

Rethinking CERCLA in the Age of PFAS: How “Forever Chemicals” are Disrupting Hazardous Waste Framework Not Built for 21st Century Emerging Contaminants

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I. Introduction

When a 40-year-old law, called the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA¹), enacted in 1980, is applied to a class of chemicals that are persistent, mobile, and widespread, we get a look into what future cleanups will look like. CERCLA was intended to cleanup legacy contamination at abandoned sites that have known sources and repositories of contamination. However, the framework of CERCLA is no longer sufficient for dealing with pollution that is growing harder to control and is fundamentally different in nature.

This blog post examines the challenge presented by the fact that CERCLA was not created to handle contaminants like per- and polyfluoroalkyl substances (PFAS) and that its foundational structure is not sufficient to address this emerging class of chemicals. Progress in regulating these extremely harmful substances will depend on following through with several essential actions, including the adoption of a shared-responsibility approach for widespread contamination that results from multiple sources and amending CERCLA’s geographic reach.

This blog asserts that if CERCLA is going to remain an effective tool for protecting human health and the environment, it must be modernized to address emerging contaminants like PFAS. Without reform, CERCLA risks forcing a twenty-first-century environmental problem into a framework that was never designed to handle it, resulting

¹ U.S. Environmental Protection Agency, *Comprehensive, Environmental, Response, Compensation, and Liability Act (CERCLA) and Federal Facilities*, <https://www.epa.gov/enforcement/comprehensive-environmental-response-compensation-and-liability-act-cercla-and-federal>, (accessed Mar. 5, 2026).

in outcomes that are inefficient, inequitable, and increasingly disconnected from how contamination occurs today.

II. History

Congress enacted CERCLA, also known as the Superfund law, in 1980 to deal with a growing problem of hazardous waste sites that were abandoned, leaking, or not properly managed, and were putting people's health and the environment at risk. To address these issues, CERCLA granted the United States Environmental Protection Agency (EPA) broad authority to investigate contamination, respond to hazardous substance releases, and require responsible parties to pay for remediation.¹

CERCLA was based on a few core assumptions. One was that most pollution happens because of releases to the environment that usually originate from specific places like factories, landfills, or spills. Another was that pollution is normally limited to a specific area. Finally, a key assumption is that polluters are held liable under the strict joint and several liability provisions for the cost of cleanup. The idea behind these core assumptions was that CERCLA would encourage people and companies to clean up their messes and prevent future pollution, which would help keep the public safe. By making polluters pay, the EPA could use this strong financial tool to enforce the law and stop environmental damage from happening in the first place, reflecting Congress's explicit adoption of the "polluter pays" concept to deter future releases of hazardous substances and to ensure that cleanup costs are borne by responsible parties rather than the public.²

What Congress did not consider under CERCLA was the presence of unique or non-traditional contaminants. Rather, back in 1980, Congress assumed that all hazardous

² Cong. Rsch. Serv., *Federal Environmental Remediation Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)*, R48630 (Aug. 14, 2025), <https://www.congress.gov/crs-product/R48630>, (accessed Apr. 15, 2026).

substances would behave and react in accordance with the basic principles of environmental science and chemistry. These assumptions and premises upon which Congress drafted the law were reasonable for the time, and, for years after the enactment of CERCLA, proved to be sufficient and accurate with respect to the common hazardous substances to which the law applies, including chlorinated solvents, heavy metals, petroleum products, and other traditional pollutants. For example, at sites such as Love Canal, EPA's response involved identifying buried drums and contaminated soils, excavating and isolating the source material, installing caps and other measures to prevent further migration, and implementing long-term monitoring to ensure any remaining contamination remains stable and protective of human health and the environment.³ Love Canal described those substances that behave and react in ways that confirmed Congress's assumptions. As a result, for over four decades, the law has been successful in meeting Congress's intent – it has successfully created a large but manageable penalty enforced on those who cause harm to the environment, a means to remedy those harms, and an incentive to not cause harm and to use less hazardous and toxic substances. In spite of preliminary concern from Congress including the cost of the Superfund (*the federal trust fund used to finance cleanups when responsible parties cannot pay, which was originally funded through taxes on industry*²), the length required to resolve complicated problems in court, and the perceived slowness of remedial actions, Congress has not questioned the underlying structure of the CERCLA system since its enactment. This continued support is because the system has functioned in a generally productive way to remediate environmental contamination involving the varying types of

³ U.S. Environmental Protection Agency, *Love Canal* (last updated 2025), <https://www.epa.gov/history/epa-history-love-canal> (accessed Apr.15, 2026).

hazardous substances that Congress sought to address. This success is evidenced by the EPA data that shows thousands of sites that have been investigated, long-term remedies that have been selected and hundreds of sites cleaned up or made available for reuse, as well as congressional findings that the statute's core liability and enforcement framework has remained effective for traditional hazardous substances.⁴

III. Enter PFAS

The use of PFAS has uncovered weaknesses in the CERCLA framework. PFAS are everywhere in our environment today. Examples of where PFAS can be found include drinking water, firefighting foam, manufacturing or chemical production facilities, household products, personal care products, and food packaging.⁵ PFAS do not fit within the CERCLA hazardous substance paradigm in three respects. First, PFAS are unique in that they are highly persistent and virtually indestructible. Their environmental persistence is not subject to reduction by means of typical environmental processes, which is why they are commonly referred to as “forever chemicals”.⁶ Second, PFAS can be highly mobile and therefore present in a wide range of environmental media, including groundwater, surface water, soil, biosolids, and even rainwater, allowing contamination to extend far beyond an initial point or release. Third, the use and release of PFAS occurs broadly because they are found in everyday products, wastewater and sewage discharge, emissions from industrial facilities and landfills, and fire-fighting foams, rather than from

⁴ U.S. Environmental Protection Agency, *Superfund Accomplishments Report: Fiscal Year 2025* (2025), [Superfund Accomplishments Report Fiscal Year 2025 | US EPA](#) (accessed Apr. 18 2026).

⁵ U.S. Environmental Protection Agency, *Our Current Understanding of the Human Health and Environmental Risks of PFAS* (2025), <https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas>, (accessed Apr. 19 2026).

a single identifiable source.⁵ None of these activities fit within the CERCLA model of a defined facility or site.

PFAS contamination is different from traditional hazardous substances because it often occurs in complex systems with many stakeholders and activities involved. Usually, there isn't just one place where the contamination starts, and it is hard to figure out its origin. PFAS can spread through many different paths, involving multiple parties, some of whom may not even be aware they are contributing to the problem. These parties are known as "passive receivers", a term that does not appear in CERCLA but emerged from stakeholder submissions during EPA's PFAS rulemaking process and was later reflected in EPA's PFAS Enforcement Discretion and Settlement Policy.⁶ These complications make it tough to use CERCLA to assign responsibility and liability, since the current CERCLA framework relies on being able to pinpoint the source of contamination. As a result, it's challenging to hold anyone accountable when there are many factors and parties at play. The complexity of PFAS contamination means that we need to rethink our approach to liability and find new ways to address the issue.

IV. Why Does CERCLA Struggle with PFAS

The fact that PFAS contamination can affect a wide variety of people and places other than those who manufacture or use them is just one part of the larger story as to why it is a struggle to fit PFAS regulations into CERCLA. In addition to being found in a large

⁶ U.S. Environmental Protection Agency, *PFAS Enforcement Discretion and Settlement Policy Under CERCLA* (Apr. 19, 2024), <https://www.epa.gov/enforcement/pfas-enforcement-discretion-and-settlement-policy-under-cercla>, (accessed Apr. 19, 2026).

National League of Cities et al., *Comments on EPA's Advanced Notice of Proposed Rulemaking Addressing PFAS in the Environment* (May 24, 2023), https://www.nlc.org/wp-content/uploads/2023/06/Passive-Receiver-Comments_CERCLA-PFAS-ANPRM-05-24-23.pdf.

variety of products and services, PFAS contaminants can be found in our drinking water, sewage treatment and disposal plants, and landfill facilities. As previously noted, these entities are best known as “passive receivers”. “Passive receivers” do not have a choice in PFAS sources found at their facilities and do not typically manufacture or generate these chemicals. Instead, “passive receivers” simply operate how they were designed to operate, such as providing safe drinking water, disposing of sewage and other waste in landfill facilities in accordance with applicable permitting and other regulatory requirements. According to the head of the EPA, Administrator Zeldin, “When it comes to PFOA and PFOS⁷ contamination, holding polluters accountable while providing certainty to a passive receiver that did not manufacture or generate those chemicals continue to be an ongoing challenge. I have heard loud and clear from the American people, from Congress, and from local municipalities about this particular issue. EPA intends to do what we can based on our existing authority, but we will need new statutory language from Congress to fully address our concerns with passive receiver liability.”⁸ Zeldin’s statement highlights the fact that CERCLA’s existing framework does not currently distinguish between the actual source of contamination and the downstream entities that are the recipients of PFAS thus signaling the need for statutory reform rather than on reliance on enforcement discretion alone.

Regulation of PFAS under CERCLA also suffers from an aged assumption that contamination can be contained to a specific area, which can be defined and then

⁷ Perfluorooctanoic Acid and Perfluorooctane Sulfonate (PFOS), for example, are two of the most widely used and studied chemicals in the PFAS group. PFOA and PFOS have been replaced in the United States with other PFAS in recent years.

⁸ U.S. Environmental Protection Agency, *Trump Announces Next Steps on Regulatory PFOA and PFOS Cleanup Efforts, Provides Update on Liability and Passive Receiver Issues*, <https://content.govdelivery.com/accounts/USEPAAO/bulletins/3f31888> (accessed Mar. 19, 2026).

remediated as necessary to correct and compensate for the contamination and subsequent harm. However, the contamination caused by a single source of PFAS discharged at a single location cannot be contained within site boundaries. PFAS contamination can spread for miles and can affect media that can cross city and state boundaries. For example, PFAS can be transported through the air, where emissions from industrial sources and waste handling activities can disperse over long distances and later deposit onto land or water, creating a new and often unconnected contamination pathway.⁹ Additionally, a 2022 study found that rainwater samples from Wisconsin contained measurable concentrations of PFAS, demonstrating that atmospheric deposition is a viable pathway for PFAS contamination.¹⁰ The presence of PFAS in air emissions and rainwater brings to light the fact that these chemicals circulate through an interconnected environmental system that defines the geographic and source-based assumptions that underpin CERCLA enforcement. The lack of defined boundaries makes it very difficult to determine where the contamination starts and ends. When contamination cannot be contained to a single location or traced to a single release, CERCLA's enforcement model begins to fall apart. From the investigation phase to the cleanup phase, everything becomes more difficult and determining who is liable becomes more uncertain.

V. Conclusion

Now over 40 years old, CERCLA feels like a product of a different era. With its age comes an unmistakable conflict between legislation that was formulated 40 years ago and a twenty-first century problem. A law that was meant to deal with isolated, site-specific

⁹ U.S. Environmental Protection Agency, *Modeling PFAS Air Emissions, Deposition, and Chemistry*, <https://www.epa.gov/air-research/modeling-pfas-air-emissions-deposition-and-chemistry> (accessed March 19, 2026).

¹⁰ Pfothenauer, D., Sellers, E., Olson, M., Praedel, K., & Shafer, M. (2022), *PFAS concentrations and deposition in precipitation: An intensive 5-month study at National Atmospheric Deposition Program-National Trends Network sites across Wisconsin, USA*, <https://www.sciencedirect.com/science/article/abs/pii/S1352231022004332?via%3Dihub> (accessed March 7, 2026).

releases is now being used to try to regulate chemicals that persist, spread easily, and show up almost everywhere in modern life. Applying CERCLA in this context pushes the statute beyond what it was designed to handle, creating real concerns about whether the results are fair or effective.

This blog concludes that Congress must revise CERCLA to address the realities of modern environmental contamination such as PFAS. Although the statute has been effective for many traditional contamination scenarios, the persistence, mobility, and diffuse nature of PFAS raise questions about the continued stability of CERCLA's framework.

Unless CERCLA is revised, cleanup costs risk being unfairly imposed on entities that bear little to no responsibility for contamination of land, air, or water, simply because they function as secondary parties within complex waste and water management systems. Such enforcement outcomes could undermine public confidence in remediation efforts, overburden municipally owned utilities, and divert attention away from the entities that generated PFAS. These consequences illustrate how CERCLA's joint-and several liability framework is ill-suited to manage contaminants such as PFAS that are highly mobile and can transverse multiple environmental medias.

Addressing the challenges of PFAS contamination will require a fundamental shift in the way that responsibility is allocated. Congress should amend CERCLA so that it shifts towards shared responsibility and apportioned liability approaches and includes statutory reform that more fully accounts for "passive receivers". Ultimately, CERCLA also needs to be updated to address the reality that contamination can occur in broader geographic

areas and affect systems in multiple media in a single transaction, and that contamination cannot always be confined to a defined geographic site.

PFAS are unlikely to be the last emerging contaminant to test our environmental legal framework. With science advancing at a faster pace than regulation, we can see firsthand how our laws need to be dynamic, manageable, fair, and able to address the emerging contamination issues of today and tomorrow rather than relying on an outdated model that assumes containment and identifies a single liable party.