are developing in “real time.” However, these efforts face significant challenges, including issues relating to the affordability and effectiveness of remedial technologies. Regardless of these challenges, practitioners and the regulated community should stay updated about the evolving regulatory landscape for PFAS, as it is likely to involve many areas of environmental law.

Matthew J. Sinkman is Counsel in the Environmental Group at Gibbons P.C., where he represents plaintiffs and defendants in Superfund and other litigation matters regarding the cleanup of hazardous waste sites. He also represents buyers, sellers, and developers of contaminated properties. He is a former Assistant Attorney General in the New York State Office of the Attorney General’s Environmental Protection Bureau.

⁸⁵ See 42 U.S.C. § 7412.

⁸⁶ See 42 U.S.C. §§ 7661–7661e.

⁸⁷ See 42 U.S.C. §§ 7408–7409. EPA’s Nonattainment and Maintenance Area Dashboard is available here: <https://awsedap.epa.gov/public/extensions/specs-area-dashboard/index.html>.

⁸⁸ See 42 U.S.C. § 7410.

⁸⁹ See 42 U.S.C. § 7416.

⁹⁰ States may not adopt standards for mobile source emissions that are more stringent than EPA’s standards, unless a state adopts California’s standards. See 42 U.S.C. §§ 7507, 7543; *Ohio v. EPA*, No. 22-1081 (D.C. Cir.) (litigation regarding the federal government’s withdrawal and subsequent reinstatement of a waiver allowing California to regulate greenhouse gas emissions from motor vehicles).

⁹¹ See 42 U.S.C. § 7410(a)(2)(D).

⁹² See 42 U.S.C. § 7426.

⁹³ See *Simulating PFAS Fate and Transport in Air with CMAQ*, EPA, <https://www.epa.gov/cmaq/simulating-pfas-fate-and-transport-air-cmaq> (last updated Feb. 24, 2023).

⁹⁴ See *Simulating PFAS Fate and Transport in Air with CMAQ*, *supra* note 93 (discussing studies of the fate and transport of PFAS in air); *PFAS Strategic Roadmap: EPA’s Commitments to Action 2021–2024*, EPA, <https://www.epa.gov/pfas/pfas-strategic-roadmap-epas-commitments-action-2021-2024#oar> (last updated Apr. 24, 2023) (noting that EPA is considering designating some PFAS as hazardous air pollutants).

⁹⁵ See DEC, DAR-1, Guidelines for the Evaluation and Control of Ambient Air Contaminants Under 6 NYCRR Part 212 (Feb. 12, 2021), https://www.dec.ny.gov/docs/air_pdf/dar1.pdf.

⁹⁶ See E.A. Crunden, *Defense Department Hits the Brakes on PFAS Incineration*, E&E NEWS/E&E NEWS PM (May 4, 2022), <https://www.eenews.net/articles/defense-department-hits-the-brakes-on-pfas-incineration/>; Press Release, Earthjustice, Department of Defense Illegally Burning Stockpiles of Toxic “Forever Chemicals” (Feb. 20, 2020), <https://earthjustice.org/press/2020/departement-of-defense-illegally-burning-stockpiles-of-toxic-forever-chemicals>.

⁹⁷ See *12 Treatment Technologies*, *supra* note 55, § 12.4; see also PFAS STRATEGIC ROADMAP, *supra* note 42, at 6 (incineration of PFAS can “lead to the release of PFAS”); EPA Interim Guidance, *supra* note 66, at 49–50.

⁹⁸ See *Interim Guidance on Destroying and Disposing of Certain PFAS and PFAS-Containing Materials That Are Not Consumer Products*, EPA, <https://www.epa.gov/pfas/interim-guidance-destroying-and-disposing-certain-pfas-and-pfas-containing-materials-are-not> (last updated Nov. 21, 2022).