



Response to Comments

SEPA Checklist and Determination of Nonsignificance for the Draft General Permit for Biosolids Management

Solid Waste Management Program

Washington State Department of Ecology
Olympia, Washington

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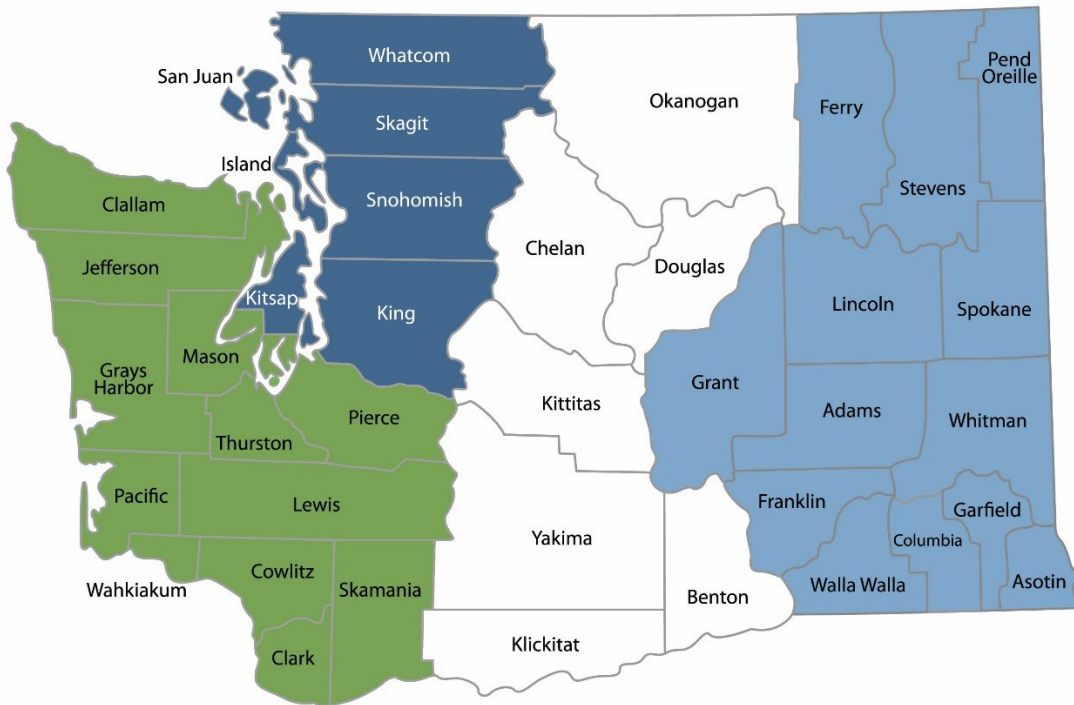
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Map of Counties Served



Southwest Region 360-407-6300	Northwest Region 206-594-0000	Central Region 509-575-2490	Eastern Region 509-329-3400
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Region	Counties served	Mailing Address	Phone
Southwest	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum	P.O. Box 47775 Olympia, WA 98504	360-407-6300
Northwest	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom	P.O. Box 330316 Shoreline, WA 98133	206-594-0000
Central	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima	1250 West Alder Street Union Gap, WA 98903	509-575-2490
Eastern	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman	4601 North Monroe Spokane, WA 99205	509-329-3400
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DEPARTMENT OF
ECOLOGY
State of Washington

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Introduction

Summary of Permit Development

The Washington Department of Ecology (Ecology) issues this Response to Comments (Response) for input received on the State Environmental Policy Act Determination of Nonsignificance¹ issued for the Draft General Permit for Biosolids Management.

The purpose of the Statewide General Permit for Biosolids Management (general permit) is to implement the biosolids management rules in Chapter 173-308 WAC².

Ecology's public process included:

December 2019: Ecology filed a notice of preliminary determination³ in the State Register to issue a new general permit for biosolids management. Ecology solicited comments on the appropriateness of issuing a new general permit for biosolids management to replace the general permit that would expire September 4, 2020⁴. Ecology received 24 comments between December 3, 2019, and January 24, 2020.

January 2020: Ecology reviewed all responses and determined that a general permit was the best approach to implementing Chapter 173-308-WAC².

March 2020: Notices of Intent to continue permit coverage under the next general permit for biosolids management were due. Ecology received Notices of Intent from all permitted facilities on time.

June 2020: Ecology responded to the 24 comments received on the preliminary determination to issue a new general permit for biosolids management, which can be found online⁵.

September 2020: The previous general permit⁴ expired September 4, 2020. The requirements of the expired permit remain in effect for all facilities who successfully submitted a Notice of Intent.

May 2021: Ecology filed a notice in the State Register⁶ of the draft general permit. Ecology held a two-month public comment period and two virtual public hearings to solicit comments safely during the COVID-19 pandemic. Ecology received 146 comments between May 19, 2021, and July 12, 2021.

May 2022: Ecology responded to the 146 comments received on the draft general permit, which can be found online⁷. After reviewing all responses and making changes to the draft

¹ <https://apps.ecology.wa.gov/separ/Main/SEPA/Record.aspx?SEPANumber=202404276>

² <https://apps.leg.wa.gov/wac/default.aspx?cite=173-308>

³ <https://lawfilesext.leg.wa.gov/law/wsr/2019/24/19-24-091.htm>

⁴ <https://ecology.wa.gov/getattachment/4ce19af3-1fef-483c-b3d2-e1d17e05d607/2015-General-Permit-for-Biosolids-Management.pdf>

⁵ <https://apps.ecology.wa.gov/publications/documents/2007017.pdf>

⁶ <https://lawfilesext.leg.wa.gov/law/wsr/2021/10/21-10-101.htm>

⁷ <https://apps.ecology.wa.gov/publications/documents/2207015.pdf>

general permit based on input received, Ecology made the determination to issue the final general permit for biosolids management to replace the expired one.

June 2022: Ecology issued the final general permit⁸ on June 15, 2022.

July 2022: The general permit became effective July 15, 2022. Ecology received an appeal from Ed Kenney and the Nisqually Delta Association⁹ shortly afterwards. The general permit remained in effect as Ecology worked through the appeal process.

January 2024: The Pollution Control Hearings Board (Board) ruled for the appellant on January 29, 2024¹⁰. This decision voided the Determination of Nonsignificance¹¹ issued for the general permit in 2021 and any decisions based on it, including Ecology's decision to issue the general permit⁸ in 2022 as well.

The Board determined that the Determination of Nonsignificance¹¹ issued for the general permit in 2021 was inadequate and ordered Ecology to revisit it and include information specifically relating to per-polyfluoroalkyl substances (PFAS), polybrominated diphenyl ethers (PBDEs) and microplastics.

September 2024: Ecology revisited the State Environmental Policy Act Checklist and reissued a new Determination of Nonsignificance¹ for the draft general permit. Ecology held a public comment period from September 27, 2024, through October 25, 2024. This document (Ecology Publication 25-07-002) responds to the 54 comments received during that time.

December 2024: After reviewing all comments received on the State Environmental Policy Act Determination of Nonsignificance¹, Ecology made the determination to issue the final general permit for biosolids management to replace the expired one.

Summary of Changes

Ecology did not make any changes to the general permit based on comments received on the Determination of Nonsignificance.¹

Organization of the Response to Comments (RTC)

Ecology thanks everyone who took the time to review the State Environmental Policy Act Checklist and Determination of Nonsignificance¹ on the draft general permit and submit comments. 54 comments were received from individuals, agencies, organizations, and tribes and each comment was reviewed and given a category based on the topic of the comment. The

⁸ <https://apps.ecology.wa.gov/publications/documents/2107006.pdf>

⁹ <https://eluh02022.my.site.com/casemanager/s/case/50082000001BFU5/detail>

¹⁰ <https://eluh02022.my.site.com/casemanager/s/eluh0-document/a0T82000000QDDFEA4/20240129-order-on-motions-for-summary-judgment>

¹¹ <https://apps.ecology.wa.gov/separ/Main/SEPA/Record.aspx?SEPANumber=202102299>

responses are organized based on those categories so readers can easily find responses to topics.

In the event similar remarks from multiple commenters were received, rather than duplicating the response to each similar comment, they were combined and responded to in a collection.

Commenter names are compiled in a list, each given a unique identifier to ensure each commenter will be able to locate their remarks. Identifiers are in the following format: “Letter-number”. The letter corresponds to the type of commenter, (see Table 1 for an explanation of each commenter type), and the number refers to the sequence in which that type of comment was received. For example, identifier I-20 represents the 20th comment received from an *individual*.

Table 1. Type of Commenter

Comment Identifier	Commenter Type
I	Individual
A	Agency
O	Organization
T	Washington Tribe

List of Commenters

- Harry Branch, Commenter: I-1
- S. Leigh Ost, Commenter: I-2
- Jordan Cohen, Commenter: I-3
- Michael Laurie, Commenter: I-4
- Diane Emerson, Commenter: I-5
- Morton Alexander, Commenter: I-6
- Larry McCarter, Commenter: I-7
- Darlene Schanfald, Commenter: I-8
- Monica Hoover, Commenter: I-9
- Marguerite Winkel, Commenter: I-10
- Doris Cellarius, Commenter: I-11
- Jese Whorton, Commenter: I-12
- Diane Johnson, Commenter: I-25
- Maria Mendes, Commenter: I-26
- Dianna Michaels, Commenter: I-27
- Rachel Hynd, Commenter: I-28
- Ian Cunningham, Commenter: I-29
- Jayne Marek, Commenter: I-30
- Eleanor Mattice, Commenter: I-31
- Dwayne Haus, N.D., Commenter: I-13
- Meagan Dunn, Commenter: I-14
- Chrys Ostrander, Commenter: I-15
- Michael Laurie, Commenter: I-16
- Joseph A. Barreca, Commenter: I-17
- Sabina Astete, Commenter: I-18
- Ted Hensold, Commenter: I-19
- Carrie Anderson, Commenter: I-20
- Argyle Baukol, Commenter: I-21
- Lori Taylor, Commenter: I-22
- Norman Baker, Commenter: I-23
- Kirsten Angell, Commenter: I-24
- Richard Taylor, Commenter: I-32
- Eleanor Mattice, Commenter: I-33
- Debra Ellers, Commenter: I-34
- Mari O’Neill, Commenter: I-35
- Jean Mann, Commenter: I-36
- Ann McCormick, Commenter: I-37
- Gregg DePonte, Commenter: I-38

- Hilary Ohm, Commenter: I-39
- Alex Tu, Commenter: I-40
- Denise Ebbighausen, Commenter: I-41
- LaVon Stiles, Commenter: I-42
- Bob Guenther, Commenter: I-43
- Anonymous, Commenter: I-44
- Kamuron Gurol, King County: I-45
- Wastewater Treatment Division, Commenter: A-1
- Jeff Donovan, City of Spokane, Commenter: A-2
- Kristen Thomas, Discovery Clean Water Alliance, Commenter: A-3
- Bruce MacLeod, Synagro, Commenter: O-1
- Kirsten McDade, RE Sources, Commenter: O-2
- MacLeod Pappidas, NorthWest Biosolids, Commenter: O-3
- Kyle Dorsey, The Coalition for Clean Water, Commenter: O-4
- Wyatt Golding, Nisqually Delta Association, Commenter: O-5
- David Troutt, Nisqually Indian Tribe, Commenter: T-1
- Chad McCrea, Spokane Tribe of Indians, Commenter: T-2

Comment Categories

The comments received were reviewed and evaluated by Washington State Department of Ecology. Comments were categorized into four areas for response, though many comments touched on aspects of more than one comment category. The comment categories include:

1. Argues Determination of Nonsignificance is Inadequate
2. Cease Land Application
3. In Support
4. Unclassified

Key Topic Discussions

To support all readers' understanding of the biosolids program and responses to comments in this document, recurring topics have been identified and compiled in the key topic discussions below. This grouping also provides background information to explain complex subjects. Instead of duplicating answers to individual comments, many commenters are referred to one or more topic discussions.

Pollution Control Hearings Board Decision Interpretation

Ecology received several comments that discussed the correct interpretation of the Pollution Control Hearings Board's (Board) decision¹⁰, issued on the appeal of the General Permit for Biosolids Management (general permit). Comments included claims that:

- Ecology has gone around the Board's decision.
- Ecology has not done what the Board required.
- The Board's decision has canceled Ecology's Biosolids Program entirely.

In reissuing the State Environmental Policy Act Checklist and Determination of Nonsignificance¹ on the draft general permit, Ecology operates based on its interpretation of the Board's decision and legal guidance from Assistant Attorney Generals. The Board explicitly "declined to require Ecology to prepare an Environmental Impact Statement as urged by the Appellants," instead specifically ordered Ecology to "includ[e] in its environmental Checklist and resulting determination an explicit and full disclosure and review of information on the environmental impacts of PFAs, PBDEs, and microplastics in biosolids that are stored, transported, and land applied under the General Permit." (page 28)¹⁰¹⁰

The response to question A.6. in the Checklist¹, (pages 5-6) briefly spoke to the interpretation of the Board's decision and is summarized below:

The Pollution Control Hearings Board pointed out that incomplete or unavailable information on PFAS, PBDEs, and microplastics in biosolids should be discussed in the Checklist and Determination of Nonsignificance and should include available studies. The Board pointed to State Environmental Policy Act rule language WAC 197-11-080(2)-(3)¹² in support of their decision. WAC 197-11-080(2)-(3) directs agencies toward how to proceed when there are "gaps in relevant information or scientific uncertainty" and the "costs of obtaining it are exorbitant", or the means to obtain the information is "speculative or unknown". This direction means Ecology should "weigh the need for the action with the severity of possible adverse impacts which would occur if the agency were to decide to proceed" with an action considering relevant information gaps¹².

Ecology conducted a lengthy review in the initial State Environmental Policy Act Checklist and Determination of Nonsignificance¹ issued in 2021 on the draft general permit. As the Board

¹² <https://app.leg.wa.gov/WAC/default.aspx?cite=197-11>

pointed out, there was no explicit mention of PFAS, PDBEs, or microplastics in the initial review. However, we spoke at length about these contaminants of emerging concern (CECs) in the Response to Comments on the draft general permit⁷. Following the Board's decision, Ecology redid the State Environmental Policy Act review on the draft general permit issued in 2021 to appropriately document research and analysis on PFAS, PBDEs and microplastics. Ecology expanded upon the information considered during the initial Checklist review, incorporated new information that was made available after the initial Checklist review, and clarified where information gaps are present. Ecology weighed the need to sustainably manage biosolids generated across Washington against the severity of possible adverse impacts that could occur. We detailed our current understanding of three CECs and their presence in biosolids specifically. The review also expanded to other contaminants not mentioned by the Board to provide context about how appropriate science-based regulatory limits are determined and implemented. Appropriate literature and guidance documents were cited to support these conclusions.

This State Environmental Policy Act review is a continuation of the review conducted in 2020-2021 and a continuation of the permit issuance process that began around the same time. The State Environmental Policy Act was initiated at the start of this permit issuance process, considered at the earliest possible time, and has been incorporated throughout.

Population Growth

There were comments received suggesting that Ecology did not appropriately address question B1 in the Checklist with respect to population growth. To expand upon what is discussed in the Checklist¹ (page 17), issuing the general permit will not cause a population increase or an increase in biosolids generation; rather, the permit is a mechanism to ensure appropriate handling of these materials. It is also not appropriate to equate an increase in biosolids being generated to an increase in the release of toxic or hazardous substances.

Between 2017 and 2021 the population of Washington state has increased from 7,310,300 to 7,766,925 people, about a 6% increase in total¹³. During those same years, biosolids generation in Washington fluctuated from year to year based on annual reports Ecology receives each year from biosolids facilities as a permit requirement. In 2017 biosolids generation was an estimated 115,000 dry tons; in 2021 it was an estimated 107,100 dry tons. This difference is about a 7% decrease in generation. This data indicates that there is no direct link between population growth and biosolids generation. Many other variables impact biosolids generation, as well.

In Washington biosolids are applied to the land using agronomic rates, referring to the amount of biosolids put on designated lands. These rates are based on the crop and soil nutrient needs at each proposed Class B land application site. The amount of biosolids land applied remains

¹³ <https://ofm.wa.gov/washington-data-research/statewide-data/washington-trends/population-changes/total-population-and-percent-change>

consistent across land application events because it is determined based on the individual site needs. Similarly, the concentration of biosolids being applied to the land doesn't vary drastically either. In fact, pollutant concentrations in biosolids have been seen to decrease over the years. This decrease is due to: source reduction, identifying safer alternatives, pretreatment requirements for industry and businesses, and consumer purchasing habits. Phasing out the production and use of Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) has shown a decrease in human blood levels over time¹⁴. Similarly, the concentrations of pollutants and contaminants of emerging concern (CECs) in biosolids will decrease as production is reduced and safer alternatives are found. These trends result in a decrease in those contaminant concentrations in biosolids as well, regardless of population growth.

Wastewater Treatment Plants Are Passive Receivers of Contaminants, Not Generators

Ecology agrees that PFAS, or "forever chemicals," are present everywhere in our environment today due to their persistence and prolific production, as well as their use in many products people interact with daily¹⁵. PFAS have been found in remote landscapes such as snow cores in Antarctica, and rain at levels exceeding the EPA's Lifetime Drinking Water Health Advisory levels. It is inaccurate to attribute the widespread presence of PFAS in the environment to biosolids alone.

Wastewater treatment plants provide a necessary service to communities across Washington state. PFAS and other contaminants of emerging concern (CECs) are not generated during wastewater cleaning operations, they are received from upstream sources. The presence of PFAS in biosolids reflects the mass production and use in consumer products that individuals interact with regularly. Once contaminants reach the Wastewater treatment plant, they have already passed through people's bodies, homes, and businesses.

Ecology is focused on addressing CECs before they make their way to wastewater treatment plants, and ideally before people are exposed to them in their everyday lives. Source reduction is incredibly effective when reducing human and environmental exposure to any contaminant of concern, including PFAS and microplastics. This factor is noted in the Checklist¹ on page 23, pointing to the example of PFOA and PFOS source reduction efforts.

¹⁴ <https://www.atsdr.cdc.gov/pfas/data-research/facts-stats/index.html>

¹⁵ <https://ecology.wa.gov/waste-toxics/reducing-toxic-chemicals/addressing-priority-toxic-chemicals/pfas>

Comments and Responses

Argues Determination of Nonsignificance is Inadequate

Ecology received 16 comments sharing disagreement with the Determination of Nonsignificance issued for the General Permit. Some commenters contend that an Environmental Impact Statement (EIS) is required. Below is a response to these comments and additional responses are provided to some of the more detailed or nuanced comments on this topic as well.

Ecology disagrees that an Environmental Impact Statement is needed for the General Permit for Biosolids Management. The reasons are outlined in the Determination of Nonsignificance¹ (pages 2-3), based on the analysis and research conducted in this process summarized in the Checklist. Although Ecology made a concerted effort to include the review and analysis of PFAS, PBDEs, and microplastics, the focus of the State Environmental Policy Act is broader in scope and covers the entire general permit.

The science around PFAS and our understanding of its fate and transport in biosolids is still evolving. The available literature and data available to date shows that it is unlikely that current biosolids land application practices, allowed under the general permit in Washington, constitute a major source of PFAS exposure for humans or the environment. Per State Environmental Policy Act rule (WAC 197-11-080¹²), in light of the unavailable or incomplete information, Ecology must weigh the need to manage biosolids with the severity of possible adverse impacts that could occur should Ecology proceed with issuing the general permit. Washington's wastewater treatment systems provide a necessary service in protecting water quality and the state's natural resources. Biosolids are generated as a byproduct during the wastewater treatment process. Biosolids generation will continue, and the material needs to be managed sustainably. Currently, the available alternate methods of use of biosolids, other than beneficial use, include landfilling and incineration. However, landfilling and incineration at sewage sludge incinerators do not effectively destroy PFAS, microplastics or other contaminants of emerging concern (CECs) -- and both release contaminants with environmental impacts. The sewage sludge incinerators and available landfills that accept biosolids for disposal in Washington do not have adequate capacity to accept the amount of biosolids generated annually.

At this point available science still shows land application is the best use of biosolids over disposal. Biosolids staff stay informed on current research, including new treatment and disposal technologies. Ecology didn't expand on treatment methodologies that have been proposed including pyrolysis, Supercritical Water Oxidation (SCWO), and thermal treatment, or permitted hazardous waste combustors that operate under certain conditions. These treatment technologies are not discussed because they have not proven to destroy PFAS in

biosolids^{16 17 18}. To date, no single technology can treat PFAS contamination in totality. Each contaminated media can require differing disposal methods; furthermore, the degree of their efficacy to achieve destruction varies.

Comment I-7: LARRY McCarter

Submit Method: Website

Land Application of Biosolids has been determined to have significant impacts and therefore an Environmental Impact Study must be done. WWTP's generate these waste solids because the Clean Water Act does not permit discharging these toxic solids. Using the toxic solids removed from WWTP's and spreading them on the surface of our lands was a bad idea and now it has been proven to be a significant exposure pathway for a number of dangerous biological, chemical and unknown exposures for both wildlife and people. Agronomic rates are not clearly monitored by the state. It seems there are very few (if any) up to date agronomic loading calculations or records on file or in this SEPA Checklist data set. The state needs more data detailing the adequacy of continued use of existing Land Application sites after conducting agronomic studies of all sites currently in-use.

This is no crisis or drive to permit land application of unknown discharges of pollutants generated by WWTP's. Sewage Sludge Handling capacity is no longer a problem given new regional sewage sludge processes are soon coming on-line that are designed to safely beneficially use and landfill the contaminated feedstock of sewage sludges without Land Application.

Response to I-7

Thank you for your comment. Agronomic rates for non-exceptional quality biosolids are reviewed by Ecology staff each year prior to land application. The application rates are determined using guidance^{19 20 21 22} developed by the Environmental Protection Agency (EPA), agronomists, and universities. They consider nutrient management information specific to the crop, soil, and climate of the site. After the crop is harvested, the application efficiency is analyzed to guide future application rates.

Ecology is not aware of any regional sewage sludge processes coming online that would have the capacity or capability to appropriately handle all biosolids generated in Washington state in

¹⁶ <https://statics.teams.cdn.office.net/evergreen-assets/safelinks/1/atp-safelinks.html>

¹⁷ https://www.epa.gov/sites/default/files/2021-01/documents/pitt_research_brief_scwo_final_jan_25_2021_508.pdf

¹⁸ <https://www.epa.gov/system/files/documents/2024-04/2024-interim-guidance-on-pfas-destruction-and-disposal.pdf>

¹⁹ <https://apps.ecology.wa.gov/publications/documents/9380.pdf>

²⁰ <https://apps.ecology.wa.gov/publications/documents/99508.pdf>

²¹ <https://www.epa.gov/biosolids/pathogens-and-vector-attraction-sewage-sludge>

²² <https://extension.oregonstate.edu/catalog/pub/pnw-508-fertilizing-biosolids?reference=catalog>

the near or far future. Beneficial use is defined in WAC 173-308-080² as the application of biosolids to the land for the purpose of improving soil health. Ecology does not consider sending biosolids to the landfill a beneficial use, so this proposal would not be in keeping with state rules.

In reference to your comments about wastewater treatment plants generating contaminants, please see the Key Topic titled "[Wastewater Treatment Plants are Passive Receivers of Contaminants of emerging concern, Not Generators](#)". Please also review the general response to this topic, above.

Comment I-9: Monica Hoover

Submit Method: Website

Contamination of cropland and groundwater with PFAS, PBDEs, and microplastics due to land application of biosolids has been reported across the country in recent years. How will Ecology prevent this type of damage in Washington State? How can a Determination of Nonsignificance be made when there is high potential for damage? WDOE is entrusted to protect our land and water. The issues involved are not fully addressed by this permit.

Response to I-9

Thank you for your comment. How the Determination of Nonsignificance was deemed appropriate, is explained in the Checklist and Determination of Nonsignificance¹ itself. Incidences of high PFAS levels in biosolids in other states is specifically addressed under the heading "Case Studies: PFAS", (pages 23-24).

Please also review the general response to this topic, [previously](#).

Comment I-11: Doris Cellarius

Submit Method: Website

Ecology's new "SEPA Determination of Nonsignificance for the Draft Biosolids General Permit" continues to be totally inadequate for protecting Washington's soils, crops and waters.

The PCHB decision called for addressing "information gaps on the degree to which these pollutants are present in biosolids, including their exposure pathways and risk levels, should be discussed in the environmental Checklist and DNS, along with forthcoming studies and screening tools."

Ecology has not done this. The Checklist should call for testing of biosolids before application for contaminants such as PFAS and also for testing of soils where biosolids have been applied.

This is done in other states and is called for in a bill that the Oregon Legislature almost adopted earlier this year before the session concluded.

Ecology's response claiming that in Washington there are no identified biosolids pollution problems because EPA has adopted no regulations or established standards to guide them is inaccurate and deceptive. "Among the CECs being discussed today are PBDEs, PFAS and microplastics. Research has found PFAS and PBDEs in biosolids at differing levels around the US, including Washington State. The research around microplastics in biosolids is still young. There is still no standardized methodology for identification and quantification of microplastics, but there is ongoing investigation into their presence in biosolids and their effect on human health and the environment. These three contaminants and the associated research conducted on each are representative of three different stages of the analysis process EPA conducts when determining whether regulation in biosolids is necessary. One commonality with these different stages is that research is always ongoing. Should new research identify a contaminant as a risk and the EPA identify appropriate risk based, regulatory limits, Ecology will implement those limits in state rules as well."

Ecology must act now - in this new Permit - by calling for testing of all biosolids and lands where biosolids have been land applied. No real information would be called for until sometime in the future when the Active Septage Management and Active Biosolids Management program requires that: "new and existing facilities must submit complete permit application packages with plans that include specific information about biosolids treatment, analysis, and uses, including detailed information about proposed land application sites or programs that will sell or give biosolids away without further regulation (if applicable)." Ecology must require this information now in the new Permit. Its lands, waters and citizens deserve better. Doris Cellarius

Response to I-11

Thank you for your comment. Washington state has seen the topic of PFAS in biosolids bills as well during legislative session, including SSB6163²³ last year that Ecology supported, as it would have allowed for more gathering of data on PFAS levels in biosolids generated in Washington. The bill did not pass during session. Ecology cannot arbitrarily impose monitoring requirements through the General Permit alone – such requirements should be either legislatively mandated or imposed via rules established pursuant to rulemaking procedures.

In addition to the general response at the start of this [section](#), there are several other sections in this document that speak to this comment. Please also see the response to comment [O-5](#), the Key Topic Discussions titled "[Wastewater Treatment Plants are Passive Receivers of Contaminants of emerging concern, Not Generators](#)" and "[Pollution Control Hearings Board Decision Interpretation](#)" for comments about what the Board's motion for summary judgement remanded Ecology to do.

²³ <https://lawfilesexternal.wa.gov/biennium/2023-24/Pdf/Bills/Senate%20Bills/6163-S.pdf?q=20241209113202>

Comment I-15: Chrys Ostrander

Submit Method: Website

Using toxic municipal sewage sludge as fertilizer IS NOT ECOLOGICAL.

The State of Washington must cease issuing and nullify any permit that allows the disposal of municipal sewage sludge in any form on homes, farmland, forestland or parkland. Furthermore, the Dept. must live up to its name and inform the WA state legislature that using toxic municipal sewage sludge as fertilizer is not a "beneficial use" of sewage sludge (RCW 70A.226.005). The Dept. for decades has hidden behind the legislature's purely political, shockingly unscientific declaration of that beneficial use as its excuse for brazenly promoting and facilitating the pollution of millions of acres of farmland and the food produced on it as well as surrounding wildlife habitat and surface and ground waters with sewage sludge.

Informed and concerned people like me have protested against this practice for many years citing credible scientific evidence of the hundreds of toxic contaminants present in municipal sewage sludge and yet the bureaucratic juggernaut has simply plowed over our protests.

But things are changing.

Now that scientists and the general public have learned of the public health crisis we're in caused by a family of toxic "forever chemicals" (sometimes referred to as PFAS, used as fire retardants, non-stick surfaces, etc.) that are being detected everywhere, including in our bloodstreams, and are now known to accumulate in sewage sludge, finally the protests are having an effect.

The Dept. of "Ecology" must no longer IGNORE the environmental impacts of spreading sewage sludge claiming the practice HAS NO SIGNIFICANT ENVIRONMENTAL IMPACT which therefore absolves the Dept. from having to conduct any thorough scientific assessment of its impact.

Things changed when the Dept. was successfully sued last year by a citizen's group called the Nisqually Delta Association. The Pollution Control Hearings Board found that the WA Dept. of "Ecology" had simply omitted any reference to PFAS, PBDEs (similar to PFAS), and microplastics in its documentation supporting its position that the environmental impact of sewage sludge application to farm and other land was "insignificant". The decision of the Hearings Board voided the Dept. reissuing its statewide permit effectively halting any new sewage sludge application sites in the state.

Now, in an appalling effort to restart the sewage sludge program, the Dept. CONTINUES TO CLAIM NO SIGNIFICANT ENVIRONMENTAL IMPACTS result from sludge application to farmland even after it was forced by the Hearings Board to include PFAS, PBDEs, and microplastics in its documentation claiming said insignificance.

AT ALL COSTS (INCLUDING TO OUR HEALTH AND THE HEALTH OF OUR CHILDREN), THE WA DEPT. OF "ECOLOGY" WANTS TO AVOID HAVING TO CONDUCT AN ENVIRONMENTAL ASSESSMENT OF THE LAND APPLICATION OF MUNICIPAL SEWAGE SLUDGE, SHAMELESSLY CLAIMING IT HAS NO SIGNIFICANT IMPACT. The Dept. knows that such an investigation would reveal the many hazards resulting from the practice which would necessitate its immediate cessation. Claiming insignificance absolves the Dept. from having to conduct the study. This is bureaucratic malfeasance at its worst.

The last time the Dept. had a public comment period on the reissuance of the statewide biosolids permit (2021), out of exactly 100 public comments received by the Dept., 86% of people who submitted written comments didn't want municipal sewage sludge to be used as fertilizer, or that its use be significantly more strictly regulated. 65% wanted an immediate ban.

The land application of municipal sewage sludge certainly has significant environmental impact, the Dept.'s claims of Nonsignificance notwithstanding. The Dept. has a clear choice: Either end the practice entirely or conduct a full environmental impact assessment (which no doubt would result in ending the practice of land application of municipal sewage sludge – and YOU KNOW THAT).

Response to I-15

Thank you for your comment. As indicated in the Determination of Nonsignificance¹ (pages 2-3) and throughout the Checklist¹, in making this determination, Ecology scrutinized existing research and peer-reviewed literature conducted by knowledgeable researchers that have spent a considerable amount of their careers working on both biosolids and PFAS. The Checklist, under the heading "PFAS" (pages 20-21), addresses the importance of considering data from reputable sources when looking at biosolids land application and contaminants of concern. It also addresses that data can be misleading or exaggerated and not representative of actual biosolids land application practices when studies aren't conducted appropriately (pages 21-22).

In addition to the general response at the start of this [section](#), there are several other sections in this document that speak to this comment. Please also see the response to comment [O-5](#), the Key Topics titled "[Pollution Control Hearings Board Decision Interpretation](#)" for comments about what the Board's motion for summary judgement remanded Ecology to do, and "[Wastewater Treatment Plants are Passive Receivers of Contaminants of emerging concern, Not Generators](#)".

Comment I-18: Sabina Astete

Submit Method: Website

The State of Washington must cease issuing and nullify any permit that allows the disposal of municipal sewage sludge in any form on homes, farmland, forestland or parkland. Live up to your name and inform the WA state legislature that using toxic municipal sewage sludge as fertilizer is not a "beneficial use" of sewage sludge (RCW 70A.226.005). The Dept. for decades has hidden behind the legislature's purely political, shockingly unscientific declaration of that

beneficial use as its excuse for brazenly promoting and facilitating the pollution of millions of acres of farmland and the food produced on it as well as surrounding wildlife habitat and surface and ground waters with sewage sludge. Informed and concerned people have protested against this practice for many years citing credible scientific evidence of the hundreds of toxic contaminants present in municipal sewage sludge and yet the bureaucratic juggernaut has simply plowed over our protests.

Now that scientists and the general public have learned of the crisis we're in caused by a family of toxic "forever chemicals" (sometimes referred to as PFAS, used as fire retardants, non-stick surfaces, etc.) that are being detected everywhere, including in your bloodstream, and are now known to accumulate in sewage sludge, finally the protests are having an effect.

In the state of Washington, the Dept. of "Ecology" regulates the "land application" of municipal sewage sludge. Periodically the Dept. revises these regulations and reissues what it calls the Statewide General Permit for Biosolids Management ("biosolids" being their pacifying euphemism for municipal sewage sludge). But the Dept. IGNORES the environmental impacts of spreading sewage sludge claiming the practice HAS NO SIGNIFICANT ENVIRONMENTAL IMPACT which therefore absolves the Dept. from having to conduct any thorough scientific assessment of its impact (what you don't know can't hurt you, right?)

Things changed when the the Dept. was successfully sued last year by a citizen's group called the Nisqually Delta Association. The Pollution Control Hearings Board found that the WA Dept. of "Ecology" had simply omitted any reference to PFAS, PBDEs (similar to PFAS), and microplastics in its documentation supporting its position that the environmental impact of sewage sludge application to farm and other land was "insignificant". The decision of the Hearings Board voided the Dept. reissuing its statewide permit effectively halting any new sewage sludge application sites in the state.

Now, in an appalling effort to restart the sewage sludge program, the Dept. CONTINUES TO CLAIM NO SIGNIFICANT ENVIRONMENTAL IMPACTS result from sludge application to farmland even after it was forced by the Hearings Board to include PFAS, PBDEs, and microplastics in its documentation claiming said insignificance.

AT ALL COSTS (INCLUDING TO YOUR HEALTH AND THE HEALTH OF YOUR CHILDREN), THE WA DEPT. OF "ECOLOGY" WANTS TO AVOID HAVING TO CONDUCT AN ENVIRONMENTAL ASSESSMENT OF THE LAND APPLICATION OF MUNICIPAL SEWAGE SLUDGE SHAMELESSLY CLAIMING IT HAS NO SIGNIFICANT IMPACT. The Dept. knows that such an investigation would reveal the many hazards resulting from the practice which would necessitate its immediate cessation. Claiming insignificance absolves the Dept. from having to conduct the study. This is bureaucratic malfeasance at its worst.

And now the public has the opportunity to voice our concerns once again about this situation in another public comment period that ends on Oct. 25.

The last time the Dept. had a public comment period on the reissuance of the statewide biosolids permit (2021), out of exactly 100 public comments received by the Dept., 86% of people who submitted written comments didn't want municipal sewage sludge to be used as fertilizer, or that its use be significantly more strictly regulated. 65% wanted an immediate ban.

Response to I-18

Thank you for your comment. Please see the response at the start of this [section](#), additionally the response to comments [I-15](#), [O-5](#); the Key Topic Discussions titled "[Wastewater Treatment Plants are Passive Receivers of Contaminants of emerging concern, Not Generators](#)" and "[Pollution Control Hearings Board Decision Interpretation](#)" for comments about what the Board's motion for summary judgement remanded Ecology to do.

Comment I-19: Ted Hensold

Submit Method: Website

The practice by the DOE of issuing permits for the application of biosolids from sewage plants to farm and forestland should immediately be placed on hold. The State should then commission a thorough assessment of the impacts and risks associated with this practice, conducted by a panel disinterested scientists. The results should be made public, and should form the basis for a state-wide policy moving forward.

Response to I-19

Thank you for your comment. The Checklist¹ addresses, under the heading "PFAS" (pages 20-21), the importance of considering data from reputable sources when looking at biosolids land application and CECs, It also addresses that data can be misleading or exaggerated and not representative of actual biosolids land application practices when studies aren't conducted appropriately on pages 21-22.

Comment I-22: Lori Taylor, I-23: Norman Baker, and I-38: Gregg DePonte

Submit Method(s): Website

The State of Washington must cease issuing and nullify any permit that allows the disposal of municipal sewage sludge in any form on homes, farmland, forestland or parkland.

Response to I-22, I-23, and I-38

Thank you for your comments. Please see the response at the start of this comment review section, as well as the response to comments [I-15](#) and [O-2](#).

Comment I-28: Rachel Hynd

Submit Method: Website

The State of Washington must cease issuing and nullify any permit that allows the disposal of municipal sewage sludge in any form on homes, farmland, forestland or parkland. There is credible scientific evidence of the hundreds of toxic contaminants, including PFAS, present in municipal sewage sludge. Using it would result in the increased pollution of millions of acres of farmland and the food produced on it as well as surrounding wildlife habitat and surface and ground waters with these contaminants.

Response to I-28

Thank you for your comment. Please see the response at the start of this [section](#), as well as the response to comments [I-15](#) and [O-2](#).

Comment I-34: Debra Eilers

Submit Method: Website

DOE's determination that widespread application of toxic sludge has "non-significant" impacts is in error. This sludge can contain PFAS, microplastics and other substances harmful to human and ecological health. Please conduct a full, scientific review of the composition of the sludge, its impacts and its application.

Response to I-34

Thank you for your comment. Please see the response at the start of this [section](#), as well as the response to comments [I-15](#) and [O-2](#).

Comment I-35: Mari O'Neill

Submit Method: Website

The State of Washington must cease issuing and nullify any permit that allows the disposal of municipal sewage sludge in any form on homes, farmland, forestland or parkland. Inform the WA state legislature that using toxic municipal sewage sludge as fertilizer is not a "beneficial use" of sewage sludge (RCW 70A.226.005). The Dept. for decades has hidden behind the legislature's purely political, shockingly unscientific declaration of that beneficial use as its excuse for brazenly promoting and facilitating the pollution of millions of acres of farmland and the food produced on it as well as surrounding wildlife habitat and surface and ground waters with sewage sludge.

Response to I-35

Thank you for your comment. Please see the response at the start of this [section](#), as well as the response to comments [I-15](#) and [O-2](#).

Comment I-36: Jean Mann

Submit Method: Website

The application of sewage biosolids does not have "nonsignificant impact," as evidenced by the State of Maine's experience with the degradation of agricultural lands in that state. Washington State needs to avoid similar negative effects in our state.

Response to I-36

Thank you for your comment. Please see the response at the start of this comment review section, as well as the response to comments [I-15](#) and [O-2](#).

Comment I-42: LaVon Stiles

Submit Method: Website

I am a concerned citizen who lives in Lincoln County, WA. I am appalled that sewage sludge dumping has been allowed to continue! It greatly affects the Mill Canyon area where people live and food is grown and this topic in this area is considered insignificant? It is extremely significant because it affects people's lives, health, food grown, water sources, and more. The people have valid concerns so listen and do what is right and cease the sewage sludge dumping. If an investigation needs to be done, do it, and start checking the soil where the lower Mill Canyon people live and go uphill from there. The residents are smart and have a good idea where the sludge is coming from so hear them, value them, and check on it. No permits for sewage sludge dumping should be allowed in this area until a decision is made.

Response to I-42

Thank you for your comment. The public may comment on individual sites during a specific comment period for that individual permit application and approval process. Commenters can also contact staff in the appropriate regional office with concerns about a specific site related to permitting status, operations, or compliance.

In addition to the response at the start of this [section](#), please also see response to comments [I-15](#) and [O-2](#).

Comment O-2: RE Sources, Kirsten McDade

Submit Method: Website

Text copied from document attached to submission.

Thank you for taking the time to consider our comments on the SEPA Determination of Nonsignificance for the Draft Biosolids General Permit. We still believe that the known and unknown risks of toxic contaminants inherently found in biosolids is too risky to allow biosolids to be applied to land in any fashion. We do not believe that the new information provided by Ecology justifies reversing the 2024 ruling from the Pollution Control Hearings Board that found the 2022 draft Permit DNS in violation of SEPA. **We believe the current SEPA should be a Determination of Significance and that an Environmental Impact Statement be carried out to assess the full impacts.**

RE Sources is a non-profit organization located in northwest Washington and founded in 1982. We mobilize people in Northwest Washington to build just and thriving communities and to protect the land, water and climate on which we all depend. Our priority programs include Protecting the Salish Sea, Freshwater Restoration, Climate Action, and Fighting Pollution—all critical issues affecting our region. Our North Sound Baykeeper is also a member of the Waterkeeper Alliance, with over 300 organizations in 34 countries around the world that promote fishable, swimmable, drinkable water. RE Sources has thousands of supporters in Whatcom, Skagit, and San Juan counties, and we submit these comments on their behalf.

Tracking and Monitoring Contaminants

Successfully assessing and monitoring environmental impacts of chemical contaminants requires that the location of the contaminant is known and monitored. Neither of these conditions are met with the Draft Biosolids Permit. Biosolids are used across Washington state and are not fully mapped nor tracked. Providing biosolids products to private citizens via brands such as Tagro makes tracking impossible. There is no requirement to monitor so that is not done. It is not surprising that we need more sufficient data to assess the safety of biosolids as there are no systems currently in place that do so. While Washington State does not have any known PFAS manufacturing facilities there is known PFAS contamination. PFAS in some instances can be tracked to known sources such as fire stations and military bases but other detections have unknown sources. For example, Squalicum Creek in Bellingham, WA had a PFAS detection of 31 ppm in Nov 2022. We have been unable to track the source of the PFAS. This exemplifies the unknowns associated with PFAS and other contaminants and means there could be higher than expected contaminant levels in our waste stream at any given time.

Do No Harm Policy

Ecology recognizes that biosolids contain chemical contaminants. They state, “Biosolids are an unavoidable byproduct of our municipal wastewater treatment facilities. As such they can contain contaminants from up stream, pre-wastewater treatment sources, including from products that we encounter on a regular basis.” However, Ecology does not believe that the contaminants in the biosolids pose a health or environmental risk as exemplified by the following statement: “Reissuing the General Permit is not likely to cause an increase in discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise due to the nature of biosolids operations as well as mitigation efforts built into the general permit.”

The statements above appear to contradict each other. How can there be contaminants present in biosolids but no release to the environment? How do we know if they don't pose harm unless we monitor our soils and environmental health? How is Ecology addressing PFAS, PBDEs, and microplastics that are ubiquitous in biosolids and a known health hazard? The Pollution Control Hearing Board directed Ecology to address this in the new permit, there has not been substantial change in the permit to address this so the original ruling should stand. Ecology's role is to protect the environment from pollution and they should always err on the side of caution.

Comprehensive safety tests on chemicals are not performed in the U.S. before they are used and released to the environment. Current environmental regulations often assume a chemical is benign until proven otherwise. This has resulted in people and the environment being exposed to thousands of unregulated contaminants with unknown consequences.

The SEPA Checklist shows that Ecology also espouses this philosophy. When writing about PFAS it states: “The continued and evolving work being conducted on PFAS and biosolids is evidence that we don’t have all the necessary information yet to determine whether regulatory action is necessary.” When writing about microplastics it states “Additional peer-reviewed work that is replicable and representative of real-life biosolids land application is needed to better understand MPs levels in biosolids and their fate and transport in the environment from land application of biosolids.” Despite these unknowns Ecology is willing to continue the landspreading of contaminated biosolids. Ignorance is not an excuse to continue with the status quo.

Ecology needs to take a more proactive approach to protecting people and the environment from chemical contamination. We do not allow pharmaceuticals to be used until they have been rigorously tested and shown to be safe and even with those safety measures, medicines are sometimes recalled. Pharmaceuticals are often prescribed in very specific dosages to specific individuals, however, when released into the environment via biosolids they will be present in unknown quantities at unknown times. The principal association with pharmaceuticals needs to apply to our environmental practices as well; biosolids application needs to be proven safe before it is allowed to be released into the environment.

WWTPs are Contaminant Sinks and Biosolids Need to be Phased Out

It is no secret that wastewater treatment plants (WWTP) are reservoirs for toxic contaminants. It is then the WWTP’s role to ensure that the contaminants are properly disposed of, not recirculated into the environment. WWTPs are a perfect place to properly remove and dispose of chemicals that have entered this system. Releasing these chemicals back into the environment defies common sense. In addition, anaerobic digesters that are used to make biosolids also increase the amount of nitrogen that is discharged into the liquid waste stream. Anthropogenic nitrogen is responsible for the decreasing dissolved oxygen levels in the Salish Sea and is now being regulated by a Nutrient Permit. Biosolid production, therefore, puts more strain on wastewater treatment plants in regards to nutrient management and removal. Removing nitrogen is very expensive.

We understand that biosolid production can not halt overnight but we can begin to phase this system out. Recognizing that we need to find more sustainable solids management practices and proving a timeline to accomplish this should be incorporated into the permit. Alternately, all contaminants need to be filtered out and nutrients need to be managed.

Increased Transparency and Labeling

People have the right to know if the compost they are purchasing comes from sewage sludge or if the food they are consuming was grown in sewage sludge. Currently, there is not sufficient labeling or access to this information. If Ecology insists that contaminated biosolids continue to be used and spread in Washington state then the residents deserve to know where this contamination may exist and then know how to avoid it if they choose.

Too many Knowns and Unknowns = SEPA Determination of Significance

We know that biosolids contain toxic contamination and we know when we spread biosolids on the landscape that the contaminants can spread into our soils, food, water, and air. Persistent chemicals will persist for a very long time and continue to circulate in the environment. We don't fully understand how many chemicals and to what degree are in sewage sludge nor how a chemical will affect individual people or different species. There have been no long term studies to prove that biosolids are benign.

We also don't have protective measures in place to ensure that chemicals in biosolids don't migrate away from the point of application. We don't regularly monitor biosolids and buffer requirements are slack. Ten meter buffers are not adequate for filtering out contaminants on the west side of the Cascade Mountains and larger than 10 meter buffers are rare.

Thank you for your time in reading our comments and considering a **SEPA Determination of Significance** for the draft Biosolids General Permit where a full **EIS** should be conducted.

Response to O-2

Thank you for your comment. Biosolids are a byproduct of the wastewater treatment system and cannot merely be phased out as the commenter suggests. As such, there must be a sustainable management practice for biosolids. Ecology's legislative mandate is to ensure the beneficial use of biosolids in a manner that minimizes risk to human health and the environment. As discussed in the general response, at the start of this comment review section, available science shows that beneficial use is the most appropriate management practice. The presence of a substance does not mean there is a risk that requires the regulation of biosolids as a solution. The fundamental determinant is mathematical: risk is equal to hazard - how dangerous something is, multiplied by exposure - how much you eat, breathe, or contact on your skin. Many substances have some degree of hazard associated with them. It can be quite complex to determine how much exposure occurs to target individuals in certain circumstances. Ecology lacks the resources to conduct such a robust risk assessment and instead relies on the Environmental Protection Agency (EPA) for this type of work.

Research has been conducted looking at the potential exposure to pharmaceuticals and personal care products (PCPs) from biosolids beneficial use and have concluded there is minimal potential for human health risks. Exposure from to pharmaceuticals and PCPs in biosolids is much lower than that of home exposure. One study²⁴ looked at other available literature and

²⁴ <https://access.onlinelibrary.wiley.com/doi/10.2134/urbanag2018.12.0005>

conducted their own study on exposure to these chemicals from biosolids. They looked at concentrations of common pharmaceuticals that have been found in biosolids, crop uptake, and exposure pathway to equate the relative exposure from biosolids and crops grown in biosolids. They found to receive the equivalent acetaminophen from two Tylenol extra strength tablets from biosolids, one would have to consume almost 30 wet tons of biosolids. That's two large truckloads of biosolids through direct consumption. They also looked at triclosan, an antifungal and antibacterial agent added to many PCPs like toothpaste, soap, and detergents. The study found that to receive the equivalent of one therapeutic dose of triclosan from potatoes grown in soils amended with biosolids (where the edible part of the plant makes direct, extended contact with biosolids), one would need to consume an estimated 3.8 tons of these potatoes.

Exceptional Quality (EQ) biosolids when sold or given away must contain appropriate labeling (per rule WAC 173-308-260²) and follow permit requirements that indicate to consumers that it is a biosolids product. This information is required to be included with each bag or container of EQ biosolids so that the consumer can make an informed purchase. The label information includes but is not limited to:

- identifying that the product contains or is derived from biosolids
- identifying the generator or preparer of the biosolids
- agronomic rates to typical applications or guidance on how to determine this
- information encouraging proper use

Buffers are an example of a permit parameter that is adjusted based on site specific characteristics. If people feel the prescribed buffers are inadequate, they can comment on individual land application proposals about buffers specific to each site.

In addition to the response above and the general response to this topic at the start of this [section](#), there are several other sections in this document that speak to this comment. Please also see the response to comment [O-5](#), the Key Topics titled "[Wastewater Treatment Plants are Passive Receivers of Contaminants of emerging concern, Not Generators](#)" for comments about wastewater treatment plants being "reservoirs for toxic contaminants" and the appropriateness of charging these facilities with removing all contaminants from upstream sources. Please see the Key Topic titled "[Pollution Control Hearings Board Decision Interpretation](#)" for comments about what the Boards' motion for summary judgement remanded Ecology to do.

Comment T-2: Spokane Tribe of Indians, Chad McCrea

Submit Method: Website

The Tribe does not come under the State's jurisdiction in this matter; however, we are a downstream interest who is currently affected by the State's current loose upstream management practices associated with dangerous or hazardous waste. The Tribe is not in agreement with the concept of a "statewide permit" and believes each facility proposing to produce biosolids, should be regulated under site-specific permits. The Statewide permitting system relies on the honor system which has been shown, unsurprisingly, to be deeply flawed.

It also is not clear why the proposed draft Biosolids General Permit and SEPA evaluation contain no requirement for monitoring of PFAS, microplastics, Quinone 6PPD, or other contaminants of concern. While cursory studies are being conducted on the levels of these compounds in biosolids; it seems premature to conclude that there is a DNS. EPA, WADOE, and the Tribe, is aware of the risk posed by PFAS and other hazardous substances in biosolids. EPA designated perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) in April 2024. Land application of biosolids for agricultural purposes is no longer considered a safe process with application sites likely requiring future regulation under CERCLA on Tribal lands and by MTCA on State lands.

On April 10, 2024, EPA announced the final National Primary Drinking Water Regulation (NPDWR) for only six PFAS of the more than 15,000 compounds considered PFAS. For the WDOE to conclude that there is not a finding significance under SEPA, and "this permitting program does not hold potential impacts" is concerning. Especially when considering recent human health-based regulatory actions for PFAS/PFOA.

We urge the WDOE to cease issuing a DNS, and provide meaningful consultation directed to help us understand the potential impacts to Tribal communities, lands, and natural resources. Sincerely, Chad M. McCrea Spokane Tribe, DNR Director

Response to T-2

Thank you for your comment.

Individual permits

For an explanation about the structure of the General Permit and why Ecology feels it is a better management option than individual permits see the Key Topic Discussion titled "General vs. individual permits and expediting coverage" in the Response to Comments on the General Permit published in 2022⁷ (pages 21-23).

Ecology can incorporate additional or more stringent requirements to any facility as a condition of final coverage. In this way the General Permit's flexible structure allows for coverage tailored to each individual facility and site. Coverage issued under the general permit takes advantage of the oversight of an individual permit, while streamlining the process to eliminate administrative burden for many facilities. This also increases permitting efficiency for Ecology.

As discussed throughout the Checklist¹ (pages 7-11, 15, 25, 27, 28, 29), the ability to require additional conditions based on site-specific review incorporates mitigation efforts throughout the permitting process. The Checklist also speaks to examples of these mitigation efforts and points to guidelines^{19 20 21 22} in defining site-specific conditions.

6PPD-quinone

As laid out in the Checklist¹ (pages 18-19 under the heading “Contaminants of emerging concern”), research about contaminants and their fate and transport is necessary to inform regulatory decisions. In comparison to the progress made to date on PBDEs, PFAS, and microplastics, 6PPD-quinone is an example of a Contaminant of Emerging Concern (CEC) that less is known about at this point than microplastics. Just as the science is too young on microplastics to determine whether regulatory action is required with respect to biosolids, we are even further from this stage with respect to 6PPD-quinone.

Ecology has put together an initial working group to start looking into 6PPD-quinone and learn about its source (tires) and potential environmental impacts as done with other CECs previously²⁵. Ecology bases policy decisions on peer-reviewed literature. If additional CECs requiring regulation are identified, Ecology can modify the rules to implement these requirements when risk-based assessments and reliable peer-reviewed literature shows this.

CERCLA and MTCA

The General Permit applies to facilities located on, and biosolids management activities that occur on lands under the jurisdiction of the state of Washington. This excludes federal and Tribal lands. The EPA oversees these operations directly. As the commenter notes, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is the cleanup law that takes precedent on Tribal lands and is carried out by EPA.

When the EPA designated PFOS and PFOA as a hazardous substances under CERCLA, they also issued the PFAS Enforcement Discretion and Settlement Policy Under CERCLA²⁶. This enforcement guide is intended to provide “direction to all EPA enforcement and compliance staff about how EPA will exercise its enforcement discretion under CERCLA in matters involving PFAS” (page 2). In this guidance document the EPA clarifies that they don’t intend to pursue certain parties where “equitable factors do not support seeking response actions or costs” including community water systems and Publicly Owned Treatment Works and locations where biosolids are applied to the land (page 3).

Drinking Water Standards

It is not appropriate to compare drinking water standards regulations to biosolids, as biosolids are not intended for direct consumption like water is. This comparison is inappropriate given the complex and attenuated exposure pathways for contaminants from land applied biosolids to end up in waters of the state. Biosolids exposure

²⁵ <https://ecology.wa.gov/waste-toxics/reducing-toxic-chemicals/addressing-priority-toxic-chemicals/6ppd>

²⁶ <https://www.epa.gov/system/files/documents/2024-04/pfas-enforcement-discretion-settlement-policy-cercla.pdf>

pathways are distinct from drinking water. Please see the Key Topic Discussion titled "Consequences of ceasing all biosolids land application" in the Response to Comments on the General Permit for Biosolids Management published in 2022⁷ (pages 19-21) for more information.

Cease Land Application

Ecology received 26 comments sharing concern or disagreement with the practice of land applying biosolids. Below is a response to these comments and additional responses are provided to some of the more detailed or nuanced comments on this topic as well.

A large amount of research has been done in support of beneficial use activities. Research shows that plants and soils benefit from the land application of biosolids^{27 28 29 30}. Additional research is continuously being conducted as questions about safety or best practices arise with respect to contaminants of emerging concern (CECs). This has been the practice in this field since it's conception. The bulk of research and practical experience support that beneficial use of biosolids is safe when rules and permit requirements are followed. The levels of PFAS typically found in biosolids generated from municipal wastewater treatment plants without industrial contamination pose a very low risk to human health and the environment. It is biosolids that are industrially contaminated with very high levels of PFAS from specific industries that can pose more serious risks. These industrially contaminated biosolids represent a very small portion of the biosolids generated in the US and are unlikely to be found in Washington state.

Ecology spoke to the risks of ceasing land application and availability and appropriateness of alternative disposal options in several other places we recommend the commenters review. Please see the Checklist¹ (page 3), the general response under the topic "Argues DNS is Inadequate" in this response document, and the Key Topic Discussion titled "Consequences of ceasing all biosolids land application" in the Response to Comments on the General Permit for Biosolids Management published in 2022⁷ (pages 19-21). Please also review the key topic discussions at the start of this document titled "Wastewater Treatment Plants are Passive Receivers, Not Generators" and "Pollution Control Hearings Board Decision Interpretation".

Comment I-1: Harry Branch

Submit Method: Website

Plastics and PFAS chemicals are a growing concern. We need to know and understand evolving sources and pathways.

Response to I-1

Thank you for your comment. Ecology agrees that the understanding of PFAS is evolving, and that more information is needed to determine if regulatory action is warranted, and if so, what that looks like.

²⁷ <https://www.sciencedirect.com/science/article/abs/pii/S004896972103415X?via%3Dihub>

²⁸ <https://www.mdpi.com/2073-4395/11/7/1339>

²⁹ <https://pubs.acs.org/doi/epdf/10.1021/es101210k>

³⁰ <https://www.epa.gov/sites/default/files/2015-05/documents/biosolidswhitepaper-uwash.pdf>

Please also review the general response to this topic [previously](#).

Comment I-2: S. Leigh Ost

Submit Method: Website

So-called "forever chemicals" such as heavy metals, should NEVER be considered for spreading on land, agricultural or otherwise. Exposure to rain and snow melt, plus transmission by wind during dry periods, exposes all life forms to these life-threatening hazards.

NO municipal waste or industrial waste of any kind should ever be put upon land or near water sources.

Response to I-2

Thank you for your comment. Please refer to the Key Topic titled "[Wastewater Treatment Plants are Passive Receivers, Not Generators](#)" for the response to your comments about the ubiquity of PFAS in the environment today.

Currently, biosolids must meet regulatory limits for 9 pollutants, most of which are heavy metals, to be allowed for land application. These limits were established at the onset of the EPA's biosolids program decades ago, because they were found to be both present in biosolids and could result in harm to human health and the environment at the levels they were found to be present. Since then, due to source reduction actions, we've seen the presence of these pollutants in biosolids reduce drastically. Ecology is working on source reduction of PFAS to reduce their presence in biosolids in the same way. See the response to comment [O-5](#) for more information about Ecology's efforts. This is addressed further in the Response to Comments on the General Permit for Biosolids Management published in 2022⁷. Please refer to the Key Topic Discussion titled "Heavy metals in biosolids", page 14.

Please also review the general response to this topic [previously](#).

Comment I-3: JORDAN COHEN

Submit Method: Website

I support Ecology's decision to prohibit the spread of biosolids. Please prioritize addressing the root cause of the contamination. I hope that we see the necessity of finding solutions to the ubiquity of microplastics and PFAs in biosolids rather than contaminating our farmland in Washington. Thank you

Response to I-3-1

Thank you for your comment. Please see the response to comment [I-2](#) as well as the general response to this topic [previously](#).

Comment I-5: DIANE EMERSON

Submit Method: Website

I worked in the specialty chemical industry for 17 years. The kinds of chemicals that ended up going down the drain, to the local sewage treatment plant, and then into the Mississippi River, should never have been allowed to happen. But it did. And it does. Here is just one example, in Seattle: Seattle barrel company used 'hidden drain' to dump caustic material into sewer, federal prosecutors say. Dec. 18, 2019 in the Seattle Times. The many unknown chemicals which can cause harm to humans and all other life forms which are found in sewage sludge means that it should never be allowed to be spread on soil. The harm of sewage sludge is well documented. We need to move toward waterless compost toilets, which could truly be used for fertilizer. After all, I don't put drain cleaner on my cornflakes in the morning. I have used a compost toilet for 10 years now, with no problem. No odor, no danger, no water, and fine fertilizer.

Response to I-5

Thank you for your comment. While these situations of improper disposal are disheartening and dangerous, wastewater treatment plants should not be held responsible for others' fraudulent actions. The incident described in the comment above is also a good example of the regulatory systems in place working appropriately to catch those who are operating out of compliance and agencies acting. Pretreatment programs are an important tool to reduce contaminants before they reach the wastewater treatment plant. This is addressed in the Checklist¹ under the heading "Source Reduction" (page 23).

While it is not feasible for the entire state of Washington to replace the robust wastewater treatment facilities with composting toilets, Ecology supports the use of waterless toilets and appropriate handling of materials generated by them (WAC 173-308-193²).

Please also review the general response to this topic [previously](#).

Comment I-10: Marguerite Winkel

Submit Method: Website

Biosolids contaminated with toxins, offal and heavy metals, etc. should never be recycled to the soil, air or waters for any reason, near to any food source that grows for consumption by any being in the food chain. There is no proper containment in place nor funding from the offending industries to ameliorate the damage that has already been done. These policies that encourage and allow the further contamination of the Earth for the economic benefit of the industries that generate the harm and those that have so little wisdom and care for the planet and fellow inhabitants need to pay for harm they have already done and be very closely and thoroughly watched while they pay for actual ways to ameliorate the harm they do. Regulatory agencies have done enough supporting industries and need to start supporting life and health instead, not some antiquated failed promises of the toxics industries.

Response to I-10

Thank you for your comment. Ecology agrees source reduction will have the largest impact in reducing potential exposure to PFAS from biosolids. There are actions being taken across the agency to reduce exposure through source reduction, including Ecology's Safer Products for Washington program³¹, phasing out the use of PFAS containing food packaging³², and switching away from firefighting foams that contain PFAS³³. In addition, Ecology's Water Quality program oversees the National Pretreatment Program for Wastewater Treatment Plants in Washington state. This program implements requirements aimed at minimizing industrial discharges to wastewater treatment plants. They have begun to implement monitoring and source identification requirements in National Pollution Discharge Elimination System (NPDES) and State Waste Discharge (SWD) permits as appropriate per Ecology's PFAS Chemical Action Plan (CAP)³⁴ and EPA's 2022 Memo³⁵. This includes identifying known or suspected upstream industrial dischargers, PFAS monitoring, and working with businesses and industry to identify source reduction opportunities and encourage implementation.

In addition, please see the response to comment [I-12](#) and [I-2](#) with respect to your mention of medicines in biosolids; also review the general response to this topic [previously](#).

Comment I-12: Jese Whorton

Submit Method: Website

Please recall and cease to issue permits allowing municipal sewage to be distributed on farms, parks and areas used for food production or public use! Humans ingest far too many chemicals and drugs for their waste to be considered acceptable for any of these uses. Please, please protect our children and generations to come from the toxic dangers of these practices!

Response to I-12

Thank you for your comment. In addition to the general response to this topic previously, please also review the response to comment [O-2](#) for discussion on the potential for pharmaceuticals to be present in biosolids and risk of exposure to pharmaceuticals from biosolids land application.

Comment I-13: Dwayne Haus, N.D.

Submit Method: Website

³¹ <https://ecology.wa.gov/waste-toxics/reducing-toxic-chemicals/washingtons-toxics-in-products-laws/safer-products>

³² <https://ecology.wa.gov/waste-toxics/reducing-toxic-chemicals/washingtons-toxics-in-products-laws/pfas-in-food-packaging>

³³ <https://ecology.wa.gov/waste-toxics/reducing-toxic-chemicals/washingtons-toxics-in-products-laws/toxics-in-firefighting>

³⁴ <https://apps.ecology.wa.gov/publications/documents/2104048.pdf>

³⁵ https://www.epa.gov/system/files/documents/2022-12/NPDES_PFAS_State%20Memo_December_2022.pdf

Bio-Soil is not soil and it is not normal animal manure being applied. Instead a toxic combination is being used and it is creating health issues.

Response to I-13

Thank you for your comment. It is important to keep in mind that animal manures are more widely used on crops with fewer regulatory requirements in comparison to biosolids. Although animal manures have on rare occasions been positively linked with outbreaks of illnesses, it is commonly understood that their benefits on crop growth and soil maintenance outweighs this drawback.

Source reduction efforts are addressed in the Checklist¹ under the heading "Source Reduction" (page 23). Regulated pollutants in biosolids are also addressed in the Key Topic Discussion titled "Heavy metals in biosolids" in the Response to Comments on the General Permit for Biosolids Management published in 2022⁷ (page 14). Please also review the general response to this topic [previously](#).

Comment I-14: Meagan Dunn

Submit Method: Website

Using sewage sludge is not healthy for humans because of the long lasting effects of PFAS, medicines and other forever chemicals. Stop issuing permits that allow the disposal of municipal sewage sludge on homes, farmland, forests and parkland.

Response to I-14

Thank you for your comment. In addition to the general response to this topic [previously](#), please also review the response to comment [O-2](#) for discussion on the potential for pharmaceuticals to be present in biosolids and risk of exposure to pharmaceuticals from biosolids land application.

Comment I-16: Michael Laurie

Submit Method: Website

Ecology being reissued a SEPA Determination of Nonsignificance for the Draft Biosolids General Permit on September 27, 2024, ignores a growing body of evidence pointing to both the wide range of toxic chemicals in sewage sludge (biosolids) and the harmful impacts from their buildup in soil when they are used as a fertilizer especially on farms and gardens. So, I oppose this determination. And I oppose the use of biosolids on any land in Washington state other than a certified toxic waste facility. It is time for Ecology to stop ignoring the science. I get that Ecology likely does ignore the science because doing the right thing would create a major cost for all the wastewater treatment plants around the state. But the Department of Ecology should be putting the interests of the citizens of the state first and not the wastewater treatment plants.

Response to I-16

Thank you for your comment. Ecology reviewed available data from reputable sources in conducting the State Environmental Policy Act review for the draft general permit for biosolids

management. Please refer to referenced studies and bodies of work in the Checklist and provided copies of those that are not as readily available online.

Please also review the general response to this topic [previously](#) as well as the general response to the topic Argues Determination of Nonsignificance Inadequate in this response document.

Comment I-17: JOSEPH A BARRECA

Submit Method: Website

The links to the SEPA list don't work. What kind of scam are you running here?

Response to I-17

Thank you for your comment. Several people confirmed the links were working appropriately using multiple browsers several times over the course of the comment period. They were confirmed again after receiving your comment and found them still intact. Copies of the Checklist and Determination of Nonsignificance¹ were emailed to you on October 22, 2024, for your review.

Comment I-20: Carrie Anderson

Submit Method: Website

WHY would ANYONE want all the poisons, chemicals, germs, etc. contained in sewer sludge to be SHARED broadly on fields where our food is grown?

Response to I-20

Thank you for your comment, please review the general response to this topic [previously](#).

Comment I-21: Argyle Baukol

Submit Method: Website

Using biosolids on agricultural land and all lands above aquifers is irresponsible and is NOT ECOLOGICAL. These irrevocable decisions to spread waste full of chemicals, contaminants, and microplastics will endanger us and children and the environment for generations to come.

Response to I-21

Thank you for your comment, please review the general response to this topic [previously](#).

Comment I-24: Kirsten Angell

Submit Method: Website

Stop using sewerage sludge as fertilizer. It's not biologically sound or safe. Please do not allow this practice!

Response to I-24

Thank you for your comment, please review the general response to this topic [previously](#).

Comment I-25: Diane Johnson

Submit Method: Website

Please ban the practice of using bio solids for fertilizer on our soils. They are poisoning us.

Response to I-25

Thank you for your comment, please review the general response to this topic [previously](#).

Comment I-26: Maria Mendes

Submit Method: Website

I am opposed to any use of toxic sludge as fertilizer or any other widespread dispersal of it. It will negatively impact any area. The long term effects are not known. To put it simply: this is a very bad harmful idea.

Response to I-26

Thank you for your comment, please review the general response to this topic [previously](#).

Comment I-27: Dianna Michaels

Submit Method: Website

You have not done your due diligence. This is not ecological work. Do not allow biosolids to be used by farmers! Your own testing has proved that this is releasing harmful PFAs into the soil. I beg you to follow your own science and not allow this to happen for the sake of our children, our food, and our planet.

Response to I-27

Thank you for your comment, please review the general response to this topic [previously](#).

Comment I-29: Ian Cunningham

Submit Method: Website

One only need look to the state of Maine, the northeast corner of the U.S., to learn how industrial sewage and compost pollution has been a disaster for the agricultural economy. Disregard science, disregard the toxic nature of our industrial chemical history, disregard the long term health of every living being - at Washington's peril. Biosolids are hazardous, not "nonsignificant."

Response to I-29

Thank you for your comment. High levels of PFAS found in Maine and other states not being representative of typical biosolids PFAS levels is addressed in the Checklist¹ (pages 21, 23-24). Those incidents are outliers due to industrial contamination, and not events expected in Washington state. Please also review the general response to this topic [previously](#).

Comment I-30: Jayne Marek

Submit Method: Website

Sewage sludge must not be used! It is a contaminant. Human waste is different from other bio fertilizers. Do not permit this!

Response to I-30

Thank you for your comment, please review the general response to this topic [previously](#).

Comment I-31: Eleanor Mattice

Submit Method: Website

Even though contaminants might be at low levels they might bioaccumulate. Have we studied the long-term impact on soil health and transference of contaminants to crops? Humans and wildlife are exposed to so many chemicals we certainly don't need anymore exposure. I urge extreme caution about using biosolid waste on our croplands.

Response to I-31

Thank you for your comment. In addition to the general response to this topic [previously](#), please also review the Checklist¹ info about the current state of science on contaminants of emerging concern (CECs) (pages 17-29).

Comment I-32: Richard Taylor

Submit Method: Website

I don't think we should take the chance of possibly soiling the ground with biosolids and adversely affecting the microbiome of the soil and worms.

Response to I-32

Thank you for your comment. In addition to the general response to this topic [previously](#), please also review the Checklist¹ info about the current state of science on contaminants of emerging concern (CECs) (pages 17-29).

Comment I-33: Eleanor Mattice

Submit Method: Website

I am concerned about the long-term effect of the biosolid contaminants on the health of the soil, crops and humans. We should not use biosolids until enough time has passed to thoroughly test biosolids for the effects. The contaminants could bioaccumulate and there is enough of these "forever" chemicals. Thank you.

Response to I-33

Thank you for your comment. In addition to the general response to this topic [previously](#), please also review the Checklist¹ info about the current state of science on contaminants of emerging concern (CECs) (pages 17-29).

Comment I-37: ANN MCCORMICK

Submit Method: Website

I wish to make it clear that I emphatically DO NOT support the use of municipal sewage sludge as fertilizer. That is frightening. It is 100% clear and obvious that human waste includes so many elements harmful - or at least unknown - to us, to our earth and to wildlife. There needs to be a

better system for filtering for these substances to limit as much as possible their spread throughout our collective environment. This presenting problem deserves significant, researched consideration to arrive at a reasoned and thoughtful solution. Thank you.

Response to I-37

Thank you for your comment. Ecology agrees significant research and consideration for this topic is warranted to arrive at a science-based solution. We've laid out the research reviewed to date on contaminants of emerging concern (CECs) in biosolids in the Checklist¹ (pages 17-29). Please also review the general response to this topic [previously](#).

Comment I-39: Hilary Ohm

Submit Method: Website

Please reconsider allowing sewage to be used for agriculture purposes. As a citizen who is very concerned about the environment, wildlife and human health, I oppose the use of human sewage on farmland and I respectfully request that you do the same. Thank you, Hilary Ohm, Colville, WA

Response to I-39

Thank you for your comment, please review the general response to this topic [previously](#).

Comment I-40: Alex Tu

Submit Method: Website

Use of biosolids has known long term consequences that negatively affect the economy and future agriculture of an area.

Response to I-40

Thank you for your comment, please review the general response to this topic [previously](#).

Comment I-41: Denise Ebbighausen

Submit Method: Website

Text copied from document attached to submission.

I disagree that using municipal sewage sludge as fertilizer is currently not safe because there are too many unknowns to risk the health of our soils and ground water. After reviewing the RCW 70A.226.005, the Department of Ecology State of Washington Biosolids, and the U.S. Environmental Protection Agency, "Introduction to the National Pretreatment Program, just brought up more concerns which are underlined below:

Extract of 70A.226.005 – Findings – Municipal sewage sludge as a beneficial commodity Under the legislature finds that:

Subparagraph e - Municipal sewage sludge can contain metals and microorganisms that, under certain circumstances, may pose a risk to public health.

An extract from the Department of Ecology State of Washington, "Is it safe to use biosolids?" While studies are ongoing to fill information gaps in the chemical composition of biosolids, they are a beneficial product resulting from treating domestic sewage in a wastewater treatment facility.

U.S. Environmental Protection Agency, Introduction to the National Pretreatment Program. The preface extracts that are of interest:

- The goals of the CWA, Clean Water Act, are to eliminate the introduction of pollutants into the national navigable waters.
- Even when a POTW, Publicly Owned Treatment Works, has the capability to remove toxic pollutants from wastewater, the pollutants can end up in the POTW's sewage sludge, which might then be processed into a fertilizer or soil conditioner that is land-applied to food crops, parks, golf courses or elsewhere.

Based on my brief research and concerns above, it does not make sense to risk our soils and ground water to unknown contaminants which could have long term effects. An example is the West Plains PFAS contamination of over 300 wells in that area.

The CWA addresses only navigable waters. What about protecting groundwater? Plus the RCW Title 70A is Environmental Health and Safety, which should be the priority in any decisions.

Thank you for your time and appreciate the opportunity to provide feedback.

Response to I-41

Thank you for your comment. In addition to the general response to this topic above, please refer to the Checklist¹ about the current state of science on contaminants of emerging concern (CECs) (pages 17-29). This review was compiled based on extensive research and technical understanding of this topic.

The comments with respect to current PFAS contamination in Washington state are outside the scope of this comment period as they are not associated with biosolids land application. The PFAS contamination incident in West Plains, Washington is the focus of current investigation by EPA, Ecology and other state agencies. The potential sources of PFAS contamination identified include Fairchild Air Force Base and Spokane International Airport and is likely a result of extensive historical use of firefighting foam (Aqueous Film Forming Foam or AFFF) that contain PFAS. You can find more information about the ongoing efforts in West Plains, on Ecology's webpage.³⁶

Comment I-43: Bob Guenther

Submit Method: Letter

Text copied from letter received by mail.

Thank you for the letter letting me know about the DOE letter to inform me of the decision summary judgement by the Pollution Control Hearings Board.

³⁶ <https://ecology.wa.gov/spills-cleanup/contamination-cleanup/cleanup-sites/west-plains-pfas>

As you may know I have been concerned for years in regard to application of bio-solids land application, you may want to review my case that spelled out a lot of my concern. Case number PCHB No 21-034. I have always believed there may be detrimental results from land application.

I am happy that the DOE continues to work with other states, as you know at least two states has banned land application of bio-solids. I would ask the DOE to consider further testing take place on land that has had land applications for the last 20 years. These test would determine if residual chemicals that are named in this notification are present (Comprehensive test) As I stated in my trial application in the low lands of Lewis County is not acceptable, if material is applied until October 31 the material will run off into the nearby stream during the winter. I also stated the Newaukum site in Lewis County is a aquifer recharge area, with three year round streams running onto the property. The PCHB said there was no water running out of the site during the summer, my question was where is that water going that runs through my acreage? There are areas in August tractors get stuck trying to farm the fields. In my opinion by land application we may be polluting our clean water for future generations and there has to be a better way to dispose of harmful chemicals other than land application.

Response to I-43

Thank you for your comment. Ecology is considering future soil sampling on biosolids land application sites, as resources allow. With respect to comments about case Pollution Control Hearings Board No. 21-034, this was specific to a biosolids land application site. The case has been closed and the Board ruled in Ecology's favor.

Please also review the general response to this topic [previously](#).

In Support

Ecology received 7 comments supporting the State Environmental Policy Act determination of Nonsignificance, included below. These comments echoed their support of science-based policy and the ongoing research being conducted on biosolids and contaminants of emerging concern (CECs).

Comment I-44: Anonymous

Submit Method: Letter

Text copied from letter received by mail.

The department of Ecology does a very competent job managing biosolids. I 100% support the SEPA determination of nonsignificance.

Response to I-44

Thank you for your comment.

Comment O-1: Synagro, Bruce MacLeod

Submit Method: Website

Thank you for providing Synagro Technologies, Inc. (Synagro) with the opportunity to comment on the Department of Ecology's environmental impact analysis findings that resulted in the "determination of nonsignificance" from PFAS in land applied biosolids.

Synagro is the largest recycler of organic by-products in the United States. Synagro annually manages more than 16 million tons of wastewater biosolids and other organic by-products for over 1,000 municipalities in 35 states, including Washington . Our team is dedicated to working with our clients to find the right solution to their organic residuals management challenges. Synagro, and its subsidiaries, are at the forefront of the environmental movement to safely process and market organic residual materials for beneficial uses.

Biosolids are a nutrient-rich end-product of the wastewater solids treatment process that have been treated to ensure beneficial use in agricultural land application. Biosolids provide multiple benefits to overall soil quality and health, including improved moisture absorption ability, recycling of micro and macro nutrients, carbon sequestering, reduced nutrient leaching, and lower use of industrially produced fertilizers.

Biosolids used for land application are carefully tested to meet comprehensive Federal EPA and Department of Ecology standards. These existing regulatory requirements have successfully protected public health, land, and water resources. The requirements include nutrients and metals testing, treatment standards, management practices and reporting obligations. In fact, numerous scientific studies have been conducted for many years on biosolids land application showing that through rigorous treatment, management practices, and regulatory compliance there are many benefits provided to the soil, plants, and environment. As with any other environmental regulation, biosolids regulations should be continuously reviewed and revised as new science and findings are developed

The EPA estimates the U.S. generates about 3.76 million dry tons of biosolids annually, regulated through permitting under Section 503 of the Clean Water Act. Once treated to remove pathogens, over 56% are used in agriculture, land reclamation, and landscaping. They serve as an affordable, effective soil amendment that prevents erosion, resists drought, sequesters carbon, replaces synthetic fertilizers, and strengthens supply chain security for farmers.

Unfortunately, biosolids have been misrepresented and misunderstood due to concerns about PFAS (per- and polyfluoroalkyl substances). There is a concern that any concentration of PFAS could have harmful impacts on public health, but there is currently no scientific evidence that everyday concentrations that may be found in biosolids or wastewater carry these impacts. The mere presence of PFAS in the environment, although it is ubiquitous and found at significantly higher concentrations in everyday commercial household products than in biosolids, has nevertheless led to questions regarding biosolids land application.

EPA is in the process of evaluating whether a rulemaking under Clean Water Act Section 405(d) is warranted should PFAS concentrations in biosolids be found to pose a risk to human health or the environment. The risk assessment portion of the regulatory development is currently underway and is expected to be published by the end of 2024. This is a necessary first step to determine whether regulation of these PFAS in biosolids is warranted under the Clean Water Act.

After the risk assessment is complete, the EPA will engage in risk management to decide how to manage PFAS in biosolids, if necessary. EPA will use the results of the risk assessment in addition to consideration of other factors including economics and technological feasibility in the rule making process. Synagro strongly encourages the Department of Ecology to take advantage of EPA's final science-based rule adoption before developing any regulation of PFAS in biosolids. If Department of Ecology decides to adopt biosolids regulations for PFAS prior to EPA's rule development Department of Ecology should refer to adopted regulations in Michigan and New York that attempts to address PFAS in land applied biosolids.

Research indicates that PFAS in soil and water from biosolids poses a low health risk unless contaminated by high PFAS levels from specific industrial sources. Industrially impacted biosolids represent only an extremely small amount of the biosolids generated. These biosolids should not be land applied. Department of Ecology should advocate for product substitution legislation and adopt industrial pretreatment/source control regulations.

Municipal wastewater municipalities are critical entities for safeguarding public health and the environment. These utilities are not the generators of PFAS but are blameless "passive receivers". Prohibitions based on the mere presence of PFAS and not on actual risk have forced municipal wastewater utilities to seek more burdensome, expensive, and limited biosolids management alternatives (e.g., landfill disposal) that do not necessarily provide enhanced environmental benefits. This underscores the importance of developing and preserving a range of viable and environmentally beneficial biosolids management options. Synagro appreciates

the extensive research and thorough analysis completed by Washington Department of Ecology and supports the findings and conclusions and continued support for biosolids recycling.

Response to O-1

Thank you for your comment.

Comment O-3: NorthWest Biosolids, MacLeod Pappidas

Submit Method: Website

Thank you for the opportunity to comment on the State Environmental Policy Act threshold determination for the Statewide General Permit for Biosolids Management. At Northwest Biosolids, our mission is to advance environmental sustainability through the beneficial use of biosolids.

We encourage the Pollution Control Hearing Board to accept the Department of Ecology's findings and allow the General Permit to be implemented.

NW Biosolids shares concern over PFAS, PBDE's and microplastics. These compounds have been introduced into consumer products, water, and wastewater systems for decades, leading to contamination of our soils and waterways. This realization is profoundly disheartening, as it impacts us all. It is important to note, however, that wastewater treatment plants are passive receivers of these chemicals. They do not produce PFAS, PBDE's or microplastics. It is also important to note the role biosolids play in agricultural and environmental sustainability. Decades of research shows that biosolids build soil health by returning nutrients and organic matter back to the land, mitigating soil erosion and nutrient leaching, and reducing farmers' dependence on synthetic fertilizers.

Biosolids also help in the fight against climate change by directly and indirectly decreasing CO₂ in the atmosphere by sequestering it in soil. Proper land application of biosolids conserves limited landfill capacity and reduces potential greenhouse gas emissions from anaerobic decomposition in landfills.

NW Biosolids believes any policy decisions must be science-based, and therefore supports ongoing research into these emerging contaminants. Thorough, scientifically rigorous and peer-reviewed studies must inform policy. Thank you for your consideration

Response to O-3

Thank you for your comment.

Comment O-4: The Coalition for Clean Water, Kyle Dorsey

Submit Method: Website

The Coalition for Clean Water appreciates the opportunity to comment on the State Environmental Policy Act threshold determination for the Statewide General Permit for Biosolids Management. Coalition members provide wastewater services for nearly half of Washington's eight million residents and produce more than sixty percent of Washington's

biosolids. We commend Ecology for its work updating the SEPA Checklist and documentation related to the Determination of Nonsignificance (DNS). Our comments follow.

The beneficial use of biosolids is a critical part of delivering essential public health services to the citizens of Washington. Wastewater treatment systems protect human health and the environment and unavoidably generate biosolids as part of that process. Even though biosolids are applied to less than one-tenth of one percent of lands in Washington each year, beneficial use allows wastewater utilities to manage biosolids in a cost-effective, sustainable manner, while providing a rich soil amendment that returns nutrients to the soils where they belong.

As noted by Ecology, "...decades of scientific research have shown that biosolids provide needed nutrients and organic matter to soils for healthy crop and forest production. The use of biosolids reduces the need for synthetic fertilizer, increases soil organic matter content and water retention, and reduces erosion. Biosolids have been shown to improve habitat, which in turn has a positive impact on wildlife. ... biosolids are a proven component of successful land reclamation projects following major disturbances such as mining." Landfilling and incineration are not sustainable practices, do not effectively remove PFAS or other substances from the environment, and rob farmland of essential carbon and nutrients.

Biosolids production will continue to grow as our state's population increases. Maintaining beneficial use is critical to sustainability and resiliency for clean water agencies. Ecology's proposed permit allows for continued implementation of this vital program and allows additional and more stringent conditions as needed for specific facilities and sites. The permit also saves money and resources for communities without active biosolids management programs by fairly reducing the permit process burden.

PBDEs, PFAS and microplastics are not used or manufactured as part of the wastewater treatment process but end up in our waste streams from their use in homes and businesses. These substances are present in biosolids because they reflect our daily lives. PFAS, for example, are present in many household products, including clothing, carpets, cosmetics, and personal hygiene products that directly expose users to far higher concentrations than in biosolids. The ultimate solution to reducing substances of concern in our wastewater and biosolids – and the environment – is to reduce their discharge to public wastewater treatment systems and eliminate their non-essential uses in manufacturing. This means we must focus on the true sources of these substances to address contamination and exposure pathways. Pretreatment source control has been proven to reduce concentrations in wastewater and the environment, and has worked for targeted forms of PFAS in the State of Michigan, an approach supported by U.S. EPA.

We support ongoing research and science-based policy to identify and reduce substances of concern in wastewater and biosolids. The science essential to making informed decisions about biosolids management is complex and evolving. We support the efforts of Ecology, EPA, and the academic community as they work to bridge the knowledge gaps on these emerging contaminants, recognizing the time and investment it takes to develop research that will meet the necessary standards of scientific rigor and peer review. Regulatory decisions must rely on

sound science and good policy that addresses our most critical priorities while weighing risks appropriately.

Response to O-4

Thank you for your comment.

Comment A-1: King County Wastewater Treatment Division, Kamuron Gurol

Submit Method: Website

Text copied from document attached to submission.

Thank you for the opportunity to comment on the Department of Ecology's (ECY) Determination of Nonsignificance (DNS) for the draft Statewide Biosolids General Permit. We appreciate ECY's work to responsibly regulate biosolids land application in Washington state. The King County Wastewater Treatment Division (WTD) serves nearly 2 million people within a 424 square mile service area including most urban areas of King County and parts of Snohomish and Pierce Counties. In 2023, our three regional treatment plants and two community plants treated a combined daily average of 182 million gallons of wastewater, and together produced over 124,000 wet tons of biosolids that were land applied to forests and farms in Washington as a beneficial soil amendment.

We concur with the DNS as issued. The DNS summarizes the benefits of biosolids land application, including decreasing greenhouse gas emissions, and the negative environmental impacts that would result from alternatives to land application. Land application returns valuable nutrients and carbon to the soil, avoids or reduces unnecessary production of commercial fertilizers, provides economic benefits to farmers and foresters, and boosts production of agricultural and forestry products. Application of biosolids also lowers our utility's carbon footprint and saves ratepayer dollars.

The DNS also highlights on-going research into contaminants, including PFAS, a topic of strong interest to King County and many other agencies. The DNS states that current biosolids land application practices are unlikely to constitute a major source of PFAS exposure for humans or the environment. We will continue to rely on science-based guidance to assess pollutant risks as we achieve our mission to protect public health and the environment.

Thank you for the opportunity to comment on the DNS, and we look forward to implementing the Statewide Biosolids General Permit. If you have any questions or need more information, please contact WTD Policy and Research Supervisor Erika Kinno at 206-477-0942.

Response to A-1

Thank you for your comment.

Comment A-2: City of Spokane, Jeff Donovan

Submit Method: Website

Text copied from document attached to submission.

Thank you for the opportunity to submit comments on the State Environmental Policy Act Determination of Nonsignificance for the Draft Biosolids General Permit. The City of Spokane appreciates the efforts of Ecology in continuing to support the beneficial use of Biosolids.

The Riverside Park Water Reclamation Facility (RPWRF) provides tertiary wastewater treatment for approximately 250,000 residents in the City of Spokane and Spokane County and plays a key role in protecting the public health of our community. As with most other wastewater utilities across the state and nation, biosolids are generated as part of the RPWRF treatment process. The City of Spokane works directly with farmers to provide biosolids as a soil amendment and adheres to the requirements set forth by Washington Department of Ecology's statewide General Biosolids Permit, WAC 173-308, and EPA Part 503 rules.

Biosolids are a rich soil amendment that returns nutrients to the soils, while limiting the amount of commercial fertilizer that needs to be applied. Managing biosolids in this way provides a costeffective, sustainable resource to a portion of our local agricultural community.

Landfilling and incineration of biosolids are more costly and do not effectively remove PFAS and other substances from the environment. These alternative disposal options would result in numerous additional environmental and logistical challenges. As Spokane and the state continue to grow, so will the production of biosolids. Ensuring beneficial use of biosolids is key to our community's sustainability and resilience.

While substances like PBDEs, PFAS, and microplastics are not produced by wastewater treatment facilities, they can enter waste streams through everyday products used in households and businesses. For instance, PFAS can be found in items like clothing, carpets, cosmetics, and hygiene products, which directly expose users to higher concentrations than those present in biosolids. Reducing these contaminants in wastewater and biosolids requires addressing the true sources-limiting their use in manufacturing and cutting non-essential applications to decrease discharge into public wastewater systems. Evidence shows that pretreatment source control effectively reduces such contaminants, as seen with targeted PFAS reductions in Michigan. RPWRF has an active pretreatment program, with delegated authority, that regulates wastewater entering the facility from businesses. To date, no manufacturers or active users of PFAS chemicals have been identified that discharge to the RPWRF facility.

The City of Spokane supports ongoing research and science-based policy to better identify and address contaminants of concern in biosolids. The science surrounding biosolids management is complex and evolving. We continue to support Ecology, EPA, and the academic community in their commitment to advancing research that bridges knowledge gaps on these emerging contaminants. As such, we are members of Northwest Biosolids which has been funding research and bringing both regulators and municipalities together annually in a collaborative group setting to discuss current soil science and biosolids management since the L980s. In addition, RPWRF volunteered in Spring 2024 to participate in PFAS research conducted by WA Department of Ecology on the biosolids we produce.

It is essential that regulatory decisions are grounded in rigorous scientific evidence and policies that thoughtfully balance priorities and risks. Once again, we appreciate the opportunity to comment.

Response to A-2

Thank you for your comment.

Comment A-3: Discovery Clean Water Alliance, Kristen Thomas

Submit Method: Website

Text copied from document attached to submission.

The Discovery Clean Water Alliance (Alliance) appreciates the opportunity to comment on the State Environmental Policy Act (SEPA) Determination for the Draft Biosolids General Permit. We commend Ecology for its work in updating the SEPA Checklist and documentation related to the Determination of Nonsignificance (DNS) and for its continued efforts to responsibly manage biosolids in Washington. The Alliance is a regional wastewater transmission and treatment utility serving the central portions of Clark County, Washington, and providing wastewater services to more than 125,000 people. Alliance facilities produce about 10,000 wet tons of biosolids each year that are land applied to local farms as a beneficial soil amendment. The Alliance strives to safeguard the health of both the community and the natural environment, while at the same time fostering a prosperous economy. We concur with the DNS, and are providing the following comments for consideration.

Beneficial use of biosolids is critical to delivering essential public health services to our customers.

Wastewater treatment systems protect human health and the environment, and generate biosolids as part of that process. Beneficial use allows wastewater utilities like the Alliance to manage biosolids in a cost-effective, sustainable manner, while providing a rich soil amendment that replenishes nutrients and returns carbon to the soil. Other disposal options, like landfilling and incineration, are not sustainable, do not effectively remove PFAS or other substances from the environment, and rob farmland of essential nutrients. As biosolids production continues to grow with the state's increasing population, maintaining beneficial use will be critical to sustainability and resiliency for clean water agencies. Ecology's proposed permit allows for continued implementation of this vital program and provides regulatory certainty for management of Washington's biosolids.

The Alliance supports source control and pollution prevention efforts that aim to reduce and

eliminate contaminants upstream of wastewater treatment facilities. The wastewater treatment process does not use or manufacture PBDEs, PFAS and microplastics; these contaminants end up in our waste streams from their prevalent use in homes and businesses. PFAS, for example, are present in many household products, including clothing, carpets, cosmetics, and personal hygiene products that directly expose users to far higher concentrations than in biosolids. The ultimate solution to reducing substances of concern in our

wastewater and biosolids – and the environment – is to reduce their discharge to public wastewater treatment systems. This means we must focus on the true sources of these substances to effectively address contamination and exposure pathways. Pretreatment and source control have been proven to reduce pollutants in wastewater and the environment. The Alliance supports efforts such as Ecology’s Safer Products for Washington Program that aim to restrict and eliminate toxic chemicals from consumer products.

We support ongoing research and science-based policy to address substances of concern in

wastewater and biosolids. Regulatory decisions about biosolids management are complex and the science regarding PFAS and other substances continues to evolve. We support the efforts of Ecology, EPA, and the academic community as they work to address knowledge gaps on these emerging contaminants, recognizing the time and investment it takes to develop research that will meet the necessary standards of scientific rigor and peer review. At the same time, public agencies like the Alliance rely on regulatory certainty to manage operations in a cost-effective manner, and uncertainty regarding PFAS has created instability for biosolids management programs. The Alliance supports regulatory decisions based on sound science and practical, attainable solutions that address our most critical priorities, while weighing risks appropriately

Response to A-3

Thank you for your comment.

Unclassified

Ecology received 5 comments that didn't effectively fit in other topics. Most notably because they spanned several different topics throughout. To best address these comments, each was responded to individually below.

Comment I-4: Michael Laurie

Submit Method: Website

There are roughly 80,000 chemicals approved for use in the U.S. And many of them were grandfathered in for legal use with little to no testing. And even with the ones that had some minimal testing requirements we are finding that they are more toxic than originally thought as is the case with some pesticides. And as far as PFAS chemicals that are now receiving greater attention, it was known decades ago that Teflon was harmful and it is in the PFAS chemical group. Which leads one to believe that the EPA has not been carrying out its public safety efforts as completely as it should be. And on the one hand EPA has said repeatedly lately that no level of PFAS chemicals are safe, yet Ecology is saying that the level of PFAS chemicals found in sewage sludge are safe. It appears that Ecology has not been paying attention to what EPA said on the subject. Also, even if the level of PFAS chemicals are found to be "safe" on the day that a sample is tested, all bets are off on how "safe" a sample would be on the next day because the quantity of PFAS chemicals flushed down the sewer system will likely vary the next day and every day. And what about testing for the 80,000 other chemicals? We can not make any definitive statements about how "safe" sewage sludge is without testing for the thousands of other chemicals that can end up in sewage sludge every day. And even if a particular sample of sewage sludge is found to be "safe" as far as PFAS chemicals are concerned, testing in Maine and other places has shown that with repeated use of sewage sludge as a fertilizer that the level of PFAS chemicals can build up to very unsafe levels in the soil. I suspect that no one has a good evidence and testing based idea as to how many times you can use sewage sludge as a fertilizer before the levels of PFAS chemicals build up to levels deemed unsafe. Not to mention how long before the other thousands of possible chemical components in sewage sludge build up to unsafe levels in the soil. For these and other reasons I think the small amount of testing we have on the sewage sludge topic and the concerns that the testing has raised suggest that the Determination of Nonsignificance for sewage sludge (biosolids) should be denied. And the wastewater treatment plant operators in Washington state should be taxed to pay for a significantly great amount of testing. And in the mean time they should be required to send their sewage sludge to approved toxic waste landfills until they can prove that their sewage sludge products are totally safe to use as a fertilizer which I suspect will never happen due to the wide range of untested chemicals that can be in sewage sludge.

Response to I-4

Thank you for your comment. Several of the topics raised are addressed in previous responses, instead of duplicating the text here, appropriate locations have been cited where this information can be found below.

In reference to comments about the potential for thousands of chemicals to be present in biosolids and testing for them, and EPA efforts on PFAS please refer to the Key Topic Discussion titled "Understanding regulated pollutants in biosolids" in the Response to Comments on the Draft General Permit published in 2022⁷ (page 14). A thorough explanation of why its inaccurate to assert there are thousands of chemicals in biosolids, highlighted that the mere presence of a chemical does not equate to risk, and included efforts the EPA was working on at the time with respect to PFAS and biosolids. Updated information on the EPA's current efforts and support of beneficial use of biosolids, can be found in the Checklist¹, under the heading title "EPA Efforts on PFAS" (page 22).

In reference to comments about PFAS being used in many consumer products including paper products, Ecology spoke to elevated PFAS levels found on Maine farmland that received national attention in the Checklist¹ (pages 23-24). Further investigation identified that the elevated levels of PFAS on farmland was a result of historical land application of paper mill sludge. Testing at other farms in the area that also received biosolids for many years found no reason for concern of safety of farm products. These and other incidences of high PFAS contamination have detrimental impacts on the community, but they are not representative of typical land applications of municipal biosolids. This kind of land application of paper mill sludge that occurred in Maine is not a practice allowed under the Washington biosolids general permit.

Large paper mills in Washington state are included in the category of industries that operate their own wastewater treatment plants. The sludge that originates from these systems is not considered biosolids, meaning it isn't considered biosolids or land applied as such under the general permit.

Taxing Wastewater Treatment Plants for Receiving PFAS from Upstream Sources

Wastewater treatment plants do not generate PFAS or microplastics, they simply receive them from up stream sources as part of their normal operations. The presence of PFAS and microplastics in biosolids is a reflection of their persistence, mass production, and use in consumer products that individuals come into contact with regularly. Once these contaminants have reached the wastewater treatment plant, they have already passed through our homes and businesses. Source reduction has a large impact in reducing human and environmental exposure to contaminants of emerging concern (CECs). The Checklist¹ touches on this under the heading "Source Reduction" (page 23), and in the key topic discussion at the start of this response document titled "[Wastewater Treatment Plants are Passive Receivers of Contaminants, Not Generators](#)".

In reference to repeated use of sewage sludge and the potential for this to result in elevated levels of contaminants in soils, please refer to the Key Topic Discussion titled "Heavy Metals in Biosolids" in the Response to Comments on the Draft General Permit⁷ published in 2022 (page 13).

Comment I-6: Morton Alexander

Submit Method: Website

Greetings again from one who futilely commented in 2022 against your effort to re-authorize your own permit to use sewage sludge in agriculture. Despite overwhelmingly negative feedback, you did that anyway. Thankfully, the PCHB voided your corrupt program, but now you are trying to re-instate it.

In the last few years, as one who has campaigned against the practice, and in 2017 (with my neighbors' help) blocked a nearby land application right above our water source, I have been saying, "Thank God for PFAS". The advent of concern over the danger of this category of "forever" toxins has scared many who weren't already afraid about the sufficiently toxic combinations of chemicals in sludge.

So, please dig up my 2022 testimony, and include it in the current round, plus this webinar attached here: https://peer.org/webinar-saving-farmland-toxic-pfas-biosolids-texas-and-beyond/?blm_aid=855297025

also

https://peer.org/wp-content/uploads/2024/09/9.24.24-Saving-Farmland-slides.pdf?blm_aid=855297025

It is a recorded webinar about the lawsuit by Johnson County, Texas against the EPA for malpractice with regard to its approval of PFAS laden sewage sludge applied to farmland there.

Also, it is beyond ludicrous to hear that you can't regulate pfas in agriculture because those chemicals are not manufactured in Washington state!! PFAS are in each one of us who contribute to sewage. Also, look at the suit by Spokane and other towns against the PFAS manufacturers nationally for contamination of its wells.

Response to I-6

Thank you for the comment. Ecology's Statewide Biosolids Coordinator did watch the webinar linked in the comment about PFAS contamination at some farms in Texas. There are several misleading statements made during this presentation that are not consistent with biosolids land application practices in Washington state. However, Ecology supports the goal mentioned toward the end of the webinar, which is generally to ensure biosolids are safe for use. This is what we work to ensure in our program. The detailed analysis in the State Environmental Policy Act Checklist and Determination of Nonsignificance¹ address this topic. The EPA's current efforts on PFAS including their process to review contaminants of emerging concern (CECs) and conduct robust risk-assessments needed to determine when regulatory action is necessary^{37 38}, and what it needs to look like is also addressed in the Checklist¹. See the answer to number A.11. at the top of page 7, as well as the sections titled "Regulated Pollutants" on pages 17-18, "Contaminants of emerging concern" on pages 18-19, and "EPA Efforts on PFAS" on page 22 of the Checklist¹.

Since this incident in Texas is still developing and not all the details have been disclosed, any comments about the specifics would be speculative. Ecology will continue to monitor developments. The current state of the science on PFAS in biosolids in the Checklist¹ under the heading "PFAS" on pages 20-21.

Please refer to the Response to Comments on the General Permit⁷ (comments addressed on pages 33, 57, 134, 146, 160, 224, 243, 257, 299, 308).

One point of clarification is that Ecology is not stating it can't regulate PFAS in biosolids, the mention refers to there not being any PFAS manufacturers in Washington state to highlight that the potential of seeing high levels of PFAS in biosolids is unlikely. Ecology's regulatory limitations are based on limitations on our statutory authority and rule-making obligations.

Finally, Ecology shares your concern that PFAS are being found in each of us who contribute to our wastewater treatment plant water and biosolids. Once these contaminants make it to wastewater treatment plants, they have already made it through homes and business. Addressing CECs before they make their way to wastewater treatment plants and ideally before they expose people in their everyday lives will have the largest impact on reducing human and environmental exposure. The importance of source reduction is addressed in the Checklist¹ under the heading "Source Reduction" on page 23.

Comment I-8: Darlene Schanfald

Submit Method: Website

Please check your links to the SEPA documents. The message I got is that they could not be found.

I am commenting on your DNS dated September 27, 2024 regarding the WA State Department of Ecology's response to the WA PCHB ruling that the 5-year permit should address PFAS, PBDEs and microplastics.

I find that your agency is misrepresenting itself and the public and without doubt circumventing the PCHB ruling. You have not responded to the ruling but only to how you will not follow it.

You want to reissue the 5-year permit. What years does this cover?

You cite 2007 DOE language. It has no merit given all the EPA, OIG, legal actions in ME, CT, TX, and other scientific data that has since been released. It is clear that PFAS is in biosolids and the more one land spreads it, the more there is a cumulative affect. PFAS is, after all, a "forever" chemical. Ecology should be suing the manufacturers and EPA for allowing this chemical, as are others, rather than intending to exasperate the problem. This waste is no longer "beneficial use," and it ever was. It has created tragedies around the world, including farmers loss of properties, animals and livelihood.

History shows that it was allowed because it couldn't be dumped in waterways so it was allowed on land for lack of another option. (See: Science for Sale. Dr. David L. Lewis. Pub. 2014) The effluent and the biosolids runoff with stormwater ensures the waste ends up in the water. And 60% of Puget Sound is polluted from sewage waste.

Myriad documents, including from Cornell University in 2009 from Drs Ellen Z Harrison and Murray McBride. Cornell Waste Management Institute Case for Caution Revisited: Health and Environmental Impacts of Application of Sewage Sludges to Agricultural Land <https://cwmi.css.cornell.edu/case.pdf>

Indeed, your citation list is brief beyond words and lacks scientific credibility

You claim: " Implementing regulatory action without risk-based guidance from EPA could interfere with established goals and benefits of biosolids recycling and may not provide demonstrated risk-reduction for human health and the environment."

The General Permit Checklist highlighted that the information with respect to PFAS, microplastics and other contaminants that may be present in biosolids is incomplete and the research is ongoing regarding these emerging contaminants in biosolids. More information is needed to determine if there is risk to human health and the environment from these contaminants associated with land application of biosolids that warrants regulatory action. It is apparent that the EPA and many researchers are working hard to fill in information gaps as they have previously done with emerging contaminants in biosolids in the past. Ecology has also undertaken its own sampling study to further its understanding of PFAS in biosolids generated in Washington state. Implementing regulatory action without risk-based guidance from EPA could interfere with established goals and benefits of biosolids recycling and may not provide demonstrated risk-reduction for human health and the environment.

This is bogus. You have the authority to go beyond positions taken by the USEPA. Ecology has the ability to do the science. In the case of biosolids, Ecology is not using the "flexibility" it has to protect human health and the environment.

You say that there are only two methods besides land spreading to handle the hazardous biosolids - incineration and landfilling. This is not true. Supercritical Water Oxidation (SCWO) and very high heat methods have been shown to destroy PFAS. Others can minimize both the toxicity and the leftover digestate of other chemicals..

In making this determination, we scrutinized the existing research, including the information available about PFAS in Washington state, and the fact that there are no know PFAS manufactures in Washington state. We have seen isolated events in othestates where elevated PFAS levels in biosolids are a direct result of dumping or discharging of PFAS from manufacturers into municipal wastewater treatment plants. In most cases the contamination events occurred years ago and the land application practices employed would not be allowed in Washington state. In addition, not having any PFAS manufacturers in Washington makes this

even more unlikely to occur in the state. Although the study of PFAS in Washington biosolids was small, it highlighted that a facility with known industrial inputs and impacts from historical AFFF contamination generated biosolids with PFAS levels lower than those calculated from a national average of industrially impacted biosolids.

The research on these contaminants to date and information currently available show us that it is very unlikely that current biosolids land application practices constitute a major source of PFAS exposure for humans or the environment. We also can reasonably assume, based on the absence of PFAS manufacturing in Washington and on Washington-specific PFAS sampling data, that the likelihood for biosolids to have elevated PFAS levels, or land application thereof to lead to elevated soil, groundwater or animal byproducts is unlikely.

This is a shocking position. PFAS is in so many products, products that may be manufactured in WA State using PFAS. For instance paper. Paper is coated with PFAS You may recall that since the USEPA implemented its biosolids position in 1990, it was to revisit and rule on more contaminants every two years. EPA has not done this, though it lists the existence of hundreds of contaminants - pollutants and hazardous wastes. One-third-of-a-century later the USEPA has not followed the law beyond heavy metals, nitrates and phosphorus. Now they are faced with PFAS. But there are 380,000 chemicals in the wastewater toxic soup, plus pathogens, plus synergistic created chemicals, mostly unregulated, with thousands of chemicals created annually that, too, are unregulated and they all wind up in the sewage plants.

The study "Survey of organic wastewater contaminants in biosolids EPA designation for "treated sewage sludge destined for land application" examined nine different biosolid products, produced by municipal wastewater processing plants in seven different states, and found 87 different chemicals, with fifty-five chemicals found in one product alone.

In 2009, EPA published the Targeted National Sewage Sludge Survey. The survey focused on 74 processing plants in 35 states that treated more than one million gallons per day. It concluded that all sewage sludge contains toxic and hazardous materials.

In 2018, EPA's Office of Inspector General (OIG) published its audit of the agency's "Biosolids" Program and found that the EPA was unable to assess the impact of hundreds of unregulated pollutants in land-applied "biosolids" on human health and the environment. To date, the EPA has identified 352 pollutants in biosolids, out of an unknown and incalculable total that frustrates any meaningful risk assessments; 61 of these pollutants have been categorized as hazardous by other federal programs. These pollutants currently are not considered for further regulation because the agency claims it lacks the data and tools necessary to assess the health and environmental risks. Read the report: https://www.epa.gov/sites/default/files/2018-11/documents/epaoig_20181115-19-p-0002.pdf

The USEPA has some of the most sophisticated lab/research tools that exist. Surely they could do as well as universities.

And we haven't even talked about the commercial compost sold with sewage wastes to the unsuspecting public.

Given the plentiful scientific documentation that exists about the harms of this waste and its impacts on water, air, soil, humans, crops and wildlife, you have no excuse to not follow the PCHB ruling for at least three groups of synthetic contaminants. I'm not even going to bother listing documentation herein. You can find this information online.

The WA State Department of Ecology needs a departmental makeover in how it is going to approach sewage handling and the residual wastes so that it protects the environment, the public and the wildlife. Staff needs deep training in this area and not a reliance on antiquated, damaging regulations. This waste play a small part when it comes to global warming and climate change, but it plays a part.

In closing, it is irresponsible of Ecology not to do the work ordered by the PCHB.

Response to I-8

Thank you for your comment. Several topics raised have been addressed, instead of duplicating the text here, appropriate locations have been cited where this information can be found below.

As noted in the State Environmental Policy Act Checklist and Determination of Nonsignificance¹, the General Permit would have a term of five years from the date of issuance. This is consistent with rule language and all previous General Permits for Biosolids Management.

Outdated References

Many regulatory documents the Biosolids program relies on are several years to decades old, this does not invalidate the information within. Ecology reviewed the most current documents on this subject including rule, guidance documents, and scientific literature. Please refer to the references included to address question B8 on page 6 of the Checklist¹ for specific guidance documents and rules that are updated from time to time as needed. For the scientific literature and other documents referenced in drafting the Checklist, please see the reference list compiled at the end of the Checklist¹ (pages 30-35).

Alternative Treatment and Disposal Methods

At this point available science still shows land application is the best use of biosolids, over disposal. Biosolids staff stay informed on current research, including new treatment and disposal technologies. Ecology didn't expand on treatment methodologies that have been proposed including, pyrolysis, Supercritical Water Oxidization (SCWO) and thermal treatment, or permitted hazardous waste combustors that operate under certain conditions because these treatment technologies are not proven to destroy PFAS in biosolids^{16 17 18}. To date, there isn't a single technology that can treat PFAS contamination in totality. Each contaminated media can require differing disposal methods and the degree of their efficacy to achieve destruction varies.

Contaminants of emerging concern (CECs) in Biosolids

In reference to comments about 380,000 chemicals present in biosolids, please refer to the Key Topic titled "Understanding regulated pollutants in biosolids" in the Response to Comments on the Draft General Permit published in 2022⁷ (page 14).

As mentioned in the Checklist¹ (pages 18, 22, 26), the EPA is tasked with conducting surveys as part of their biennial reviews for contaminants. Their webpage also details their processes for regulating pollutants in biosolids³⁷. If they identify a potential issue, they proceed with conducting additional risk assessments to determine if regulatory action is necessary and what that should look like, as they are currently doing with PFOA and PFOS.

Industrial Sewage Sludge is Not Considered Biosolids

In reference to comments about PFAS being used in many consumer products including paper products, Ecology spoke to elevated PFAS levels found on Maine farmland that received national attention in the Checklist (pages 23-24). Further investigation identified that the elevated levels of PFAS on farmland was a result of historical land application of paper mill sludge. This kind of land application of paper mill sludge that occurred in Maine is not a practice allowed under the general permit.

Large paper mills in Washington state are included in the category of industries that operate their own wastewater treatment plants. The sludge that originates from these systems is not considered biosolids which means it isn't considered biosolids or land applied as such under the general permit.

In reference to comments about the Office of the Inspector General (OIG) Report, please refer to the Key Topics titled "Understanding regulated pollutants in biosolids" on page 14 and "Understanding the 2018 Office of the Inspector General (OIG) Report" on page 18 of the Response to Comments on the Draft General Permit published in 2022⁷. In reference to comments about interpreting the Board's decision, please see the Key Topic discussion titled "[Pollution Control Hearings Board Decision Interpretation](#)".

Comment O-5: Nisqually Delta Association, Wyatt Golding

Submit Method: Website

The Nisqually Delta Association (NDA), a volunteer, non-profit organization dedicated to the protection of the Nisqually Delta and the surrounding region, offers the following comments on the DNS for the draft general permit.

As you are aware, NDA was the appellant in *Nisqually Delta Association v. Department of Ecology*, PCHB No. 22-057. In the commenting process and on appeal, NDA raised many issues that were not addressed by the PCHB. The PCHB ruled only on "Issue 8," which was the invalidity of Ecology's prior DNS SEPA determination. NDA therefore resubmits its prior

³⁷ <https://www.epa.gov/biosolids/biosolids-laws-and-regulations#process>

comments, and its briefing on appeal, for consideration by Ecology and incorporation into the administrative record.

The general permit appears unchanged from the version at issue in PCHB No. 22-057. As detailed below, there is adequate data and risk to impose permit limits for microplastics and PFAS. NDA suggests that, even if Ecology believes there is too much uncertainty to impose restrictions, at a very minimum the General Permit should require sampling, testing, and monitoring of biosolids and application sites to evaluate contamination levels over time and have more robust data for future regulation. There is now an EPA-approved, affordable mechanism to test biosolids for PFAS, and representative samples of biosolids could be evaluated by Ecology or third-party laboratories for microplastics to gather more data.

To avoid repetition, these comments focus only on the new SEPA review of the environmental effects of PBDEs, PFAS, microplastics, and other contaminants of emerging concern. We note that PBDEs have generally been replaced in commerce with alternative brominated flameretardants (as well as increased use of chlorinated phosphates) thus attention to these is also merited. We also note increasing science around the impacts of 6PPD Quinone to coho and other salmon at vanishingly small concentration. Given that 6PPD Quinone is present in stormwater, which is sometimes treated along with wastewater, consideration of 6PPD Quinone is merited.

General Comments

Lack of sampling, testing, and monitoring

A top concern with the General Permit and SEPA evaluation is that those documents do not contain a requirement for monitoring of PFAS, microplastics, or other contaminants of emerging concern. As such Ecology relies upon supposed uncertainty to avoid environmental review, while not taking measures to resolve that uncertainty. While Ecology mentions one pending study of PFAS in biosolids, it does not disclose any results or information from that study.

This approach is inconsistent with EPA guidance, which recognizes the clear risk posed by PFAS in biosolids. EPA designated perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) in April 2024. This means that application sites risk becoming regulated under CERCLA and MTCA as cleanup sites. EPA also established legally enforceable levels, called Maximum Contaminant Levels (MCLs), for six PFAS in drinking water: PFOA, PFOS, PFHxS, PFNA, and HFPO-DA as contaminants with individual MCLs, and PFAS mixtures containing at least two or more of PFHxS, PFNA, HFPO-DA, and PFBS using a Hazard Index MCL to account for the combined and co-occurring levels of these PFAS in drinking water. EPA also finalized health-based, non-enforceable Maximum Contaminant Level Goals (MCLGs) for these PFAS.

These actions indicate a clear direction, recognizing the risks and need to regulate PFAS in the environment. Indeed, EPA has also initiated studies and screening tools specific to biosolids. “While these agency actions are underway, EPA recommends that states monitor biosolids for PFAS contamination, identify likely industrial discharges of PFAS, and implement industrial pretreatment requirements where appropriate. Doing so will help prevent downstream PFAS contamination and lower the concentration of PFAS in biosolids as described in Section C of EPA’s December 2022 memo entitled “Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs.”(<https://www.epa.gov/biosolids/and-polyfluoroalkyl-substances-pfas-biosolids>)

EPA has also released “Joint Principles,” which state as a top priority that regulators should “**Protect communities.** Continue to research, restrict, and remediate PFAS. Ensure community health is central to the management of biosolids and expand monitoring efforts to identify where and at what levels PFAS may be present in biosolids. Support practices and decision making using the best available data and technologies.”

Taking EPA’s recommended approach here would be consistent with other Ecology permits. For example, the Puget Sound Nutrient General Permit, (<https://ecology.wa.gov/regulations-permits/permits-certifications/nutrient-permit>) where Ecology believed it needed more data concerning total inorganic nitrogen (TIN), it imposed a requirement on municipal wastewater facilities to sample, monitor, and report TIN discharges. Based on that information, Ecology set action levels and required plans to reduce discharges over time.

A similar approach is feasible here, as opposed to simply deeming the impacts too uncertain to evaluate or mitigate. EPA finalized EPA Method 1633 and released it on January 31, 2024. (<https://www.epa.gov/system/files/documents/2024-01/method-1633-final-for-web-posting.pdf>) Most environmental labs are already using it and have been for some time. It includes 40 PFAS compounds and is included in many state’s NPDES permits already. Labs we are familiar with charges of about \$365-\$450 per sample. These are affordable levels for periodic sampling.

Testing and monitoring must be required for biosolid application. Indeed, many states require monthly or quarterly “sample and report” PFAS levels in biosolids using Method 1633 for one year and then propose that they will determine frequency based on individual WWTP results. Michigan requires all WWTPs that land apply their biosolids to test and report PFAS levels at the beginning of every year and prior to planting season. Requiring testing of land application sites would help to identify background levels and also to address cumulative impacts over time.

In the response to comments, we request that Ecology review the testing, monitoring, and reporting requirements from other states’ biosolids regulation and explain why or why not it can impose similar requirements here.

Terminology, the PCHB Order, and SEPA requirements for uncertainty

The environmental review documents distinguish between “pollutants” and “contaminants,” which creates confusion throughout the documents and improperly suggests that “contaminants” lack a significant environmental effect. Microplastics, PFAS, and other modern chemicals are “pollutants” for the Clean Water Act and for purposes of plain language reference.

To avoid confusion, we suggest distinguishing only where necessary between “pollutants” as an umbrella term and specifying “pollutants currently regulated in biosolids by EPA” where necessary.

The DNS is not fully responsive to the PCHB’s Order on Summary Judgment, and in some cases fails to comply with the PCHB’s order. The DNS pulls out one paragraph from the decision, which concerns how to address uncertainty and information gaps in environmental analysis. However, that paragraph was the PCHB’s rejection of an Ecology defense. The substance of the ruling was far broader. The Board ruled that “Omitting analysis for a reasonably foreseeable impact renders the DNS clearly erroneous....The dearth of discussion or even information on PFAS, PBDEs, and microplastics in the SEPA Checklist and DNS is at odds with the information that was available in many of the above enumerated documents, and evinces an inadequate evaluation of the impacts from biosolids storage, transfer, land application, and disposal that is authorized by the General Permit.” See Order at 16-17.

The Board further ruled that Ecology failed to account for increasing biosolids production over time with population growth, and that “[i]ncreased production of biosolids will logically increase discharges of pollutants contained in them, including PFAS, PBDEs, and microplastics, yet the SEPA Checklist simply excludes the impacts of increased biosolids production from population growth.”

Finally, the Board rejected each of Ecology’s three defenses, which it characterized as “1) the General Permit does not on its own entirely authorize land application of biosolids; 2) Ecology lacks the authority to prohibit beneficial reuse of biosolids; and 3) the General Permit requires SEPA review each time Ecology grants coverage under the General Permit to a new facility.” The Board concluded, in summary, that the General Permit does authorize land application, that Ecology does have authority to limit or mitigate impacts of biosolids (and even if it did not have such authority, it would not change the SEPA obligation to evaluate environmental effects), and that SEPA requires review at the earliest possible time.

Ecology’s new Checklist is not fully responsive to the Board’s direction. It focuses on why there is insufficient information available to regulate PBDEs, PFAS, and microplastics, without providing a full analysis of reasonably foreseeable environmental impacts, or assessing increased discharges of pollutants over time. While describing uncertainty, it fails to comply with SEPA disclosure requirements or the process set forth in WAC 197-11-080(3).

The SEPA rules next state that an agency may proceed in the absence of information “[i]f information relevant to adverse impacts is important to the decision and the means to obtain it are speculative or not known.” WAC 197-11-080(3). And finally, if the agency proceeds, “it shall

generally indicate in the appropriate environmental documents its worst case analysis and the likelihood of occurrence, to the extent this information can reasonably be developed.” WAC 197-11-080(3). Here, the means of obtaining the information (testing biosolids in Washington for presence of contaminants) are known, and appear to be underway. However, Ecology fails to disclose the results of that testing. Ecology also fails to provide a worst-case analysis, instead simply asserting that a worst-case outcome is unlikely to occur.

The DNS continues to largely forestall any meaningful analysis until potential future review in site-specific applications. This is inconsistent with the Board’s direction that SEPA review should be conducted at the earliest opportunity, and the Board’s observation that some biosolids uses do not entail future SEPA review.

In many places, the DNS reads as a defense of biosolids and critique of studies demonstrating risk of contamination and exposure. Contrary to the PCHB’s ruling, Ecology’s SEPA analysis does not disclose the range of potential environmental effects of PBDES, PFAS, and microplastics. That conclusion is untenable and noncompliant.

We respectfully request that Ecology conduct a revised analysis that includes the following:

- A robust and full disclosure of the results of biosolids testing in Washington and beyond with respect to microplastics, PFAS, and other contaminants of emerging concern, including the initial results of Ecology’s ongoing study of PFAS in biosolids
- A discussion of the quantity of biosolids Ecology expects will be applied under the general permit
- Based on biosolids testing results and relevant literature, quantification and knowledge of typical concentrations of different contaminants/pollutants, the range of likely presence of microplastics, PFAS, and other contaminants of emerging concern
- Evaluation of how these contaminants/pollutants may have accumulated and continue to accumulate over time
- Evaluation of how these contaminants/pollutants may pose cumulative effects in addition to other exposures
- A meaningful evaluation of the range of direct, indirect, and cumulative environmental effects (including, but not limited to, human health effects) that are reasonably likely to occur based on the range of potential contamination, including a worst-case analysis
- Careful consideration of mitigation measures. At a minimum, Ecology should impose testing, monitoring, and reporting of representative biosolid samples from each facility, and require testing and reporting to determine background levels of contamination/pollution of application sites

While we acknowledge that there is uncertainty, that is not a reason to evaluate environmental effects. The correct approach is to acknowledge uncertainty and build in error bars and ranges

that account for such uncertainty, and to take reasonable measures in the SEPA analysis and permit structure to reduce uncertainty over time.

SEPA Checklist

In the comments below, we respond to Ecology assertions and raise specific requests and questions to address in a revised Checklist or response to comments.

P 5-6. The referenced documents are largely outdated or focus on agricultural application. For example, the EPA biosolids rule and guidance are each 30 years old.

We encourage Ecology to review and incorporate updated documents focused on risks of pollution and contamination. EPA is carrying out significant work, including a screening tool for PFAS in biosolids, and a nationwide sewage sludge sampling program. Some of these efforts are detailed here <https://www.epa.gov/biosolids/and-polyfluoroalkyl-substances-pfas-biosolids>. Interim results should be incorporated, in addition to the “Joint Principles for Preventing and Managing PFAS in Biosolids.” (<https://www.epa.gov/system/files/documents/2023-07/Joint-Principles-Preventing-Managing-PFAS.pdf>)

The Joint Principles note that:

“PFAS enter wastewater treatment systems through industrial, commercial, and domestic sources. These PFAS can end up in biosolids -the solid matter left at the end of the wastewater treatment process. The presence of PFAS in biosolids is the result of the continued manufacture and use of these compounds throughout society, including by households, as well as industrial discharges of PFAS to wastewater.

The three primary management practices for biosolids use and disposal are land application, incineration, and placement in solid waste landfills. The U.S. Environmental Protection Agency (EPA) estimates that in 2021, large publicly owned treatment works land applied 43% of their biosolids, landfilled 42%, and incinerated 14%. When biosolids are contaminated by PFAS, each management practice may pose potential risks.”

It goes on to list as the top priority to “**Protect communities.** Continue to research, restrict, and remediate PFAS. Ensure community health is central to the management of biosolids and expand monitoring efforts to identify where and at what levels PFAS may be present in biosolids. Support practices and decision making using the best available data and technologies.”

Ecology’s DNS and permit are inconsistent with this approach, in that they proceed in the face of alleged uncertainty and data gaps, prioritizing disposal over community health.

Please address how Ecology’s approach is consistent with EPA guidance on PFAS in biosolids, and if inconsistent, why.

P 7. The Checklist states that “additional or more stringent requirements to each individual facility and land application site as necessary...”

Please explain how this site-specific review, analysis, and requirements would occur with respect to PFAS, microplastics, and other contaminants of emerging concern. Does Ecology envision identifying certain wastewater sites as higher risk? Or certain sites? If so, what mitigation would be imposed?

P 12. Ecology notes that biosolids are not considered a solid waste under State law. However, this does not change their actual environmental risk or classification under federal law, including RCRA and CERCLA.

Please discuss in the SEPA Checklist and threshold determination how RCRA and CERCLA regulation of PFAS may affect those who land apply biosolids over time.

P 17. Ecology asserts that issuing the permit is not likely to cause an increase in discharge or the anticipated levels of discharge and release of PFAS, microplastics, and other contaminants/pollutants, the likely increases under the General Permit, and the direct, indirect, and cumulative effects. release of hazardous substances. This is directly at odds with the PCHB’s ruling. Please address the anticipated levels of discharge and release of PFAS, microplastics, and other contaminants/pollutants, the likely increases under the General Permit, and the direct, indirect, and cumulative effects.

P 20-21. Ecology notes that “PFAS compounds have been identified in influent, effluent, and sewage sludge or biosolids across the US, including Washington state, due to their persistence and extensive use.” Thank you for acknowledging these facts.

The studies provided indicate persistence in land applied soils, some uptake into crops, and higher mobility with shorter-chain PFAS (which are created during wastewater treatment). These indicate at least three potential exposure pathways and risks, given that there is no healthy level of PFAS exposure.

Please elaborate on the degree to which new products use and wastewater treatment may create new shorter-chain PFAS, and what variable risks these pollutants/contaminants present.

Determination of Nonsignificance

P 1-2. The DNS should acknowledge that the permit contains no provisions relating to PFAS, brominated flame retardants, microplastics, or other contaminant sources to biosolids. The DNS should further acknowledge that these are systemic issues, that are very unlikely to be addressed at a site-specific level, because without any testing or monitoring, there will be no way to know or address the contamination in biosolids to be applied at a given site.

Please explain under what conditions Ecology envisions addressing PFAS, microplastics, or other contaminants of emerging concern at a site-specific level.

P 2. The DNS relies heavily on the assertion that lack of PFAS manufacturers in Washington makes harmful levels of PFAS unlikely. This analysis fails to actually identify and assess environmental effects—the likelihood that they may be worse in other states does not inform what the effects are in Washington. Moreover, there are countless sources of PFAS that exist in Washington, including but limited to: products shipped to Washington from other states, paper production, military and aviation facilities, firefighting supplies, and other items.

P 3. Ecology’s referenced study appears to focus on one facility, and again bases its analysis on “contamination generated biosolids with PFAS levels lower than those calculated from a national average of industrially impacted biosolids.” A single facility or very limited study is not sufficient to disregard impacts. Moreover, being less than the national average does not indicate lack of environmental effects.

How do Washington’s rates of biosolids application compare to national averages? The information presented seems to indicate Washington’s rates are significantly higher. How does that affect overall level of PFAS contamination from biosolids?

Ecology’s analysis often states that there is not enough Washington information to draw conclusions with respect to likely contamination. At the same time, it justifies the DNS based on comparison of a very small sample size to other states.

A more sound analysis would reason that given that PFAS is common in commerce, high levels of PFAS found in biosolids throughout the country supports the conclusion that there is a high risk that at least some biosolids in Washington will also have impactful levels of contamination.

Ecology relies on the observation that “... incineration at a sewage sludge incinerator will not effectively destroy PFAS, microplastics or any other contaminants of concern, and both release contaminants with environmental impacts as well.” First, incineration can destroy microplastics and many other contaminants of concern. Its effect on PFAS requires investigation. (See: https://www.epa.gov/sites/default/files/2019-09/documents/technical_brief_pfas_incineration_ioaa_approved_final_july_2019.pdf)

Second, lack of economically attractive alternatives or possible greenhouse gas production are not acceptable policy rationales for redistribution of unregulated toxic contaminants to the environment.

Third, lack of acceptable policy alternatives is not a basis for a determination of Nonsignificance. To the contrary, it is strong evidence that evaluation through an environmental impact statement with alternatives is called for and would be productive.

P 5. Ecology relies upon “A Plain English Guide to the EPA Part 503 Biosolids Rule.” That document is now 30 years old and has no application to modern contaminants.

P 7. “Treatment works that generate biosolids are required to monitor for, and keep records of, regulated pollutants in the biosolids they produce.” This statement is not true with respect to

the pollutants/contaminants at issue. Brominated flame retardants, microplastics and PFAS are not monitored or recorded, although they should be.

P 18. “If new contaminants are identified, the EPA conducts a robust risk analysis to determine if regulation is necessary to protect human health and the environment.” This assertion is not accurate with respect to the modern pollutants at issue. EPA has struggled to make any adjustments to the biosolids program for more than 30 years.

“Adoption of extremely low regulatory limits for contaminants before we understand if they pose a risk could have adverse consequences for biosolids recycling.”

Again, consideration of policy implications or alternatives is not a justification for a determination of Nonsignificance. Ecology’s only role at this stage in the SEPA process is to evaluate probable, adverse environmental effects, and potentially to consider measures to mitigate such effects.

P 20. “Regulatory limits for PBDEs in biosolids have never been implemented because biosolids have not been found to constitute a significant pathway for release of PBDEs to the environment.”

PBDEs have largely been replaced in commerce with alternative brominated flame retardants (as well as increased use of chlorinated phosphates) thus attention to these is merited.

P 24. “Many studies on MPs make mention of our still minimal understanding of these compounds, including most notably our lack of standardized methodology for identification and quantification of MPs, which produces incomparable data.”

Existing methods underestimate the levels of microplastics as they fail to detect those <20 um. These smaller microplastics are likely the most abundant as they derive from the fragmentation of larger plastics. The DNS repeatedly relies upon lack of data, but provides no mechanism to account for data gaps, and does not engage in a probabilistic risk assessment or worst-case analysis. Like with other contaminants, Ecology raises the concern of potential impacts of regulation to biosolids industry and waste disposal—concerns that are not relevant to the DNS.

P 25. “Even though this proposal is not expected to result in increased release of pollutants.”

This statement conflicts with the PCHB ruling. Continued, and likely increasing, land application of biosolids with some level of contamination will increase release of pollutants.

Response to Comments

General Permit for Biosolids Management

P 12. “The presence of a pollutant in biosolids, however, does not mean that it will reach groundwater. There are different mechanisms at work in the soil that affect how the pollutants move through and interact with soil.”

Please consider that absence of knowledge does not equate to absence of effect. The quotations and scenario about nutrients do not apply to PFAs and microplastics, which are far more mobile. Lack of consideration for soil and water contamination is not only an environmental threat. Application of these to soils in general and agricultural fields may cause significant liability for farmers or other landowners, and is difficult to impossible to remediate.

P 13. We agree that PFOS and PFOA are likely decreasing in commerce. But being highly persistent “forever chemicals” they will continue to circulate. Moreover, some PFAS have been replaced by lower molecular weight PFAS chemicals. These may have similar health impacts and exhibit greater mobility in the environment. Thus, they may enter water (ground and surface water) at greater rates.

P 21. “Especially considering that the public and regulated community tend to comment when they object to something, rather than when they feel neutral or see something as a positive. Ecology cannot make decisions based on opinions alone.”

These and other responses from Ecology suggest a deeply entrenched staff that sees public comment as attacks to be dismissed. While we appreciate the challenges of working with the public, the SEPA and environmental review process should seek to remain objective and constructive.

P 24. The response notes a biosolids application is 86% in WA. This is much greater than the national average, which also suggests higher risk of pollution/contamination. This should be addressed throughout the DNS, Checklist, and other evaluation.

P 317-319. “It may be that SEPA would require a determination of significance for the issuance of new biosolids general permit if scientific research had demonstrated that microplastics or chemical or microbial contaminants present at concentrations in municipal biosolids were causing significant adverse environmental impacts when applied in compliance with in Washington’s biosolids permitting program. But that circumstance does not exist.” Respectfully, NDA has presented such evidence and the PCHB agreed.

Thank you for your consideration of these comments. We are hopeful that Ecology will take the opportunity to embrace a more protective and informed approach to biosolids regulation.

Response to O-5

Thank you for your comments. Many of the concerns highlighted in this comment have already been addressed in detail in the Checklist and Determination of Nonsignificance. Additionally, some aspects of this comment exceed the scope of the Checklist and Determination of Nonsignificance. This response is provided to reiterate, expand upon and clarify concerns that may benefit from further elucidation.

As discussed in the Checklist¹ (pages 18-19, 21) Ecology disagrees that there is adequate data and risk to impose risk-based limits for microplastics and PFAS in biosolids at this time. Although EPA method 1633 for 40 PFAS congeners in biosolids has been finalized, there still isn’t a risk-

based threshold with which to compare results too. Also, as discussed in the Checklist¹, (pages 19, 24) there is not a standard definition or multi-lab validated methodology for quantifying microplastics in biosolids yet. Standardized definitions and methodology are essential to producing sound scientific data to determine if regulatory action is necessary and if so, what appropriate risk-based limits should look like.

Ecology's Biosolids program relies on EPA to conduct necessary risk assessments on CECs, ensuring consistency with our statutory obligations. As mentioned in the Checklist¹ (pages 18, 22, 26), the EPA is tasked with conducting surveys as part of biennial reviews for contaminants. The webpage also details the processes for regulating pollutants in biosolids.³⁷ ³⁸ If they determine there is need, they proceed with conducting additional risk assessments to determine if regulatory action is necessary and what that should look like, as they are currently doing with PFOA and PFOS. They have not embarked on this work yet for microplastics. Should EPA establish risk-based limits for PFAS in biosolids, Ecology will take appropriate steps to incorporate such limits in our biosolids program.

Other states have started to implement their own limits for PFAS in biosolids based on state specific data they have collected. Ecology is in the process of collecting Washington state-specific data that may warrant state-specific limits. As mentioned in the Checklist¹ (page 23) Ecology has a PFAS biosolids sampling study currently underway. The results have not been received yet, which is why the results have not been disclosed. Ecology will publish a report when it is finalized. Although this data collection is imperative to inform the path forward, due to funding constraints, it will not be statistically meaningful enough to take regulatory actions based on the results. Ecology will continue to gather data as program resources allow. Without an established risk-based regulatory limit with which to compare results, or Washington specific data to generate a statistically based limit as other states have done, can't be confident a limit we establish will result in safer practices.

Environmental Protection Agency Joint Principles

The EPA published the "Joint Principles for Preventing and Managing PFAS in Biosolids"³⁹ to provide guidance to regulators and stakeholders on appropriate handling of PFAS contaminated biosolids while ongoing research to fill information gaps is being conducted. This document was generated as a result of the EPA's PFAS Strategic Roadmap⁴⁰ that is referenced in the Checklist¹ (page 22). The roadmap stresses that "decisions regarding PFAS will be grounded in scientific evidence and analysis" which is consistent with Ecology's approach to PFAS in biosolids.

Ecology is working toward these principles through different programs, not only within the biosolids program. The PFAS biosolids sampling study that Ecology's biosolids program is conducting is continuing research and expanding monitoring efforts to identify where and at what levels PFAS may be present in biosolids generated in Washington state. Included below

³⁸ <https://www.epa.gov/biosolids/basic-information-about-biosolids#pollutants>

³⁹ <https://www.epa.gov/system/files/documents/2023-07/Joint-Principles-Preventing-Managing-PFAS.pdf>

⁴⁰ https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf

are examples of other Agency efforts on PFAS, though this is not a comprehensive list of all efforts Ecology is taking to address PFAS.

The PFAS Strategic Roadmap⁴⁰ talks about leveraging National Pollution Discharge Elimination System (NPDES) permits to reduce PFAS discharges to wastewater treatment plants (and in effect biosolids) and conduct monitoring to obtain more comprehensive data on the source of PFAS to wastewater treatment plants. Ecology's Water Quality program oversees the National Pretreatment Program for wastewater treatment plants in Washington state. As noted in the Checklist¹ (page 23), they have begun to implement PFAS monitoring and source identification requirements⁴¹ in NPDES and State Waste Discharge (SWD) permits as appropriate per Ecology's PFAS Chemical Action Plan³⁴ and EPA's 2022 Memo³⁵.

Similarly, Ecology's Industrial Stormwater General Permit⁴² has included new sampling requirements for certain facilities for PFAS and 6PPD-quinone. This permit includes requirements for industrial facilities to develop stormwater pollution prevention plans, incorporate best management practices in daily operations, conduct regular monitoring for certain pollutants, and reporting results to Ecology. Facilities that are more likely to have PFAS contamination in their stormwater, such as airports and waste management facilities, are now required to sample for these chemicals. Transportation, waste management, and hazardous waste facilities are now required to sample for 6PPD-quinone in their stormwater.

Studies performed by Washington agencies including Ecology's Safer Products for Washington program³¹, as part of the PFAS Chemical Action Plan (CAP)³⁴ work, determined PFAS in carpeting and food service containers pose a high risk and high concern to human and environmental health. They found eliminating PFAS in these products affords the best opportunity to reduce Washingtonian's exposure. Since then, House Bill 1694 passed which reinforces and extends Ecology's authority to name any product identified in the PFAS CAP as a priority product and determine regulatory actions and adopt rules to implement these determinations in a more efficient way. As a result, Ecology can identify priority products and take action to address PFAS more quickly.

Ecology and the Department of Health coordinated a phased restriction of PFAS in certain food packaging materials³². These restrictions were fully implemented by May 2024. In coordinating this work, research indicated that manufacturers of food packaging are already shifting away from using PFAS in their packaging as a result of restrictions like this one. It is believed that the practice of using PFAS in paper food packaging will largely stop by 2025.

The Toxics in Firefighting law passed in 2018 (Chapter 70A.400 RCW⁴³) restricts the sale, manufacture, and use of Aqueous Film Forming Foam or AFFF (a fire fighting foam containing

⁴¹ <https://ecology.wa.gov/waste-toxics/reducing-toxic-chemicals/addressing-priority-toxic-chemicals/pfas/wastewater>

⁴² <https://ecology.wa.gov/regulations-permits/permits-certifications/stormwater-general-permits/industrial-stormwater-permit>

⁴³ <https://app.leg.wa.gov/rcw/default.aspx?cite=70A.400>

PFAS) in practice or training activities³³. Ecology's Hazardous Waste and Toxics Reduction program is working to implement an AFFF collection and disposal program⁴⁴ to help fire departments in Washington state safely collect, remove, and dispose of their AFFF stockpiles.

Ecology's Toxics Cleanup Program has established PFAS clean up levels⁴⁵ calculated to protect drinking water. The guidance thereon includes approaches to minimize cross-contamination and field demonstrated treatment technologies.

All of these efforts Ecology has undertaken aim to reduce primary exposure to PFAS, which will result in reducing the discharge of PFAS to wastewater treatment plants and prevent the contamination of biosolids.

Contaminants of emerging concern (CECs)

As laid out in the Checklist¹ (pages 18-19 under the heading "Contaminants of emerging concern"), research about contaminants and their fate and transport is necessary to inform regulatory decisions.

Ecology has put together an initial working group to start looking into 6PPD Quinone and learn about its source (tires) and potential environmental impacts as we have with other CECs previously. Ecology bases policy decisions on peer-reviewed literature and will continue to do so.

Since Polybrominated diphenyl ethers (PBDEs) have been phased out, the chemical industry has looked to use safer alternatives like alternative brominated flame retardants and chlorinated phosphates. Please refer to page 20 of the Checklist¹ for more information. EPA hasn't yet concluded via their regulatory process³⁷ that conducting risk analysis on these alternative PBDEs is warranted.

Project-level State Environmental Policy Act

The Board's observation that some biosolids facilities do not require State Environmental Policy Act review is inaccurate. This is a requirement spelled out in rule (WAC 173-308-030²) and permit language (section 2.1.4. Complying with the State Environmental Policy Act of the General Permit). Ecology corrected this misunderstanding several times in the Checklist¹ under questions A.9. and A.11. (pages 6 and 7). All facilities subject to the General Permit are also subject to project-level State Environmental Policy Act review on their project specific actions as part of their permit application process. The general permit SEPA review is a non-project SEPA review for the General Permit. Facilities must all conduct separate project-level State Environmental Policy Act reviews to gain coverage under the general permit.

⁴⁴ <https://ecology.wa.gov/waste-toxics/reducing-toxic-chemicals/addressing-priority-toxic-chemicals/pfas/afff>

⁴⁵ <https://ecology.wa.gov/waste-toxics/reducing-toxic-chemicals/addressing-priority-toxic-chemicals/pfas/regulating-pfas-cleanup>

Alternative Disposal via Incineration

Thank you for acknowledging that incineration of PFAS as an effective destruction method requires investigation. Ecology contends that additional investigation is required with respect to other CECS and microplastics. The available literature shows that incineration of microplastics does not effectively eliminate them, and results in generation of emissions in other forms that require disposal. At this time, incineration has not been proven as an effective destruction methodology for PFAS, microplastics and other CECS.

Ecology has established policies to reduce well-understood negative environmental impacts that result from incineration. Moving to incinerate biosolids out of concerns over uncertainties of land application is contrary to Ecology's mission to protect, preserve and enhance Washington's environment.

Outdated References

Many regulatory documents the Biosolids program relies on are several years to decades old, this does not invalidate the information within. Please refer to the reference included in the Checklist including more recently published literature. that has been published in more recent years. A large volume of EPA documents, including the documents the commenter listed are referenced. Please see pages 32-34 of the Checklist² reference list (numbers 28-40 are EPA references).

Additional or More Stringent Requirements

Ecology can incorporate additional or more stringent requirements to any facility as a condition of final coverage. In this way the General Permit's flexible structure allows for coverage tailored to each individual facility and site. Coverage issued under the General Permit takes advantage of the oversight of an individual permit, while streamlining the process to eliminate administrative burden for many facilities. This also increases permitting efficiency for Ecology.

As discussed throughout the Checklist¹ (pages 7-11, 15, 25, 27, 28, 29), the ability for Ecology to require additional conditions based on site-specific review incorporates mitigation efforts throughout the permitting process. The Checklist also speaks to examples of these mitigation efforts and points to guidelines used in defining these efforts. However, with respect to CECS these mitigation efforts can't yet be confirmed as the science is still evolving. The understanding of CECS is developing and guided by science. It is too early to comment on site specific mitigation efforts for PFAS in biosolids. Additionally, as mentioned above under Joint Principles above and in the Checklist¹ (page 23), Ecology's Water Quality program has begun to implement PFAS monitoring and source identification requirements in National Pollutant Discharge Elimination System NPDES and State Waste Discharge (SWD) permits as appropriate.

However, Ecology cannot arbitrarily impose additional or more stringent requirements applicable to all permittees through the General Permit alone. Imposition of general requirements that go beyond the scope of current regulations should be the subject of rulemaking or a result of legislative action. Should such additional requirements be determined

to be necessary, Ecology will take appropriate action to ensure the requirements are imposed in a legally defensible way.

Solid Waste Regulations

Domestic sewage including biosolids are excluded from the federal solid waste definition per 40 CFR 261.4(a)(1)⁴⁶. A material cannot be a hazardous waste if it does not meet the definition of solid waste and thus is not subject to Resource Conservation and Recovery Act (RCRA)⁴⁷. Federal and state cleanup laws (Comprehensive Environmental Response, Compensation, and Liability Act-CERCLA⁴⁸ and the Model Toxics Control Act-MTCA⁴⁹), specify who may be liable for a release of a hazardous substance and possible defenses. Cleanup liability is complex and specific to the situation. Ecology may identify a potentially liable person and ask that person to work cooperatively with the state to address a release. Any liability dispute is resolved by a court.

Conclusion

Finally, as mentioned in the Checklist¹ (page 20), it is well-known that PFAS are ubiquitous in the environment due to the widespread production and use in consumer goods since the 1940s. It has been found in rainwater⁵⁰, arctic ice cores⁵¹, and human blood and breast milk⁵².

The exposure routes the commenter mentions are all secondary exposures potentially resulting from land application of biosolids contaminated with PFAS. While the concern is understandable for any type of exposure, reducing primary exposure takes priority. The most effective means of reducing primary exposures from the consumer items people encounter on a regular basis is through source control. This is why Ecology has prioritized source reduction efforts. Addressing exposure concerns in biosolids is looking at the last possible point in the lifecycle, after people have already been in contact with them. If regulatory efforts focus on source control, primary exposures will reduce, therefore the concentration in biosolids will reduce, which will ultimately reduce secondary exposure from biosolids land application.

Ecology is relying on researchers across the country to continue with investigations on CECs in wastewater treatment plants and biosolids to help guide next steps. In addition, Ecology is collecting data on PFAS levels present in biosolids generated in Washington state. In reviewing the science currently available, issuing this general permit does not represent a significant impact to human health and the environment.

⁴⁶ <https://www.ecfr.gov/current/title-40/chapter-I/subchapter-I/part-261/subpart-A/section-261.4>

⁴⁷ <https://www.epa.gov/rcra/resource-conservation-and-recovery-act-rcra-regulations>

⁴⁸ <https://www.epa.gov/enforcement/comprehensive-environmental-response-compensation-and-liability-act-cercla-and-federal>

⁴⁹ <https://ecology.wa.gov/Spills-Cleanup/Contamination-cleanup/Rules-directing-our-cleanup-work/Model-Toxics-Control-Act>

⁵⁰ <https://www.sciencedirect.com/science/article/pii/S0043135424012892>

⁵¹ <https://www.sciencedirect.com/science/article/pii/S004896972300445X>

⁵² <https://pubs.acs.org/doi/10.1021/acs.est.0c06978>

Comment T-1: Nisqually Indian Tribe, David Troutt

Submit Method: Website

Text copied from document attached to submission.

The Nisqually Indian Tribe submits this comment letter regarding the Washington Department of Ecology's determination of Nonsignificance (DNS) for the draft statewide general permit for biosolids management under the State Environmental Policy Act, Chapter 43.21C Revised Code of Washington.

Since time immemorial, the *Squalli Absch* (Nisqually) have been a fishing people and have lived on and stewarded the lands in the Nisqually Watershed. The Tribe is a federally recognized sovereign nation and a successor-in-interest to the bands and tribes who were signatories to the 1854 Treaty of Medicine Creek. The Treaty of Medicine Creek guarantees the Tribe the right to harvest salmon running and passing through its "usual and accustomed" fishing areas (U&A) at a level sufficient to support a moderate standard of living. The Tribe's U&A includes South Puget Sound and the Nisqually Watershed (WRIA 11). The Tribe is a co-manager of fisheries resources with the State of Washington, and the Tribe has dedicated innumerable resources to protecting and restoring endangered or threatened species in the ecosystem, including salmon and the Southern Resident Orca Whale that rely on them.

The Tribe has previously expressed its concerns about the statewide general permit for biosolids management. On July 12, 2021, the Tribe submitted a letter to Ecology regarding the 2021 Draft Statewide General Permit for Biosolids Management and Associated SEPA Checklist. The Tribe also submitted a letter on July 8, 2022, regarding Ecology's issuance of the 2022 Statewide General Permit for Biosolids Management. In both letters, the Tribe requested that the Nisqually Watershed be excluded from the general permit under WAC 173-308-90005(1)(b), including because of the threat that contaminants of emerging concern (CECs) like polybrominated diphenyl ethers (PBDEs), per- and polyfluoroalkyl substances (PFAS), and 6PPD pose to the Watershed.

The Tribe recognizes Ecology's diligence in supplementing its DNS with a summary of the state of research into sources and effects of these CECs. Nevertheless, as the DNS acknowledges, there is incomplete and unknown information about these CECs, and this dearth of information hinders robust regulatory action. DNS at 18. A lack of information should not be justification to risk the recovery of the Nisqually Watershed and the species it supports, over the Tribe's objection. The DNS indicates that PFAS and PBDEs in biosolids have been found at differing levels in Washington State. *Id.*

The Tribe knows this to be true from our ongoing research. Nisqually steelhead suffer from the highest observed levels of toxic loading of PBDEs in the Puget Sound region. While other watersheds in the State with much lower loading might be able to withstand the risk of receiving biosolids likely containing elevated levels of PBDEs, the Nisqually Watershed cannot. The increased risk of extinction to steelhead, an incredible biological and Treaty-protected

resource, is too high. The DNS should have evaluated excluding the Nisqually Watershed as an “inappropriate” geographic area from the draft general permit’s scope.

The Tribe renews its request that the statewide general permit for biosolids management exclude the Nisqually Watershed, just as it does not apply to federal lands, lands within the boundaries of Washington Tribal Reservations, or lands outside of Washington Tribal Reservations that are held in trust by the federal government for a Tribe. In the alternative, the Tribe desires to continue its ongoing government-to-government conversations with Ecology regarding best practices for information sharing and monitoring of biosolids in the Watershed.

Thank you in advance for your consideration.

Response to T-1

Thank you for your comment. In reference to comments about issues raised on the Draft General Permit, please refer to the response provided to the Tribe’s comments in the Response to Comments on the General Permit published in 2022⁷ (pages 126, 195-199, 249, 293-294).

The current state of the science on Polybrominated diphenyl ethers (PBDEs) in biosolids is addressed in the Checklist¹ under the heading "PBDEs" (pages 18-19). Since PBDEs have been phased out, the chemical industry has looked to use safer alternative brominated flame retardants and chlorinated phosphates, as discussed in the Checklist¹ (page 20). EPA hasn't yet concluded that conducting risk analysis on these alternative PBDEs is warranted.

Ecology is committed to continuing government-to-government conversations with the Nisqually Indian Tribe regarding best practices for information sharing and monitoring of biosolids in the Nisqually Watershed.