NACWA Suggested Biosolids Land Application Principles and Talking Points – September 2022

What are municipal biosolids? As part of the wastewater treatment process, liquids are separated from solids. The solids are then treated and result in a semisolid product referred to as biosolids. Wastewater agencies nationwide generate nearly 7.2 million dry metric tons of this byproduct annually, which they manage through three primary methods – incineration, landfilling, and land application. Each of these options are critical to utilities across the country, have undergone decades of scientific study, and are governed by a robust set of federal and state regulations to ensure the safety and sustainability of each method.

Land application puts the biosolids that every community generates into productive use, improving sustainability. The majority of biosolids generated across the country are put on farmland for fertilizer, and for important reasons. EPA and many states regulate biosolids land application and past studies have shown that land applying biosolids is safe for the environment. Land application offers multiple benefits including recycling nutrients to improve soil health and vegetative growth, restoring vitality to degraded lands, sequestering carbon, and enhancing the capacity of soil to absorb and hold water.

Biosolids land application also reduces reliance on manufactured chemical fertilizers and pesticides, which ultimately reduces the amount of the hazardous constituents found in chemical fertilizers and pesticides from entering and impacting waterways. In addition to the multiple environmental benefits, biosolids provide a more affordable option for farmers compared to chemical fertilizer.

I am being asked by my Board, the public, the press, and/or farmers if my utility's biosolids are safe for land application. What do I say? Decades of study at the federal and state levels have found land application to be safe, when done in accordance with established regulations.[1] The Environmental Protection Agency (EPA), the U.S. Department of Agriculture (USDA), and the Food and Drug Administration (FDA) all support biosolids land application. Nearly every U.S. state and Canadian province regulates and allows biosolids land application and biosolids have been widely used on farms and other lands across North America for decades.

Many major universities have studied biosolids use on soils and accept the safety of this management practice, finding little risk when used according to regulations.[2] *To date, no findings or determinations by any federal agencies related to PFAS or the presence of PFAS in biosolids have called into question any of the existing studies or regulations that have found land application to be safe*.

What about the recent EPA health advisories for certain PFAS in drinking water, or EPA's action to propose a rule identifying certain PFAS chemicals as a hazardous substance? How do these actions impact biosolids? EPA's recent health advisories for certain PFAS compounds in drinking water are based on an initial, limited scientific understanding of the potential impact of those compounds on humans over a *lifetime* of consuming the chemicals *through drinking water*. There is no scientifically

[1] The U.S. Department of Agriculture (USDA) National Institute of Food and Agriculture published a report in June 2020 (Research Committee W4170) that contains an excellent bibliography with many of the studies completed over the years on land application of biosolids. The report was developed to rebut claims from a U.S. EPA Office of Inspector General Report raising questions about the biosolids program.

NACWA does not suggest that utilities share the USDA report directly with the press or others as it is extremely technical in nature. However, the report does include references to individual studies from the federal government, academics and other entities if utilities are asked about examples of past studies on land application.

[2] See Footnote 1.

defensible way to apply those health advisory levels when evaluating PFAS risk in biosolids nor the levels of PFAS in biosolids. People do not drink biosolids and any comparison between the health advisory levels and quantities of PFAS in biosolids is inappropriate and not scientifically valid. EPA is working on a separate PFAS risk assessment designed specifically for biosolids; this assessment will evaluate any potential risks to human health and the environment due to the presence of PFAS in biosolids. EPA will update its existing regulations, if necessary, when that assessment is done.

Similarly, the EPA rule proposal to classify PFOA and PFOS as hazardous substances under the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) does not fundamentally change the current regulatory environment governing biosolids. The proposal must still undergo rigorous public review and comment, and EPA must then go through an extensive review and response to the public comments before finalizing the rule. EPA has also made clear in its communications around the proposal that the intent of the proposal is not impact the operations of public clean water agencies.[3] Additionally, it is highly unlikely that wastewater treatment plants will release enough PFOA or PFOS (one pound or more over a 24-hour period) to trigger CERCLA's reporting requirements.

Switching away from land application is complicated, facility specific, and creates significant tradeoffs. Before considering any limits on land application, we must consider the potential alternatives. Biosolids cannot be avoided or eliminated; they are produced by human beings using the sewer system 24/7/365 and changing management methods is no easy task given the volume that is produced daily. The three primary management options—land application, landfilling, and incineration—each have tradeoffs that utilities have carefully evaluated before determining which option or combination of options makes the most sense for their community. In many cases, land application has been viewed as the most environmentally responsible option.

For most utilities that are land applying, sending biosolids to a landfill would likely be the next available option. But doing so creates increased demand for landfills. Landfill use also may be constrained by the high liquid content of the biosolids and concerns about landfill stability. Landfills are carefully scrutinizing wastes they receive as they are also under pressure due to PFAS concerns.

Landfills receive PFAS in a wide range of household and commercial wastes, which will enter landfill leachate that may ultimately get sent back to wastewater treatment plants – so landfilling biosolids (or any product) does not eliminate the potential problem. There are also concerns, in some cases, over where landfills are located, including potential impacts on environmental justice communities and the impacts of emissions and hauling-related nuisances.

Reliance on sewage sludge incineration is a limited option given the decline in overall sewage sludge incinerator capacity because of rising operational costs due to increasing pollution control requirements and local opposition to the siting of new incinerator units. There is also uncertainty about the fate of PFAS through incineration and concern that PFAS may not be completely destroyed but rather transported into surrounding communities through air emissions.

[3] EPA noted in its press release announcing the rule that it is "committed to doing further outreach and engagement to hear from impacted communities, wastewater utilities, businesses, farmers and other parties during the consideration of the proposed rule."

Regulatory actions need to be practical and focused on reducing risk. PFAS is not the first chemical class to raise biosolids concerns. EPA is required to regularly assesses biosolids pollutant trends and is mandated by law to identify new pollutants present in biosolids. EPA studies the pollutants to understand their fate and transport and potential risk to public health and the environment. If risk is found from biosolids, EPA starts a process to regulate and set standards.

Work at EPA to conduct a risk assessment for PFAS in biosolids is underway and should be complete by 2024. If EPA determines that the risk from PFAS warrants additional regulation of biosolids, clean water utilities will do their part to meet those new standards.

However, EPA initiating a risk assessment does not mean that a risk will be found. For example, EPA has studied many chemicals, including dioxins and furans, which are toxic to public health. But the low levels found in biosolids, combined with limited exposure, has shown that there is no need for regulatory standards.[4] This science-driven process must also play out around action on PFAS; and in doing so, will improve confidence related to biosolids safety.

Utilities are partners in reducing PFAS. Clean water agencies do not manufacture or create PFAS. Clean water agencies exist to protect public health and the environment. While clean water agencies cannot control what they receive, through tools such as the Clean Water Act (CWA) pretreatment program they can work with industries in their service area to limit pollutants being disposed of in their wastewater systems. This includes using the pretreatment program to limit discharges of PFAS to the sewer system.

Critically, however, pretreatment controls can only address concentrated and known industrial or commercial sources. Clean water utilities do not have authority to control or reduce sources of PFAS from homes and many businesses. And because PFAS are ubiquitous in the environment and found in virtually every home and residential waste stream, industrial controls alone cannot eliminate PFAS entering our water systems. This may put utilities in an impossible situation if extremely low levels, even below the levels of detection, are set by EPA or states as actionable levels.

Manufacturers should have ultimate responsibility and accountability and polluters should pay. Actions to address PFAS, including changes to biosolids management, can be extremely costly for communities. This is due to the ubiquity of PFAS after its decades of commercial use, the technical challenges of treating chemicals *designed* for indestructability, and the extremely low levels (part per trillion) being found to potentially pose health risks in drinking water. Those who manufactured these chemicals should be responsible for any needed remediation and the ultimate transition away from PFAS use. Public water and sewer utilities and their customers should not bear the potentially staggering costs of cleanup.

Controlling PFAS will require producers and distributers of the chemicals to reduce or eliminate their continued use in everyday products and industrial processes. Reducing or eliminating PFAS in clean water systems while the pollutants are still being widely used in commerce is a losing battle and an inefficient use of resources. The clean water sector supports source reduction and pollution prevention for PFAS, just as it has with other chemicals in the past.

Controlling and reducing the prevalence of PFAS that are of known significant concern must be addressed through federal laws and regulations that prevent their manufacture and use in commerce

[4] https://www.epa.gov/biosolids/dioxins-sewage-sludge

and/or their release to the environment. Absent any coordinated, comprehensive action to substantially curb the manufacture, use, and disposal of PFAS, states and communities will still have a PFAS problem regardless of steps taken to control biosolids.

FOR UTILITIES CURRENTLY SAMPLING OR DOING SOURCE IDENTIFICATION FOR PFAS - Clean water utilities are committed to better understanding how PFAS may be entering their wastewater treatment systems. In advance of EPA standards, many utilities and some states have begun proactively studying and assessing PFAS coming into their systems via wastewater streams, leaving in effluent or residuals, and throughout the watershed. In some cases, the data and information are helping point to concentrated sources of PFAS such as industrial users that can be targeted for source reductions. At the same time, the data show the ubiquity of PFAS across the environment at low levels due to everyday domestic use of the chemicals, underscoring the importance of new federal and/or state controls on how and when these chemicals are used.