

I am pleased this morning to provide testimony on behalf of House Bill 375. Let me begin by forwarding a hearty “thank you” to the Chair and the individual members of the committee for the opportunity to speak on behalf of the issues raised by H.375 and also express my sincere appreciation for the dedicated work of Rep. Teo Zagar, the legislator for whom the existing bill owes its impetus.

By now, you’ve hopefully had a chance to review some of the prerecorded testimony that I’ve previously submitted which includes my own testimony and the testimony I’ve collected from others who are similarly engaged in the sustainable sanitation sector. If not, let me reintroduce myself. My name is Kai Mikkel Førlie and I am the principle founder of Vermonters Against Toxic Sludge, a grassroots community group organized to oppose the land application of toxic sewage sludge and also to advocate on behalf of sustainable alternatives to our legacy sanitation systems.

As for my testimony today, I will touch on two topics. First, I will provide additional detail regarding who exactly has jurisdiction to regulate the byproducts of an ecological toilet. And, second, I will address what I feel is a major shortcoming of our existing rules.

Who has Jurisdiction?

The question of who has jurisdiction over the byproduct(s) of an ecological toilet is of critical importance. After all if you don’t think you have the standing to legislate this technology or the material(s) it produces than it’s rather pointless to consider this bill. Moreover, if residents of the state believe that they will be held to the same requirements as, say, a municipal wastewater treatment plant, than there’s a high likelihood that few will seek to adopt this technology.

Now, it’s my understanding that you’ve already taken testimony from the Department of Environmental Conservation (“DEC”). And while I am not aware of who spoke on behalf of the department or what they spoke about, I do want to address the DEC’s take on this particular subject.

According to a Watershed Management Division document which was published in June of last year titled “Composting Toilets Guidance Document”:

“Disposal of composting toilet waste...is subject to the requirements of Federal regulation under 40 CFR Part 503 and the [sic] Vermont’s Solid Waste Management Rules, with no exemption provided.”¹

While this document does a decent job of addressing the jurisdictional issues, I’m afraid that it doesn’t explain the basis for why the state is able to permit as it currently does a disposal option, in this case shallow burial, which seems to run contrary to 40 CFR Part 503 - the latter known in sanitation circles and hereafter in my presentation as the “503 Rule”.

And you should know that this issue comes up frequently in similar discussions. During my own research I uncovered several examples that bear this out.

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The first is the response I received when I asked a very prominent New England sustainable sanitation practitioner for their take on the issue. According to this particular individual, the EPA's jurisdiction begins and ends at the characterization of this material as "fertilizer". In other words, never refer to it as fertilizer and you'll never fall prey to the 503 Rule. But, on the other hand, call it "fertilizer" and your obligations to federal law commence. And this individual's understanding is based on what they've been told for years by a senior EPA official.

The second relates to an EPA document titled "Water Efficiency Technology Fact Sheet: Composting Toilets" which states that the byproducts of a composting toilet:

*"...must be either buried or removed by a licensed septage hauler in accordance with state and local regulations."*²

Notice there's no mention at all of the 503 Rule nor of the extensive testing and monitoring requirements mandated therein. And this document was published long after the 503 Rule first took effect and still stands as the definitive EPA document on the subject.

The third is Vermont's own existing rules governing the management of this material. §1-922(b) of the "Wastewater System and Potable Water Supply Rules" mandates that:

*"The waste material (of an ecological toilet) shall be disposed of...by shallow burial in a location approved by the Agency that meets the minimum site conditions given in section 1-805 of these Rules."*³ [I added the "of an ecological toilet" phrase for clarity.]

I'll come back to what the "minimum site conditions" are that are alluded to in the latter part of that sentence. But, for now, just notice that when it comes to shallow burial there's again no mention at all of the strict requirements that are mandated by the 503 Rule, a regulation that normally would only permit disposal by shallow burial were the aforementioned host of prerequisites met. And, adding to the confusion, later in this same document the DEC takes pains to differentiate what it calls "Direct Land Application" from what it likewise calls "Indirect Land Application"; the former relating to the 503 Rule and the latter referring to the light-on-regulation option of onsite burial. But a search of the relevant literature and applicable state and federal regulations fails to produce any mention anywhere else of such a distinction. In other words, DEC seems to be the only entity explicitly making it. So, I get the feeling that whoever wrote it struggled with the same question.

Fourth, Vermont is not alone in permitting shallow burial. The non-conforming (at least in terms of the 503 Rule) practice of shallow burial is materially consistent with many of the other states in this country that have rules on the books governing the management of the byproducts of an ecological toilet. For instance:

- *The Commonwealth of Massachusetts requires that "residuals from the [composting toilet] system must be buried on-site and covered with a minimum of six inches of clean compacted soil".*⁴

- *In Oregon the applicable regulations state that "humus from composting toilets may be used around ornamental shrubs, flowers, trees, or fruit trees and shall be buried under at least twelve inches of soil cover."⁵*
- *Rhode Island, meanwhile, acknowledges that, "solids produced by alternative toilets may be buried on site," but specifies that, "residuals shall not be applied to food crops."⁶*
- *Likewise, the Department of Health of the Commonwealth of Virginia requires that, "all materials removed from a composting privy shall be buried," and that, "compost material shall not be placed in vegetable gardens or on the ground surface."⁷*

Again, none of the above makes any mention of the 503 Rule nor do any so much as remind users of any obligations they may have thereunder.

And fifth, and perhaps most confusingly, the organizing body that's behind both the Uniform Plumbing Code and the Uniform Mechanical Code (the organization that's known as the International Association of Plumbing and Mechanical Officials - "IAPMO" for short) – the codes that also, I might add, most states west of the Mississippi adhere to – is set to publish the latest edition of its "Green Plumbing and Mechanical Code Supplement" which will permit the byproduct(s) of an ecological toilet to be disposed of on the surface of the ground as long as the material is covered by a layer of woodchips. While I am encouraged by this progress I have to likewise question the basis behind such a ruling.

So, if DEC is correct when it states that the 503 Rule governs one of the two disposal options it offers, than how is that a variety of states (including Vermont itself!), the EPA and a national code body all permit activities that seem to contradict federal law? That's a question that we'll need to the answer to moving forward. And while I happen to be a fan of the far more user-friendly option of shallow burial (or, better yet, surface application with a covering of woodchips) I do want to address the potential that exists to improve upon the existing option of onsite burial.

A Major Shortcoming.

I promised earlier in my testimony to return to the reference included in the existing rules to "minimum site conditions" that are required in order to bury the materials removed from an ecological toilet. Well, put simply, these "minimum conditions" are that the parcel meets the criteria for a septic system leachfield (in other words, that the land has successfully passed a perc test) and that burial of this material be specifically permitted under the site's water/wastewater permit. It is my feeling that two requirements together represent a major shortcoming of the rules as they currently exist. And so, apparently, does DEC. After all numerous exemptions to both of these requirements exist, including one granted to operators like the Green Mountain Club which allows them to spread this material directly on the forest floor, again seemingly in direct violation of the 503 Rule (were it to actually apply). So, harking back to Part One of my testimony, I have to ask the following: if it's ok for GMC – with the express approval of the State of Vermont – to seemingly violate federal law, than what basis does DEC have to insist that when it comes to "Direct Land Application" that federal law applies? The contradiction is stark

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for me so it's no doubt confusing for those not wrapped up in these issues who might also be interested in adopting this technology.

I should point out too that Vermont is firmly in the minority of states that require a perc test as a condition of burial of the byproducts of an ecological toilet. Most other states place no such requirement on eco-toilet users. And, if you think about it, this one requirement alone serves to prevent anyone in Vermont who happens to live on a parcel served by a sewer system (which describes perhaps the majority of people who reside in the state) from engaging in this practice; which is something that raises a huge barrier to widespread acceptance of eco-toilet technology. How-so you might ask? Well, by eliminating a large group of people's ability to manage this material themselves and absent as we are in the state of any private sector structure that could otherwise support sewer-connected households in their desire to sustainably utilize this material – namely, by providing a curbside collection system similar to how curbside recycling takes place today and an end-use that corresponds with people's sustainability desires – the state has effectively eliminated what is for many one of the major drivers for wanting to take advantage of these systems in the first place – in other words, contributing to something sustainable. You see, the dilemma of the current rule is this: why should I adopt an ecological toilet if, in reality, I'm just going to go on contributing to the broken system that I'm trying to overcome? The takeaway here is that we need more flexibility in how we manage these materials than we currently have. And, getting back to the matter of 40 CFR Part 503 (a.k.a "the 503 Rule"), we need to clarify for once and for all whether households that wish to make use of eco-toilet technology are obligated under the federal rules that govern sewage sludge or not.

It is my therefore my hope that the final iteration of H.375 does away with the current site restrictions and in their place implements some sort of reporting and/or certification system, perhaps something similar to what exists in parallel with the eco-toilet incentive program underway in Falmouth, Massachusetts (an innovative program that you will hear more about later this morning in other testimony). This would, I suspect, address the reason behind the DEC's current site restrictions and would also open the door for more adopters of this vital technology.

So, let me end by saying the following: I am going to assume that everyone in this room is aware of the fact that we can't keep doing business the same way when it comes to defending water quality, and in particular, when it comes to how we manage human excreta. Well, if that's true, then moving forward, Vermonters of all walks of life will need the support of this governing body. And, moreover, this governing body will itself need to adopt innovative solutions like safe and low-cost ecological toilets and their sister technology, greywater systems, while also facilitating local entrepreneurs to likewise create the structures under which these systems can be supported and prosper. Make no mistake, this work will go a long way toward eliminating a not-unsubstantial portion of our state's water quality problems; specifically those which are created by our outdated and antiquarian reliance on flush toilets and their associated legacy wastewater systems.

Thank you for your time and I'm happy to do my best in answering any questions you might have.

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¹ ["Composting Toilets Guidance Document"](#). *Agency of Natural Resources - Department of Environmental Conservation - Watershed Management Division*. June 2014. Retrieved 6 May 2015.

² EPA 832-F-99-066, September 1999. ["Water Efficiency Technology Fact Sheet Composting Toilets"](#) (PDF). *United States Environmental Protection Agency*. Office of Water. Retrieved 6 May 2015.

³ State of Vermont. ["Environmental Protection Rules: Chapter 1 - Wastewater System and Potable Water Supply Rules"](#). *Agency of Natural Resources - Department of Environmental Conservation - Wastewater Management Division*. Effective September 29, 2007. Retrieved 6 May 2015.

⁴ Commonwealth of Massachusetts. ["Regulatory Provisions for Composting Toilets and Greywater Systems"](#). *The Official Website of the Executive Office of Energy and Environmental Affairs*. Retrieved 6 May 2015.

⁵ Department of Consumer and Business Services, Building Codes Division, Division 770. ["Plumbing product approvals 918-770-0050"](#). *Oregon Secretary of State*. Oregon Administrative Rules. Retrieved 6 May 2015.

⁶ ["Rules Establishing Minimum Standards Relating to Location, Design, Construction and Maintenance of Onsite Wastewater Treatment Systems"](#) (PDF). *State of Rhode Island and Providence Plantations Department of Environmental Management Office of Water Resources*. Retrieved 6 May 2015.

⁷ 12 VAC 5-610-10 et seq., March 14, 2014. ["Sewage handling and disposal regulations"](#) (PDF). *Virginia Department of Health*. Retrieved 6 May 2015.

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