

To: [peter.lyon@ecy.wa.gov](mailto:peter.lyon@ecy.wa.gov)

Subject: Fire Mountain Farm (FMF) Application for Biosolid Application in Yelm, WA

Public Hearing on DNS issued 12/17/2018 - Supplement to Comments

My name is Mike Wright. I attended the Public Meeting and Hearing hosted by your office on January 24, 2019. I listened to the presentations by DOE staff and the applicant. I listened to the informal Q&A. I was the first speaker to address the Hearing Officer and I incorporate those recorded statements by reference herein. After my three minutes of remarks, I submitted two documents to the Hearing Officer. For convenience, I append those two documents as Exhibits 1 and 2 to these supplemental comments.

Exhibit 1. Critical Aquifer Recharge Area

Exhibit 1 is an aerial view from Thurston County Geodata that approximates the vicinity map as provided in the FMF Site Specific Land Application Plan (SSLAP) permit application package available on your DOE web site. Exhibit 1 also shows two overlay maps of the same vicinity retrieved from Thurston County Geodata which depict the Critical Aquifer Recharge Area (CARA) and the CARA Agricultural overlay classifications. As you can see from those two maps, much of the applicant's SSLAP permit application land area is a designated CARA and CARA Agricultural. The applicant's Amended SEPA Checklist 12/14/2018 Version lacks this material disclosure. The SSLAP does not mention the CARA issue.

In a telephone call with me last week, Laurie Morgan of DOE's Water Quality Program confirmed that counties are the responsible jurisdictions for the CARA classifications.

**The DNS must be withdrawn. Either the applicant's permit should be denied, or a full EIS should be required which should include a hydrological study of the CARA supervised by the Thurston County hydrologist. WAC 197-11-340(3)(a)(ii) and (iii).**

Exhibit 2. EPA Office of Inspector General (OIG) Report  
No. 19-P-0002 11/15/2018

Exhibit 2 is the cover of the report and pages 31 and 32, Status of Recommendations. The full title of the report is noteworthy: *Cleaning up and revitalizing land: EPA Unable to Assess the Impact of Hundreds of Unregulated Pollutants in Land-Applied Biosolids on Human Health and the Environment.*

I highlighted elements of the Status of Recommendations pages for emphasis. While I could write at length on all the highlights, I want to draw your attention to Recommendation 4. A careful reading of Recommendation 4 shows that EPA has only agreed to come up with a *plan* by 12/31/22. EPA has *not* agreed to finalize safety recommendations nor has EPA agreed to promulgate regulations regarding the 352 identified pollutants in biosolids.

As you can see from Recommendations 9-11 and 13, EPA is unwilling to resolve the misrepresentations to the public or to improve knowledge transfer to state biosolids program managers.

Binding case law is clear that **environmental harm is often irreparable. See for example *Save Our Sonoran, Inc. v. Flowers*, 408 F.3d 1113, 1124 (9th Cir. 2005).**

### Exhibit 3. EPA OIG Report No. 19-P-0002 Appendix C

Among other items, Exhibit 3 lists 35 of 126 hazardous priority pollutants that the EPA regulates under the Clean Water Act. It makes no sense whatsoever to separate sludge from wastewater at a treatment plant so that the water can be safely discharged and then put biosolids on land that is a CARA thus jeopardizing surface waters and the aquifer. The potential for irreparable environmental harm to the ground and surface waters proximate to the applicant's site cannot wait until long after 12/31/22 for EPA to promulgate new regulations. If the 35 listed pollutants are known to be found in biosolids, and the biosolids created by DOE-permitted generators are not being tested for those known priority pollutants, then this site is not appropriate for biosolids land application due to its CARA status, proximity to surface waters, and proximity to the Nisqually River which has recently been further protected by DOE's Nisqually River Watershed Plan under the *Hirst* decision.

The DNS was issued by your office on 12/17/18. It is possible you were not aware of the significant new information contained in the OIG report issued the prior month.

In addition, at the public meeting in Yelm on January 24, 2019, during the staff and applicant presentation portion of the agenda, representations were made to the audience that biosolids are 99 percent organic matter, mineral material such as silt and clay, nitrogen, phosphorus and beneficial trace minerals. These comments were clearly designed to calm any nervous members of the public who may not have been familiar with biosolids. Although there were several DOE professional staff members present, none of them spoke to correct this misrepresentation. One percent is 10,000 ppm, 10 million ppb, and 10 billion ppt. Pollutants known to be found in biosolids have thresholds measured in parts per million, more commonly in parts per billion, and some endocrine disruptors for aquatic life have thresholds at parts per trillion. For example, EPA standards for drinking water set a contamination threshold of 10 ppm (mg/L) of nitrate nitrogen. The applicant and staff should know this, given the testing standards and land application standards.

That career staffers at DOE allowed the "99 percent good stuff" comment to be presented out of context was misleading at best and grossly negligent at worst. The rights of the public to a healthy environment are protected by statute, by the Washington State Constitution and by the Public Trust Doctrine embodied therein.

**The DNS must be withdrawn. The applicant's permit should be denied. In the alternative and absent timely new regulation from EPA for biosolids, the applicant**

**should be required to test for and report to DOE the amounts of the known 35 priority pollutants from each load received from each generator, and to install and test monitoring wells for the levels of the same pollutants in order comply with the Clean Water Act, the Washington State Growth Management Act, and to avoid environmental harm. WAC 197-11-340(3)(a)(ii) and (iii).**

Exhibit 4. EPA Targeted National Sewage Sludge Survey (2009)

At the public meeting on January 24, DOE staff described how pretreatment by the generators breaks down most organic chemical pollutants. Exhibit 5 shows that EPA's own survey found 145 industrial chemical pollutants in every sample tested from 74 sewage treatment plants in 38 states. Their concentration ranges often exceeded ppm-levels, exceeding concentration levels considered safe in drinking water by orders of magnitude.

The applicant's SSLAP and SEPA checklist failed to disclose that the land is a designated CARA.

**The DNS must be withdrawn. Either the applicant's permit should be denied, or a full EIS should be required which should include a hydrological study supervised by the Thurston County hydrologist. WAC 197-11-340(3)(a)(ii) and (iii).**

Exhibit 5. Case for Caution Revisited: Health and Environmental Impacts of Application of Sewage Sludges to Agricultural Land (2009)

Originally published in 1999, and updated in March 2009, this paper from Cornell University's Waste Management Institute states the obvious:

"Protecting agricultural soils requires anticipating and avoiding potential harms since once contaminated with persistent pollutants, the damage will remain for the foreseeable future. Once contaminated, stopping the application of pollutants such as metals and many organic chemicals that are in sewage biosolids will not correct the problem. The contamination will remain for decades or centuries. It is thus critical to prevent this essentially permanent degradation."

The paper goes on to state, "Current Rules are Based on Outdated and Inadequate Science." Finally, the paper concludes that 40 CFR Part 503 rules do not protect human health, agriculture, or the environment.

The landowner (Jason Abston) who has given consent for the applicant to apply biosolids to his property stated in a Nisqually Valley News interview by Eric Rosane published January 10, 2019 (prior to the public meeting) that he will graze cattle on the land.

A question from the public meeting on January 24 was raised about bioaccumulation of toxic pollutants. In my remarks to the Hearing Office, I noted the concern about bioaccumulation given that there are no labelling requirements for beef pastured on land

treated with biosolids. Exhibit 4 provides citations to the literature on this concern starting on page 6 of the paper and states:

“...recent research has shown impacts to grazing animals from biosolids additions to soils. These impacts include an accumulation of toxic metals in edible body organs, with implications for the human food chain. Additionally, endocrine disruption (reduced testis size) has been documented, with implications for livestock reproduction. There is now evidence that elements in sludge, particularly molybdenum and sulfur, are readily taken up by forages and can lead to Cu deficiency in livestock.”

Regarding the risk to surface waters and aquifers (both of which are protected by the Clean Water Act and Washington State’s Growth Management Act), the paper has a section titled “Movement to groundwater through facilitated transport” that cites to the literature, and states:

“New understanding about the movement of contaminants (both chemicals and pathogenic organisms) through soils into groundwater has been developed in recent years. This includes information showing that contaminants may “piggy-back” on other chemicals that move in water (this is termed “facilitated transport”). Thus a chemical which by itself is relatively immobile in soils (such as many metals), can move rapidly through soils when other chemicals are present (such as organic matter in biosolids). In addition, another mechanism that provides for rapid movement of chemicals through soils is that water and the contaminants carried in it can move through soils along preferential flow paths (such as worm holes, root channels or wetting fingers).”

In one aspect of human health, the paper looks at “Aerosols and human health effects.” Again, citations to the journal literature are provided:

“A study of people living near application sites compared with a control population showed statistically elevated health-related symptoms in the exposed population. Another study of 48 people located near 10 land application sites indicated that chemical irritants and pathogens in sludge may interact to cause symptoms.”

At the January 24 public meeting, the applicant and DOE staff stated that potential pathogens in sludge were pretreated by the generator via “time and temperature.” Unfortunately, DOE staff appeared to be unaware of the literature cited in Exhibit 4 in the section titled, “Bacterial regrowth/viable non-culturable:”

“Recent research has demonstrated that sewage biosolids believed to meet Class A or Class B standards were subject to regrowth and reactivation of bacteria. Thus materials have been land applied that contained bacterial levels far above those of Class A or Class B as defined by USEPA under Part 503. Coliform concentrations were found to increase by 100-1000-fold in biosolids and in soil/biosolid mixtures after centrifugation of anaerobically digested biosolids. Coliform concentrations up to 100,000 times those measured by conventional culture methods may be found in thermophilically digested sludges after

centrifugation. This results from the presence of viable but non-culturable bacteria.”

Exhibit 4 provides research documenting another threat to surface waters and the CARA: “Antibiotic resistant bacteria were found in higher numbers downstream of sludge-treated farmland as compared to upstream.”

At the public meeting on January 24, the applicant presented a slide prepared by Northwest Biosolids showing how the effects of triclosan would take 11 years to adversely affect workers on the site. The applicant failed to address the adverse impact of triclosan on soil microorganisms and earthworms. Exhibit 4 provides citations to the literature, and states:

“Recent research shows that sludge application changes the soil microbial community and decreases its diversity. A number of human-use compounds (such as triclosan found in many personal care products such as antibacterial soaps) bioconcentrate in earthworms where soil has been amended with sewage sludges.”

At the public meeting on January 24, DOE staff and the applicant discussed the testing of the nine heavy metals regulated under Part 503 and showed example slides to reassure the audience. Exhibit 4 addresses this topic from a far more concerning point of view, citing literature again, and stating:

“A review of published research by 9 scientists from 5 Northeastern states produced recommended limits for heavy metals that are substantially lower than those permitted under the USEPA 503 rule.”

The applicant’s SSLAP and SEPA checklist make no mention of these material disclosures. The rights of the public to a healthy environment are protected by statute, by the Washington State Constitution and by the Public Trust Doctrine embodied therein.

**The DNS must be withdrawn. The applicant’s permit should be denied. WAC 197-11-340(3)(a)(ii) and (iii).**

#### Personal impact

I settled in southeast Thurston County with my wife in 1991 after I separated from 10 years of active duty military service. I drink water from our well. I drink water in Yelm where I work, shop, and dine out. I buy salmon from the Nisqually Tribe that have been caught in the river. I buy local beef at Stewart’s Meats in McKenna. The cuts are not labelled with the name of the cattle rancher. I eat local beef served in Yelm restaurants.

As I said in my oral comments on January 24, I was a garden store manager in Yelm when the Part 503 Biosolids Rule was promulgated by EPA. At the time, it seemed like a great idea. I also wrote a gardening column for the Nisqually Valley News called “Healthy Soils, Healthy People.” I know the value of growing healthy soil. As in medical

and veterinary science, soil science lab test results use the abbreviation WNL to stand for “within normal limits.” The dark humor in the business is when WNL actually stands for “we never looked.”

EPA, WEF (the industry trade group), and the [DOE biosolids](#) web page assert that biosolids “can be recycled as fertilizer and soil amendments.” The use of the concept of recycling is a misnomer. Transporting biosolids from a permitted generator’s facility to a distant agricultural plot of land that is not connected to a wastewater facility of a biosolids generator is not recycling. To reduce waste, products made of metal, glass, and plastic are recycled to make other metal, glass, and plastic products. The recycled products go back to manufacturing plants to be remade into more of the same kinds of products. To recycle biosolids would be to send them back to those properties who are connected to the wastewater treatment facility. Those property owners pay for the utility service and treatment facility’s processing system. The rate payers and tax payers should be provided with a proportionate share of the biosolids as a benefit for their contributions.

Finally, I chose to submit citations to the scientific literature only up to the year 2009 in order to provide some context to the EPA OIG 2018 report recommendations. It is clear EPA has not incorporated the existing science sampled here in their efforts to date, thus I do not have any confidence in their agreement to develop a plan by the end of 2022, let alone promulgate new rules based upon scientific literature produced in the years thereafter. Abuse, misconduct, and neglect have consistently been found to pervade federal agencies with internal investigations by various Offices of Inspectors General often leading to little more than recommendations, window-dressing reform, and the flimsy appearance of accountability. And so I look to Washington State and DOE to act on behalf of the public trust and the environment’s health in this instant matter.

**NOTICE: The SSLAP permit application, SEPA checklist, and DNS are new for the parcel numbers listed. Thus, the land and facilities thereon are not preempted facilities as defined in RCW 70.105.010(16)(c). Therefore, RCW 70.105.240(1) – State preemption – does not apply.**

**Withdraw the DNS. Deny the applicant’s permit.**



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