

EPA GUIDANCE ON PFAS IN BIOSOLIDS

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On January 15, 2025, the United States Environmental Protection Agency (“EPA”) published its “[Draft Sewage Sludge Risk Assessment for Perfluorooctanoic Acid \(PFOA\) and Perfluorooctane Sulfonic Acid \(PFOS\)](#)” (“Draft Risk Assessment”) in the [Federal Register](#). The Draft Risk Assessment concluded that there may be human health risks associated with exposure to certain per- or polyfluoroalkyl substances (“PFAS”) from the disposal of PFAS-contaminated biosolids via land application, landfilling, or incineration.

The Draft Risk Assessment was published for notice and public comment in the final days of the Biden Administration. It remains to be seen how, or whether, the new administration will approach the task of finalizing the assessment. However, even if the EPA decides not to proceed with issuing a final assessment, the draft issued by EPA in January may provide state and local regulators with a framework to evaluate and regulate the risks of PFOA and PFOS in biosolids.

In conjunction with its issuance of the Draft Risk Assessment, EPA published several resources that provide helpful context in understanding the Assessment’s findings:

- [General Biosolids Risk Assessment Website](#);
- [Press Release \(January 14, 2025\)](#);
- [Question and Answer Website](#);
- [Fact Sheet](#); and
- [EPA Webinar Slides \(January 15, 2025\)](#).

BIOSOLIDS BROKEN DOWN

[Biosolids](#) (also commonly referred to as sewage sludge) are the end-product of the sewage treatment process. When wastewater from homes and businesses is processed by municipal wastewater treatment facilities, solids from the wastewater are separated and dried into biosolids, which may then be disposed of by various methods, including use as a fertilizer or soil amendment,

landfilling, or incineration. Biosolids are widely used as a fertilizer or soil amendment for crop production or in professional or residential landscaping applications.

According to the [Federal Register Notice](#) for the Draft Risk Assessment, "approximately: "1) 56 percent of the nation's sewage sludge is land applied as a soil conditioner or fertilizer (roughly 31 percent is applied to agricultural land and 25 percent is applied to other lands, such as reclamation sites, home lawns and gardens, or golf courses); 2) approximately 27 percent is disposed of in a sewage sludge monofill or municipal solid waste (MSW) landfill; and 3) approximately 16 percent is incinerated."

PFAS contamination of biosolids is an issue of mounting concern, particularly where those biosolids are applied to land utilized for agricultural production, as raising crops or animals on lands where PFAS-impacted biosolids have been applied may result in contamination of food sources.

EPA'S DRAFT RISK ASSESSMENT

EPA [risk assessments](#), like the Draft Risk Assessment, represent the agency's latest scientific understanding of the health risks to human as well as ecological receptors (*e.g.*, aquatic and terrestrial plants and wildlife) from certain pollutants. Such "[environmental risk assessment\[s\]](#) consider[] three primary factors: presence (*i.e.*, how much of a pollutant is present in the environment); exposure (*i.e.*, how much contact humans or wildlife have with the pollutant); and toxicity (*i.e.*, the health effects the pollutant causes in humans or wildlife)."

The Draft Risk Assessment focuses on the two PFAS compounds that have been listed as hazardous substances under CERCLA – PFOA and PFOS. According to [EPA](#), even though PFOA and PFOS are not currently produced in the United States, both compounds have been detected in biosolids as a result of "industrial releases (*e.g.*, aqueous film-forming foam, pulp and paper plants), commercial releases (*e.g.*, car washes, industrial launderers), and down-the-drain releases from homes (*e.g.*, use of consumer products like after-market water resistant sprays, ski wax, floor finishes, and laundering of stain or water-resistant textiles with PFAS coatings)."

EPA's Draft Risk Assessment evaluated exposure and health risks stemming from the three most common biosolids disposal scenarios:

1. application to land as a soil conditioner or fertilizer;
2. surface disposal in landfills; or
3. incineration.

FINDINGS

There are several limitations on EPA's underlying methodology for the Draft Risk Assessment that help contextualize the agency's findings:

1. As discussed above, the Draft Risk Assessment only analyzed potential impacts from PFOA and PFOS and did not specifically examine potential impacts from other chemicals that are classified as PFAS or PFAS precursors (i.e., substances that break down into PFAS) that may also be present in biosolids.
2. With respect to the two substances that the risk assessment *did* specifically evaluate—PFOA and PFOS—potential health impacts from those substances were evaluated in isolation; in other words, EPA did not consider the possible additive impacts of exposure to both compounds concurrently.
3. The Draft Risk Assessment did not specifically model common land application scenarios beyond the agricultural context, such as biosolid fertilizer application to golf courses, residential properties, and home gardens.

EPA was also clear in stating that the Draft Risk Assessment does not model risks for the general public from consuming foods sourced from PFAS-impacted farms. Specifically, EPA did not estimate any risks associated with “occasionally consuming products or drinking water impacted by land application of contaminated sewage sludge nor foods that come from a variety of sources (e.g., milk from a grocery store that is sourced from many farms and mixed together before being bottled).”

Rather, EPA's assessment of agricultural applications of PFAS-contaminated biosolids is limited to potential impacts from the application of those biosolids to pasture farms (raising dairy cows, beef cattle, or poultry), fruit and vegetable/crop farms, and overgrazed pastures or lands requiring reclamation of damaged soils to “people living on or near impacted farms or those that rely primarily on their products.”

With the caveats above, EPA's Draft Risk Assessment concluded the following:

- There “may be human health risks exceeding the EPA's acceptable thresholds for some modeled scenarios when land-applying sewage sludge that contains **1 part per billion (ppb)** of PFOA or PFOS.”
- There “may be human health risks associated with drinking contaminated groundwater sourced near a surface disposal site when sewage sludge containing **1 ppb of PFOA** or sewage sludge containing **4 to 5 ppb of PFOS** is disposed in an unlined or clay-lined surface disposal unit.”
- Human health risks are expected to be lower when “sewage sludge is applied to areas with protected groundwater, sites that are distant from surface waters used for fishing or as a

drinking water source, and when applied to non-food crops.”

- [Land application modeling suggests](#) that “the highest risk pathways include (1) drinking milk from pasture-raised cows consuming contaminated forage, soil, and water, (2) drinking water sourced from contaminated surface or groundwater on or adjacent to [an] impacted property, (3) eating fish from a lake impacted by runoff from [an] impacted property, and (4) eating beef or eggs from majority pasture-raised hens or cattle where the pasture has received impacted sewage sludge.”

PRACTICAL IMPACTS OF EPA’S ASSESSMENT

The Draft Risk Assessment does not set any enforceable limits for PFOA or PFOS in biosolids, but it does provide a data point both for state regulators and businesses that interact with biosolids in their supply chains (e.g., agricultural operations, including crop/livestock producers; landscaping companies; and producers of fertilizers and soil amendment products). As with many other issues related to the regulation of PFAS, one of the challenges in the biosolids space has been understanding what the appropriate concentration limits for PFAS compounds should be based on the different use cases. The Draft Risk Assessment begins to answer those questions, although as noted above, its findings are limited and do not directly apply to potentially relevant risk scenarios, such as application of biosolid-based fertilizer products in home, residential, or municipal settings or the risks to the general population of consuming foods sourced from agricultural operations contaminated by PFAS-containing biosolids.

The 1 ppb concentration level may be adopted by states as they continue to regulate the presence of PFAS in biosolids, even in scenarios with far lower exposure potential than those specifically evaluated by EPA. Ultimately, if a final risk assessment is eventually issued, EPA could then propose a regulation under [Section 405](#) of the Clean Water Act to set formal limits for PFOA and/or PFOS in sewage sludge to protect public health and the environment. As part of the effort to reduce the concentration of PFAS in biosolids, EPA may also consider developing regulations under other statutory authorities to further reduce upstream PFAS discharges that affect wastewater treatment facilities.

CONCLUSION

The [public comment period](#) for the Draft Risk Assessment is open until **March 17, 2025** (reference docket ID EPA-HQ-OW-2024-0504). Stakeholders are encouraged to submit their comments, especially regarding scientific and technical rationales.

For more information on the regulation of PFAS in products and the environment, please visit our [PFAS webpage](#). If you have a question about how to manage PFAS risk in your business or supply chain, contact Tom Lee, Nora Faris, John Kindschuh, or any other member of our PFAS team at BCLP.

RELATED PRACTICE AREAS

- PFAS Team

MEET THE TEAM



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