



SIERRA CLUB

TENNESSEE CHAPTER

September 18, 2024

Via electronic mail to John.Newberry@tn.gov

Tennessee Department of Environment and Conservation
Division of Water Resources
Attn: John Newberry
500 James Robertson Parkway
Nashville, Tennessee 37243-1102

**RE: Comments on draft of Permit Number TNB000000
General State Operation Permit For The Land Application Of Non-Exceptional Quality
Biosolids**

Dear Mr. Newberry:

The Sierra Club, Tennessee Chapter submits these comments on draft General State Operation Permit for the Land Application of Non-Exceptional Quality Biosolids Permit Number TNB000000.

The permit requires no testing or monitoring for per and poly alkyl substances (PFAS) in the biosolids and no restrictions on the application of biosolids when they do contain PFAS. Recent testing we have conducted in Northeast Tennessee indicates that the land application of PFAS contaminated biosolids is resulting in significant contamination of the land and waters of Tennessee. These land applications are not confined to the property where the biosolids are applied, but can contaminate ground and surface waters. Additionally, the land application impairs the land for future use through the durable and persistent nature of PFAS. With no public records of the concentrations of PFAS in the applied biosolids, subsequent purchasers have no way of evaluating their risks in purchasing the land.

Exposure to PFAS is associated with health impacts to humans, livestock, and wildlife. As the body of knowledge around these impacts grows, the severity of these impacts is resulting in regulation to minimize and reduce exposure. In 2024, the U.S. Environmental Protection Agency (EPA) implemented an enforceable national drinking water standard for six PFAS compounds. As part of these standards, the EPA also established Maximum Contaminant Goal Levels (MCGL) of zero for PFOA and PFOS, two of the most studied PFAS. MCGLs of zero should be interpreted as there is no level where there are no associated adverse risks from exposure.

Land application of biosolids is not a beneficial use when the biosolids are laden with toxic “forever” chemicals. Preventing contamination by persistent toxic contaminants is a prerequisite for beneficial use.

I. PFAS contaminated influent will contaminate the biosolids.

When a wastewater treatment plant (WWTP) receives PFAS contaminated influent, the PFAS will partition between the plant’s effluent and the biosolids as the typical treatment plant treatment process does not destroy PFAS compounds. In addition, the treatment of biosolids prior to land application does not destroy PFAS compounds.

Landfills are known dischargers of PFAS contaminated leachate as a result of the multitude of products containing PFAS that are disposed of in landfills, both municipal and construction and demolition. Leachate is commonly treated by wastewater treatment plants. Many industrial dischargers to wastewater treatment plants use PFAS in their manufacturing processes. When they discharge PFAS contaminated wastewater, the PFAS load in the WWTP increases.

Our testing of biosolids and soils (attached) from the Bristol TN/VA WWTP found extremely high levels of PFAS.

TDEC should prohibit the land application of biosolids when they contain PFAS.

II. Biosolids should not be applied in a manner such that contaminants enter a wetland or other waters of the State of Tennessee.

The permit must be protective of the waters of Tennessee by preventing toxic contaminants from entering the waters. PFAS are toxic contaminants. PFAS are synthetic substances not found in nature. The EPA has established drinking water standards for six PFAS, including establishing maximum contaminant goal levels (MCGL) equal to zero for PFOA and PFOS. These MCGLs of zero should be interpreted as there are no safe levels at which there is no associated risk. In addition, the EPA has listed PFOA and PFOS as hazardous substances under CERCLA. A number of PFAS are known to bioaccumulate in tissues of livestock and wildlife. As such, it should be understood that PFAS are contaminants that should not be in the waters of the State of Tennessee.

Currently, no testing of the produced biosolids is required. Without comprehensive knowledge of the PFAS contaminant levels in biosolids, it is impossible to know the extent of the contamination that has occurred and will occur through the continued land application of PFAS laden biosolids.

Tennessee currently requires testing for PCBs and TCLP. These requirements are beyond those required by federal rules. As such TDEC may require testing of biosolids for PFAS.

Some PFAS compounds are significantly soluble in water and mobile in the environment. The draft permit requires that biosolids should not be applied when heavy precipitation is anticipated to result in standing water or if the anticipated groundwater reaches the surface following the application. The solubility of some PFAS compounds means that the condition that groundwater reaching the surface is not necessary for PFAS to leach into the groundwater. In

addition, water collecting in a depression or swale may establish a connection to groundwater. Additionally, mobile PFAS compounds may simply be transported in runoff.

Our testing demonstrates that the land application of biosolids is contaminating waters of Tennessee. In particular, Thomas Creek in Sullivan County has been shown to be contaminated by PFAS where there are no known sources other than land application of biosolids. Thomas Creek flows into the South Fork of the Holston River.

The EPA issued its final version of method 1633 for 40 PFAS compounds in non-potable water, soils, biosolids and landfill leachate in January 2024.

The Water-Quality setbacks in Section 3.2.1 are insufficient to protect ground and surface waters from PFAS contamination.

TDEC should establish sufficient criteria to ensure that the waters of the State of Tennessee are not contaminated by PFAS through the land application of biosolids.

Monitoring for PFAS in the biosolids should be conducted at least annually using EPA method 1633 or other appropriate draft or final EPA methods that more accurately quantify the concentration levels of PFAS. The results of all testing for PFAS must be available to the public.

TDEC should require testing of potentially impacted ground and surface waters prior to issuance of a notice of coverage to establish a baseline as well as regular monitoring.

III. TDEC must establish PFAS limits in biosolids

PFAS consists of a class of thousands of different compounds. Those that have been studied, have been found to be toxic. Many of those PFAS that have not been studied transform into known toxic PFAS compounds that persist in the environment.

Many of these toxic PFAS are found in biosolids. The continued land application of these contaminated biosolids results in essentially permanent contamination of soils to which they are applied.

The EPA has established MCGLs of zero for PFOA and PFOS in drinking water. These compounds are commonly found in biosolids.

TDEC should establish defensible and protective limits for PFAS in biosolids based on the established 2024 EPA MCGLs.

IV. TDEC has the authority to require individual permits

TDEC has the authority to require individual permits based on the characteristics of the biosolids or the sites. The composition of PFAS in biosolids is expected to vary significantly based upon the sources discharging to the WWTP.

TDEC should require individual permits whenever PFAS is detected in the biosolids.

In the case of exceptional quality biosolids, the presence of PFAS should cause the revocation of exceptional quality status such that the disposition of the biosolids is controlled.

V. The public receives no notice of the land application of PFAS contaminated biosolids

Currently, no public notice is given when new application sites are approved. No public notice is provided when Notices of Intent are submitted. As such, there is no opportunity for oversight by the public. Yet, adjacent landowners and the public are impacted by the land application of biosolids.

TDEC should provide notice to the public when a notice of intent is submitted and allow public comment prior to issuing a notice of coverage authorizing land application.

VI. Landowners allowing biosolids to be applied to their land need to know the risks

The land application of biosolids containing PFAS to lands carries long term risks to the health of the land as well as ground and surface waters. Landowners are not uniformly knowledgeable about the associated risks of loss of utility of the land and depreciated land values.

WWTPs and biosolids applicators must be required to notify landowners of the long term risks associated with the land application of biosolids containing PFAS. Landowners with current NOCs for land application should be notified of the risks associated with continued land application.

VII. Public data regarding land application sites is incomplete and difficult to obtain

The inclusion of land applications sites are not uniformly included in the Division of Water Resources dataviewer and not included in the active permit features GIS data. For example, land applications for Warren County are only included in reports of the Moccasin Bend WWTP and not in the active permit features dataset. Even these reports are not uniformly available in the dataviewer, with many missing.

TDEC should ensure that all reports and permit data related to the land application of biosolids is readily and timely available to the public.

VIII. Oversight of land application activities is inadequate

Failure to manage biosolids correctly can result in contamination of land, water, livestock and crops. Repeatedly, incidents of improper storage and application occur putting neighbors and natural resources at risk. Repeated notices of violation fail to prevent future occurrences.

TDEC should provide greater oversight and enforcement of the land application of biosolids.

Sincerely,

Daniel Firth
Sierra Club, Tennessee Chapter
Chair, Solid Waste and Mining Committee