

Department of Legislative Services
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FISCAL AND POLICY NOTE
First Reader

House Bill 909 (Delegate Stein)
Environment and Transportation

Sewage Sludge Utilization Permits - Per- and Polyfluoroalkyl Substances -
Concentration Limits

This bill requires a sewage sludge utilization (SSU) permit issued or renewed by the Maryland Department of the Environment (MDE) for the land application of sewage sludge to agricultural land to limit the total concentration of perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) to the lesser of (1) one microgram per kilogram ($\mu\text{g}/\text{kg}$); (2) the level established in health-based standards adopted by the U.S. Environmental Protection Agency (EPA); or (3) the level established in regulations adopted by MDE pursuant to the bill. Compliance must be demonstrated by performing an analysis of a sample of the entire quantity of sewage sludge to be land applied, as specified. MDE may adopt regulations to establish (1) PFOS and PFOA concentration limits that are more stringent than those established in the bill and (2) concentration limits for per-and polyfluoroalkyl substances (PFAS) and other substances that are not listed in the bill.

Fiscal Summary

State Effect: State expenditures (multiple funds) increase, potentially significantly, from increased wastewater treatment and solid waste management costs, as discussed below. Nonbudgeted expenditures likely increase in FY 2026; nonbudgeted revenues increase correspondingly. MDE special fund revenues likely decrease beginning in FY 2026, as discussed below. It is anticipated that MDE can implement the bill with existing staff.

Local Effect: Local finances and operations are significantly affected beginning in FY 2026. Local wastewater treatment and solid waste management costs likely increase, potentially significantly. Local revenues from tipping fees may also increase.

Small Business Effect: Meaningful.

Analysis

Bill Summary: Compliance with the limits established under the bill must be demonstrated by an analysis of a sample of the entire quantity of sewage sludge to be land applied, performed (1) by an independent laboratory or other laboratory that is acceptable to MDE; (2) using standards, procedures, and methods that are acceptable to MDE; and (3) generally, not more than 14 days before the date of the land application. However, a sample may be analyzed more than 14 days before the date of land application if the sewage sludge is hauled directly from the sewage sludge generator to the field and is not stored off site or mixed with any other material prior to land application.

Current Law:

Sewage Sludge Utilization Permits and Recent Regulatory Action

Sewage sludge (also known as biosolids) is one of the final products of the treatment of sewage at a wastewater treatment plant. MDE's Land and Materials Administration issues SSU permits, which are required prior to engaging in a number of SSU activities, including the application of Class B sewage sludge to agricultural or marginal land under certain conditions, marketing, and disposing of sewage sludge at a municipal landfill.

Permit application fees vary depending on the type of SSU permit and range from \$25 to \$750. There are also fees for permit modifications and variances. In addition, sewage sludge generators pay an annual fee for each wet ton of sewage sludge generated during the previous calendar year; the fee varies depending on several factors, including how the sewage sludge is ultimately used or disposed of. Fees are deposited into the Maryland Clean Water Fund.

On February 28, 2023, due to concerns about PFAS contamination, MDE issued a biosolids regulatory update and put a hold on the issuance of new sewage sludge land application permits. MDE followed this regulatory update with an [addendum](#), issued in August 2024, that requires all wastewater treatment plants (WWTPs) from which land-applied sewage sludge originates to sample for PFOS and PFOA prior to land application. The addendum establishes (1) beginning January 1, 2025, required testing for PFOS and PFOA at a frequency that depends on the amount of sewage sludge generated at a specific site and (2) recommended actions depending on the level of PFOS or PFOA found in the sewage sludge. Pursuant to the addendum, sewage sludge with PFOS and PFOA concentrations below 20 µg/kg may be land applied with no additional requirements after submitting testing results. If PFOS and PFOA concentrations are 100 µg/kg or above, land application of the sewage sludge is recommended to be stopped.

Among other requirements, an SSU permittee for the application of sewage sludge on agricultural land must prepare a nutrient management plan in accordance with regulations and the [Maryland Nutrient Management Manual](#).

Among other requirements, unless analytical results have been submitted to MDE in accordance with testing requirements for sewage sludge generators, an SSU permittee for the disposal of sewage sludge at a municipal landfill must submit recent results of a laboratory analysis of a representative composite sample of the sewage sludge that was obtained from the WWTP that generated the sewage sludge. The sample must include percent of total solids, pH, ammonium nitrogen, nitrate nitrogen, total phosphorous, total potassium, total arsenic, total cadmium, total copper, total lead, total mercury, total molybdenum, total nickel, total selenium, total zinc, polychlorinated biphenyls, the dry weight concentration of total Kjeldahl nitrogen, and any other sewage sludge constituent that MDE determines necessary to adequately assess the potential impact of the project on public health and the environment.

Federal Regulation and Recommendations Regarding PFAS Contamination and Land Application of Sewage Sludge

As part of its comprehensive national strategy to combat PFAS pollution, called the “Strategic Roadmap,” EPA has been taking steps to restrict, remediate, and research PFAS contamination and impacts. To that end, EPA has taken several steps under numerous federal laws designed to protect human health and the environment including under the federal Clean Water Act (CWA). CWA requires EPA to establish technology-based effluent (*i.e.*, discharge) limits for industrial dischargers, known as effluent limitation guidelines. CWA also authorizes EPA to address contaminants through the National Pollutant Discharge Elimination System (NPDES), a federal regulatory tool under CWA. Under NPDES, EPA is authorized to set pollutant limits and establish monitoring and reporting requirements for contaminants in biosolids if sufficient scientific evidence shows there is potential harm to human health or the environment.

According to a January 15, 2025 [update](#) from the Congressional Research Service, EPA has not published any final technology-based effluent limits to address PFAS and has not established any requirements for PFAS in biosolids. However, on January 14, 2025, EPA issued a [draft risk assessment](#) of the potential human health risks associated with the presence of PFAS chemicals in biosolids. Once finalized, EPA will use the risk assessment to help inform future risk management actions for PFOA and PFOS in sewage sludge. The preliminary findings of the draft risk assessment indicate that there can be human health risks exceeding EPA’s acceptable thresholds, sometimes by several orders of magnitude, for some scenarios where the farmer applied biosolids containing one part per billion (ppb) of PFOA or PFOS (which is near the current detection limit for these PFAS in biosolids). One ppb is equivalent to one $\mu\text{g}/\text{kg}$.

Additionally, pursuant to a December 2022 [memo](#), EPA currently recommends pretreatment best practices to reduce PFAS from sources and quarterly monitoring of influent, effluent, and sewage sludge using EPA Method 1633, a CWA analytical method to test for PFAS compounds in wastewater and other environmental media.

The Maryland Department of Agriculture's Nutrient Management Program

In general, the Maryland Department of Agriculture's (MDA) Nutrient Management Program regulates the land application of all soil amendments/conditioners (including sewage sludge), responds to complaints related to land application and storage, and records sources of all imported and exported materials through farmer reporting on annual implementation reports. [Guidelines](#) for the application of soil conditioners, soil amendments, waste materials, or effluent on agricultural land are included in the Maryland Nutrient Management Manual.

Pursuant to the Water Quality Improvement Act of 1998, agricultural operations with \$2,500 or more in gross annual income and livestock operations with 8,000 pounds or more of live animal weight must have and comply with a nutrient management plan for nitrogen and phosphorus. A nutrient management plan is prepared to manage the amount, placement, timing, and application of animal waste, commercial fertilizer, sludge, or other plant nutrients to prevent pollution by transport of bioavailable nutrients and to maintain productivity. MDA certifies and licenses nutrient management consultants and businesses to prepare nutrient management plans for farm operations and issues certificates to farm operators to develop their own plans. Farm operators must submit summaries of their nutrient management plans to MDA when they are first developed, file annual implementation reports, revise and update plans (generally, at least once every three years), and maintain specified records (including soil analysis results and manure analysis results, as appropriate).

State/Local/Small Business Effect: MDE advises that it does not believe any of the sewage sludge in the State currently meets the concentration limits for PFOS and PFOA established by the bill. MDE also advises that the turnaround time for PFAS sample testing is longer than 14 days, which means that even samples that meet the bill's concentration limits are unable to comply with the timeline established by the bill for the analysis of samples. (MDE notes that farmers and WWTPs are unlikely to use the exemption to the 14-day requirement due to the uncertainty and costs of hauling untested sewage sludge that may not qualify and the bill's limits on off-site storage.) The Maryland Environmental Service (MES) also advises that secondary treatment options to remove PFAS from sewage sludge are currently cost prohibitive. MDE notes that capital costs to treat sewage sludge prior to land application could total millions of dollars for WWTPs.

Thus, according to MDE and MES, the bill's restrictions on the land application of sewage sludge on agricultural land result in a *de facto* ban on the application of sewage sludge on agricultural land in the State. The resulting impacts – which are discussed in more detail below – are significant.

Impacts on Wastewater Treatment Plants and Landfills in the State

MES, which handles significant volumes of sewage sludge for its customers in the State, advises that the primary methods of handling sewage sludge in the State, after treatment and dewatering, are land application, landfilling, or transportation out-of-state. MDE notes that the bill does not ban land application on marginal land. However, both MDE and MES anticipate that the bill results in a significant decrease in the amount of sewage sludge land applied in the State and, as a result, increases landfilling and out-of-state transport of sewage sludge. This increases costs and has significant impacts on WWTPs and landfill operations, which can be owned and operated by State and local government entities as well as small businesses.

Wastewater Treatment Plants: Affected owners/operators of WWTPs could include State agencies, local governments, and potentially small businesses. According to MES, landfilling sewage sludge requires additional dewatering, and not all WWTPs have dewatering infrastructure (particularly smaller WWTPs). Those that do not will likely transport sewage sludge to larger facilities for further treatment before either landfilling or transporting out-of-state. To the extent that other treatment facilities are unwilling or unable to accept additional sewage sludge for dewatering, smaller facilities may need to invest in their own dewatering infrastructure, which increases costs. Transporting sewage sludge out-of-state also increases costs. A reliable estimate of the increases in costs cannot be made at this time, but they could be significant. As a result, much of these costs are likely to be passed onto consumers.

As MES is a fee-for-service entity, any costs incurred by MES resulting from the bill are ultimately borne by the entities that contract for MES services through an increase in fees. As a result, MES nonbudgeted expenditures and revenues increase correspondingly.

Landfills: Landfills, which are primarily owned and operated by local governments, must obtain an SSU permit before accepting sewage sludge. An SSU permit to dispose of sewage sludge at a municipal landfill is \$350. MES also notes that no more than 20% of the daily solid waste volume accepted by a landfill in one day can be sewage sludge, due to slope stability concerns. Additionally, sewage sludge must be covered at the end of the day (versus being left in open air) and, as such, cannot be stockpiled. Landfill space in the State is also limited. MES anticipates that all of these factors likely result in an increase in the demand (and potentially an increase in tipping fees) for the disposal of sewage sludge at

landfills. This results in increased revenues for landfill owners and an overall increase in costs for consumers (including State agencies, local governments, and small businesses).

Maryland Department of the Environment

MDE special fund revenues are affected, potentially significantly, beginning in fiscal 2026. MDE is expecting an overall decrease in special fund revenues for the Maryland Clean Water Fund, but an exact estimate cannot be made at this time because actual impacts depend on how the regulated industry (including WWTPs and landfill owners/operators) react to the bill's changes. Some potential effects are described below.

Special fund revenues may *increase* (likely minimally) in fiscal 2026 from modified SSU transportation and disposal permit fees (\$40 each) and from the issuance of additional SSU municipal landfill permits to the remaining landfills in the State that are not yet authorized to accept sewage sludge (\$350 each). On the other hand, special fund revenues may *decrease* from the issuance of fewer SSU marketing permits to the extent WWTP operators decide to dispose of sewage sludge out-of-state. According to MDE, these permits are renewed on a 5- or 10-year basis, so special fund revenues are affected in the out-years as well.

Additionally, special fund revenues from generator fees may *decrease*, potentially significantly, due to an increase in out-of-state disposal; generators pay a lower rate for out-of-state disposal. (MDE estimates a 66% decrease in sewage sludge generator fees, which equates to roughly \$165,000 annually, although the Department of Legislative Services cannot independently verify this estimate at this time.) The impact is reduced, however, if sewage sludge is landfilled in-state instead.

Although the bill results in an increase in workload for MDE, it is anticipated that MDE can implement the bill's changes within existing budgeted resources.

Additional Effects on Small Businesses

In addition to the effects discussed above that could affect small businesses as owners/operators of WWTPs and/or landfills, small business agricultural operators are also significantly affected. Many farms in the State are small businesses. Farm operators will need to revise and update their nutrient management plans to reflect the loss/change in the source of nutrients and purchase or otherwise obtain fertilizers from a different source. For context, MDE estimates that 250 nutrient management plans must be updated with new crop fertility recommendations due to the bill's changes. Small business nutrient management consultants may see a meaningful increase in the demand for their services.

Additional Information

Recent Prior Introductions: Similar legislation has not been introduced within the last three years.

Designated Cross File: SB 732 (Senator Love) - Education, Energy, and the Environment.

Information Source(s): Maryland Environmental Service; Howard and Prince George's counties; Maryland Association of Counties; Northeast Maryland Waste Disposal Authority; Maryland Department of Agriculture; Maryland Department of the Environment; U.S. Environmental Protection Agency; Congressional Research Service; Department of Legislative Services

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