

Legislative Budget and Finance Committee

**A Study Pursuant to HR 149:
Proposed Revisions to Biosolids Permits**

Report Comments by Stephen Fickes, Deputy Executive Director
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Good morning. Madam Chair and members of the Committee. I am pleased to be here to discuss the results of our study pursuant to House Resolution 149 (HR 149). HR149 asked us to review proposed revisions to three general permits, issued by the Department of Environmental Protection (DEP), and which relate to the beneficial use of biosolids and residential septage. Although this topic may seem unpleasant, it is a very real problem for the commonwealth as each Pennsylvania household produces nearly 500 pounds of wastewater solids annually, all of which must be processed and managed.

Understanding the context of the problem and how biosolids are managed is where our report begins. In Pennsylvania, about three quarters of the population relies on a local sewer system for wastewater treatment. The remaining quarter of the population have on-site septic systems, which occasionally require septic haulers to pump and treat the contents from the tank. After treatment, clean water is returned to a water source, while the solids, known as sewage sludge, are further treated for pathogen reduction and stabilization, and then become biosolids.

Biosolids have been used as a beneficial product in land-based applications for decades. In particular, biosolids are a valuable resource in farming operations -- and in an agriculturally prosperous state like Pennsylvania--land application of biosolids presents an opportunity for inexpensive fertilizer to improve crop yields. Conversely, the biosolids dilemma is complicated by concerns over potential risks to public health and the environment. This concern is further

amplified by Pennsylvania's downstream proximity to the Chesapeake Bay and Pennsylvania's need to ensure compliance with the Bay's watershed improvement plan.

Biosolids use falls within the regulatory oversight of federal and state regulators, which can be a confusing and complex interplay. At the federal level, the Environmental Protection Agency (EPA) published "Standards for Use or Disposal of Sewage Sludge," commonly referred to as Part 503, in 1993. Part 503 serves as the comprehensive set of requirements for managing biosolids generated during the municipal wastewater treatment process, including standards regarding specific pollutant levels, quality control criteria for biosolids and land application guidelines.

DEP authorizes land application of biosolids and residential septage with three general permits, which are the focus of HR 149 and this study. While these three permits are similar in structure, each establishes separate criteria that must be met and sets different requirements for when -- and how -- biosolids can be land applied. The permits are distinguished by the type or quality of material. For example, general permit PAG-07, covers the highest quality of biosolids, known as exceptional quality or EQ biosolids. General permit PAG-08 covers a lesser quality biosolid product, known as non-EQ biosolids. Non-EQ biosolids are suitable for land application but have not received the same level of treatment as EQ biosolids. Finally, general permit PAG-09 covers the beneficial use of residential septage by land application.

These three permits were last revised in 2009. The permits were set to expire in 2014 but were administratively extended. Since 2014, the three permits have been administratively extended

nine times either in year or year-and-a-half increments. The permits are currently set to expire on November 30, 2023. DEP has proposed a series of revisions to the permits, but with the adoption of HR 149, we were asked to review the proposed revisions and assess the costs and practicality of the proposed revisions to permit holders, and how those costs may be passed beyond permit holders.

In conducting this study, we obtained and reviewed the proposed drafts and identified four key areas that are either new requirements or significant changes to the biosolids/residential septage land application process. These changes include the following: 1) a prohibition on blending hauled-in waste; 2) a requirement to use a “P-Index” when land applying biosolids to control for excess phosphorus; 3) PFAS monitoring requirements; and 4) changes to storage requirements for biosolids. Of these four proposals, two changes would apply to all three permits, while two changes would affect only PAG-07 and PAG-08 permit holders, which are typically municipal waste authorities.

While each proposal has raised issues and concerns, based on our research, the proposed change that introduces requirements for PFAS chemical testing and a requirement to use a P-Index garnered the most attention. PFAS chemicals – known commonly as “forever chemicals” because of their ability to resist water and sunlight -- do not easily degrade and may be harmful to human health. Pennsylvania has already introduced PFAS limits for drinking water. However, these water standards do not apply to biosolids. In fact, there are no current federal testing requirements, nor limitations on PFAS in biosolids, nor a national standard for testing PFAS in biosolids. Further, the EPA has not completed a risk assessment on PFAS in biosolids

to determine if further federal regulatory action is warranted. This analysis is underway – but the results are not expected to be completed until December 2024.

Concerning the P-Index, DEP proposes factoring phosphorus load levels when applying biosolids. Nitrogen and phosphorus are necessary nutrients for plant growth. However, when applied excessively, these nutrients can be harmful to waterways—particularly the Chesapeake Bay watershed. DEP already regulates nitrogen application levels via an agronomic rate, which specifies levels based on the type of crop or vegetation grown on the land. To factor for phosphorus, DEP proposes the P-Index be used to calculate phosphorus application rates for biosolids. The P-Index is essentially a risk analysis tool that evaluates the consequences of phosphorus loss to surface waters. The P-Index has been an ongoing collaboration and development between the Pennsylvania State University (PSU), the State Conservation Commission (SCC), and USDA’s National Resources Conservation Service (NRCS).

As part of our study, we reviewed other states’ biosolid regulations for comparative purposes. Interestingly, our review found little uniformity in biosolid regulations, especially regarding PFAS and P-Index. Only Maine has a complete ban on the land application of biosolids, which was driven by a PFAS contamination issue. Two states, Michigan, and Wisconsin, have a testing requirement before biosolids can be land applied. Still, most states do not have a testing requirement, including California, which is often considered to be a heavily regulated state for environmental issues.

Moving on to a discussion of compliance costs, HR 149 asked us to determine if permit holders could “practically comply” with DEP’s proposed revisions for PFAS testing -- considering current testing technology. The language in the resolution regarding “practically comply” is an important distinction because while there are several methods that can be used to test for PFAS in biosolids, none have been officially recognized by the EPA or subsequently DEP. As a result, this lack of uniformity in testing protocols presents challenges to DEP and its goal to collect consistent and meaningful data for statewide analysis. The EPA has developed a draft test method, but the final draft and approval is not slated until later this year at the earliest. DEP proposes a testing frequency based on the commonwealth’s existing regulatory requirements for contaminant monitoring, which is based on the tonnage of processed biosolids. Using these existing criteria, we estimate that the cost to permit holders could vary from once a year, at a cost of at least \$900, to more than 12 times per year, with an annual cost of over \$13,000, assuming the draft EPA method is approved. We found these costs are likely to be manageable for larger facilities, but smaller facilities, which are also more rural based, are likely to face a greater impact over the long term as they struggle to improve their facility infrastructure.

Obtaining cost data for this study was difficult. As a result, we surveyed permit holders from a selection of small, medium, and large wastewater treatment facilities from different commonwealth regions. We queried the permittees on DEP’s four key permit changes and tried to calculate cost estimates based on their experience. Our survey results found that DEP’s permit changes will increase implementation costs, but precisely computing these costs is impossible due to the site-specific nature of each facility. For example, costs are influenced by the operation’s size, the facility’s age, the type of wastewater treatment procedures used, storage

capacity, land availability to disperse biosolids, landfill fees, and transportation costs, among other factors. Permit holders expressed their belief that other permit requirements could cost anywhere from a few thousand to several hundred thousand dollars per year, based on the specific needs of the facility. With respect to PAG-09 permit holders, we reviewed proprietary business information from two permit holders and found similarity in their expenses, which gave us confidence in the data they shared. Although this data cannot be extrapolated to all PAG-09 septic haulers, based on data we collected, we found that the proposed changes may result in a cost increase of \$90 - \$150 per septic cleaning.

Our report outlines the complications with DEP's proposed permit changes, principally that there continue to be many unknown conditions, which are particularly problematic to PAG-07 and PAG-08 permit holders, and which will -- in the end -- increase end-user fees. Yet, equally important is DEP's mission to protect the environment and public health, which also must be considered. But these goals need not be mutually exclusive. To be clear, we do not dispute that DEP has the authority to change these general permits. However, we believe an approach that fully engages stakeholders, including legislative oversight, is a more appropriate way to proceed. To that end, we recommend DEP follow the regulatory process and take a more holistic approach to update the underlying regulations governing the beneficial use of biosolids.

In closing, I would like to thank DEP, and the numerous stakeholders and field experts who shared their expertise with us. Additionally, I'd like to highlight the contributions of our staff – specifically, Senior Analyst, Stevi Sprenkle, and analysts Shanika Mitchell -Saint Jean, and Matt Thomas. I'd be happy to answer any questions you may have.