

June 25, 2019

Gerald D. Reid, Commissioner
Maine Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017

Re: Land Application of Sludge and Compost in Exceedance of PFAS Standards

Dear Commissioner Reid:

We are concerned that the Department's plan to allow PFAS contaminated sludge and compost to be land applied clearly fails to protect public health and the environment, and fails to satisfy the standards and licensing criteria set out in the Department's rules, including Chapters 400, 418 and 419. For the reasons discussed in more detail below, we urge the state to immediately halt the land application of all sludge and compost in exceedance of the Chapter 418 standards. We also seek additional clarifications about the state's implementation of this process, as further outlined below.

We read with great concern the article recently published by Sharon Lerner in *The Intercept*ⁱ which quoted Remediation and Waste Management Bureau Director David Burns in saying that some sludge in exceedance of the PFAS limits set by Chapter 418 has been allowed to be spread. In conversations with you and your staff, we understand that such spreading is being authorized on the basis that the mix of the contaminated sludge and existing soil is modeled to not exceed a PFAS standard. Specifically, it is our understanding that the sludge applicator must test a field prior to application for PFAS, and the state will model the result of the addition of the contaminated sludge to the existing contamination level of the field. If the resulting total contamination is below the state's standard, the spreading may proceed. Further, it is our understanding that compost may be used in unlimited quantities in any location if it fails to raise "average" soil PFAS levels at some unstated rate of application above the standard.

We ask that you please confirm or correct our understanding of DEP's current practices and share with us any written guidance that document this policy and the basis for this policy.

Standards are Inadequately Protective

It is clear to us that Maine is using outdated science in making its determination of screening values and is far behind other states that are aggressively moving forward to incorporate the latest findings in their regulatory action limits. As Dr. Andy Smith of the Maine CDC presented at the May 22 PFAS Task Forceⁱⁱ meeting, underlying all of Maine's standards, be they based on avoiding groundwater contamination or direct human exposure, is the assumption of a safe dose of PFAS based on outdated and heavily criticized EPA analyses. More recent federal analyses, including ATSDR's draft reviewⁱⁱⁱ from a year ago, have suggested a safety level approximately ten times lower than EPA's. Indeed, nearly every state that has independently reviewed the data, as well as many international governmental bodies including the European Food Safety Agency, have calculated a "safe" dose far lower than EPA's. Recently, the director of the National Institute of Environmental Health Sciences suggested that, based on the recent research, the safe doses are more likely nearly one thousand times lower than EPA's value.^{iv}

Additionally, as Dr. Smith highlighted in his presentation, the current screening standards are based upon the presumption that the contamination of groundwater with PFAS is the most sensitive pathway of exposure to PFAS contaminated sludge. However, his work in progress to evaluate the agronomic impacts of PFAS suggest that the soil to hay to cow to milk pathway may actually be more sensitive for PFOS. A lower value would be required to provide protection for this pathway. Other food pathways and pathways for PFAS other than PFOS do not appear to have been thoroughly evaluated.

The permission to apply the contaminated sludge is also based upon the independent comparison of the concentrations of three specific PFAS compounds to their respective standard. The combined presence of multiple PFAS and their additive impact on health and the environment is not being considered in DEP's calculations. Yet, even the US EPA's outdated standard considers the combined risk of PFOA and PFOS. Additionally, our understanding, seemingly confirmed by the Lerner article, is that DEP has testing results for PFAS in the sludge for compounds not explicitly given standards in Chapter 418. These other PFAS are contributing risk, and their known presence must be factored into any decision to authorize the use of the sludge. Even if DEP is focused only on the three PFAS identified in Chapter 418, it is well established that there are a number of PFAS compounds which can degrade in the environment to PFOA and PFOS. If these precursors, such as 8:2 FTS, are present in the sludge, it is probable that they will break down into the target PFAS over time (PFOA in this example.) This would ultimately increase the soil burden of the measured PFAS, yet this additional contribution is not being considered by DEP.

The direction of researchers and other states is unequivocally moving towards stricter regulation and lower safety thresholds for both the PFAS identified in Chapter 418 as well as the class as a whole. Given their extreme persistence in the environment and the extreme difficulty and cost of removing them once introduced, it is only logical to use the utmost concern and margin for safety when knowingly and deliberately releasing additional PFAS into the environment, and especially onto agricultural land. Based even on the readily available science today, let alone the research likely to be released in a few short years, it is likely the "safe" levels need to be substantially lower and DEP and the sludge producers are likely to be facing expensive clean-ups and lawsuits as a result of knowingly spreading PFAS contaminated sludge and compost on agricultural land.

Data to Drive Modeling is Inadequate

Even if the standard the state is using was health protective, the methodology used by the state to model the PFAS levels in soil following sludge application lacks sufficient scientific rigor to be relied upon. The state appears to be relying on, in most cases, a single measurement of PFAS in sludge upon which to assess its level of contamination. The very definition of scientific method calls for repeated measurement, and it is statistically impossible to draw meaningful conclusions on a sample size of one. To our knowledge, the distribution of PFAS levels in sludge and compost and its variation over time from a single producer has not been well characterized. Similarly, it is not clear to us the sampling protocol the state is requiring of fields to determine "baseline" levels prior to authorizing application. Hopefully, unlike the sludge, the state is requiring more than a single sample and robustly assessing the potential contamination of the existing field in a scientifically rigorous way, and we are anxious to learn the details.

Giving a "Free Pass" to Compost is Unjustified

Our understanding from discussions with DEP staff is that the state is intending to allow contaminated compost to be utilized based on a calculation of its contribution to PFAS levels in "average" soil since the

destination of compost is unregulated and unknown. This is extremely concerning since there also appear to be no regulatory limits or control on the amount of compost that may be utilized. We have previously asked for, and have yet to hear from your staff, the assumptions the state uses on the loading rate of compost in making these calculations, but given the completely unregulated nature of the product, one must assume the potential for very high application rates from a poorly trained or ignorant user. It is also not unreasonable to anticipate that many compost customers are repeat customers, using the product from the same source again and again, as that is extremely common in all business relationships. That may mean that the average compost customer, who has been frequenting the same contaminated supplier of compost for many years, may actually have soil levels substantially higher than the “average” level.

While we remain interested in learning more about the state’s modeling assumptions and the details on field sampling protocol, fundamentally, we do not see how the state can reasonably protect the public health and environment by basing all decisions to spread material that has been found to be contaminated without rigorously and completely characterizing the extent of that contamination and the full risk it may pose if applied to a particular site.

Process for Addressing High Levels in Fields

If the Department is requiring sludge producers to test fields prior to application of the contaminated sludge, how is the Department going to address fields found to already be contaminated? While we fully support testing for PFAS contamination, since this testing is being driven by the sludge producers who have a vested interest in not raising alarm rather than the state, there must be clear and enforceable standards to report and respond to identified contamination. If a field is found through this process to be contaminated, the solution cannot simply be to not add additional contamination to it by not allowing additional spreading. In addition to notifying the landowner and neighbors, the Department should, at a minimum, have procedures in place to further investigate and document the extent of the contamination, sample ground and surface waters, and ensure and agricultural products produced on the fields are tested.

Ensuring Public Access to Information and Informed Consent of Landowners

On behalf of the Department, you have regularly committed to making information about PFAS contamination and sludge applications public and readily available. Unfortunately, the Department has not lived up to this commitment. The fact that the easiest source of information to the public on the sludge testing results remains the website of The Intercept, which posted the Department’s spreadsheets, rather than the Department’s own website is indicative of the problem. Additionally, while the Lerner article quotes David Burns in saying that application has been allowed, DEP has not identified details on permitted applications, including such critical information as the “baseline” results of the fields that are critical to understanding the department’s decision making process.

In order to honor your own commitments, we ask that the Department immediately make available on its website, in real time as received, ALL testing results and permitting decisions.


Additionally, we urge the Department to clarify what information and level of detail is being provided to landowners receiving sludge and customers purchasing contaminated compost. Are landowners being explicitly informed of the PFAS levels in the sludge and their existing “baseline,” or are they simply being told “it’s safe?” Is the “forever” nature of the PFAS being clearly explained, along with the fact that the

State's standards are, at least by some very reputable expert opinion, a thousand times too high? Although the beneficial reuse provisions clearly provide for notification to neighbors and to towns, has this notification been modified to include the fact that the sludge to be applied is known to be contaminated? How has the Department required the compost companies to disclose the presence of the PFAS contamination to their customers since the application of it is otherwise unrestricted?

We find it hard to believe that any prudent landowner who is educated on the constituents of the sludge, the long term potential impacts and liability, and minimal basis in science for both the State's screening standards and modeling, would ever accept the contaminated sludge or compost. The state has a clear moral and ethical, if not legal obligation, to make sure those accepting this knowingly contaminated sludge and compost at least have ready access to the relevant information and are not just blindly operating on vague assurances.

Thank you for your consideration, and we look forward to your written response, as well as an opportunity to discuss these issues with you further. You can reach us at the e-mail addresses below.

Sincerely,



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CC: Melanie Loyzim, Deputy Commissioner, DEP
David Burns, Remediation and Waste Management Bureau Director, DEP

ⁱ Lerner, Sharon. "Toxic PFAS Chemicals Found in Maine Farms Fertilized With Sewage Sludge." *The Intercept*. June 7, 2019. Available at: <https://theintercept.com/2019/06/07/pfas-chemicals-maine-sludge/>

ⁱⁱ Available at: <https://www.maine.gov/pfastaskforce/materials/20190522/MeCDC%20PFAS%20Task%20Force%20Tox%20Overview.pdf>

ⁱⁱⁱ Available at: <https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf>

^{iv} As referenced in: Lerner, Sharon. "Teflon Toxin Safety Level Should Be 700 Times Lower Than Current EPA Guideline." *The Intercept*. June 18, 2019. Available at: <https://theintercept.com/2019/06/18/pfoa-pfas-teflon-epa-limit/>