Kevin Freeman

Please see attached documents for comments

INLAND EARTH SCIENCES

MEMORANDUM

To:
CAFO Permit Manager, Water Quality Program
Washington State Department of Ecology

Copies:

From:
Kevin Freeman

Date:
April 10, 2026

Subject:
Early Feedback for Upcoming Reissue of the CAFO General Permit

Thank you for accepting feedback regarding the current (2023) version of the Washington State Department of Ecology (Ecology) Water Quality Program Concentrated Animal Feeding Operation (CAFO) General Permit (the "Permit"). The following comments reference the National Pollutant Discharge Elimination System (NPDES) And State Waste Discharge (SWD) version of the Permit (the "Combined Permit").

S1.A. Facilities Required to Seek Coverage under This General Permit

A comprehensive discussion of what constitutes a groundwater discharge in Washington State, both generally and specifically for the Permit, would be beneficial towards informing CAFO operators if a facility requires permit coverage. This comment is particularly applicable to land application fields.

S4.B Production Area Run-off Controls

Vegetated treatment areas (VTA) are referenced as a possible control practice, however the definition of VTA in the permit references no guidance, standards, or practices for their design, construction, operation, or maintenance. Chapter 11 (*Livestock Management: Animal Confinement, Manure Handling & Storage*) of Ecology's *Voluntary Clean Water Guidance for Agriculture* (Ecology Publication 20-10-008e, February 2026) references the Natural Resources Conservation Service (NRCS) Washington State (WA) Conservation Practice Standard (CPS), 635 - *Vegetated Treatment Area* when planning and designing a vegetated treatment area. The Permit should reference accepted guidance, standards, or practices for VTAs.

S4.C Storage of Manure, Litter, Process Wastewater, Other Organic By-Product, and Feed

1. Liquid Waste Storage Structures

This section states that "*Liquid waste storage structures must be designed, constructed, and maintained to have a maximum water specific discharge of* $1 \times 10^{-6} cm^3/cm^2/s$ *without consideration for manure sealing*…" The use of a specific discharge standard for liquid waste storage structures can lead to complexities in the design and operation of these structures. Ecology may wish to consider use of a permeability standard as opposed to a specific discharge standard.

Additionally, the permit references no guidance, standards, or practices for the design, construction, operation, or maintenance of liquid waste storage structures. Ecology may wish to consider inclusion of NRCS WA CPS 313 – *Waste Storage Facility* and the associated practices standards CPS 520 – *Pond Sealing or Lining, Compacted Soil Treatment*, CPS 521 – *Pond Sealing or Lining, Geomembrane or Geosynthetic Clay Liner*, or CPS 522 – *Pond Sealing or Lining, Concrete* as accepted standards for liquid waste storage structures.

2. Solid Materials Storage Facilities

Subheading "a." of this Section states "*Locate structures on impervious surfaces (such as concrete) or soil pads with low permeability*." Ecology should provide a numerical value for an acceptable low permeability. Recently, IES completed an evaluation of a lime-stabilized natural soil pad for storage of compost. This evaluation was reviewed by Ecology and a permeability ranging from 1×10^{-5} to 1×10^{-6} cm/s was determined to be acceptable for storage of compost under a Solid Waste Permit (document attached to this memorandum).

S4.O Manure Export

CAFO operators exporting manure to unaffiliated third parties should be held to no greater tracking or recordkeeping standards than commercial fertilizer dealers selling to third parties. Conversely, any requirements for manure export to a third party considered for the upcoming permit cycle should be not limited strictly to CAFO operators but should be imposed on all providers of nitrogen fertilizer in Washington State.

S5.D. Groundwater Monitoring

The Groundwater Monitoring portion of the Permit was included in response to the June 29, 2021 State of Washington Court of Appeals Division II decision rendered in *Washington State Dairy Federation v. State* [18 Wn.App.2d 259, 490 P.3d 290 (2021)]. The Court made the point that CAFOs engage in practices (manure lagoons and compost areas) that could "cause or contribute to a violation of water quality standards", specifically groundwater quality. While the Court's decision did not specifically direct Ecology to implement groundwater monitoring as part of the Permit, Ecology determined that groundwater monitoring would be necessary to ensure permit compliance.

Direct monitoring of groundwater (i.e. groundwater sampling through use of monitoring wells) at CAFO facilities can be problematic for number of reasons. Most CAFOs are situated in areas of intensive agricultural usage by a variety of producers (vegetable and grain growers, orchardists, vintners, hop growers, in addition to other neighboring CAFO facilities) and these areas have a long history of agricultural use and production. Various types of producers are often located adjacent to each other, and their crop nutrient needs vary and result in widely diverse fertilization practices. If groundwater is located at significant depth below a CAFO operation, sampling of that groundwater may not represent the actual effect (if any) that facility's activities. The intent of groundwater monitoring under the permit is to determine if a CAFO operation is directly degrading groundwater quality. Sampling of groundwater does not provide the "early warning" that other monitoring activities can provide. Ecology should instead rely on the development of Permit requirements that provide for the evaluation of impacts as allowed under Washington Administrative Code (WAC) 173-200, *Water Quality Standards for Groundwaters of the State of Washington*, Section 080 – *Evaluation* using practices such as vadose zone monitoring, evaluation and monitoring of solid and liquid manure application, evaluation of treatment or containment processes, and (evaluation of management practices.

December 12, 2025

Nehemias Chalma
Compost Operations Manager
Natural Selection Farms, Inc.
P.O. Box 419
Sunnyside, WA 98944

RE: Compost Liner Evaluation Approval (HSW2018-00009).

Dear Nehemias Chalma,

On September 5, 2025, The Yakima Health District (YHD) and Washington State Department of Ecology (Ecology) received, and have now reviewed, the *Compost Pad Geotechnical Testing* memorandum prepared by Inland Earth Sciences on behalf of Natural Selection Farms. Based on Ecology recommendation, YHD approves this evaluation which supports the compost liner provides sufficient protection of groundwater. Ecology's approval letter is enclosed as Enclosure 1.

Further, Ecology recommends the liner is evaluated for permeability every five (5) years to ensure the pad is continuing to meet the performance standards and protect groundwater. YHD agrees and is willing to discuss this requirement with the facility prior to the renewal of the solid waste handling permit in 2026.

If you have any questions, contact steven.newchurch@co.yakima.wa.us or (509) 249-6504.

Sincerely,

Steven Newchurch, REHS
Environmental Health Coordinator
Yakima Health District

cc: Washington State Department of Ecology

Enclosure(s): (1) *Natural Selection Farms – Test Results Regarding WAC 173-350-225(4)(f)(v)* from Ecology to YHD dated December 9, 2025.

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Central Region Office
1250 West Alder St., Union Gap, WA 98903-0009 • 509-575-2490

December 9, 2025

Steven Newchurch
Yakima Health District
1210 Ahtanum Ridge Drive
Union gap, WA 98903

Re: Natural Selection Farms – Test Results Regarding WAC 173-350-225(4)(f)(iv)

Steve Newchurch:

Washington Administrative Code (WAC) 173-350-225(4)(f) requires a pad to be constructed of materials such as concrete, or asphalt. The jurisdictional health department may allow pads to be designed with materials other than those listed above provided the applicant demonstrates in the engineering report that the pad provides sufficient protection to meet the performance standards of WAC 173-350-040.

Natural Selection Farms' (NFS) compost pad is constructed of lime-stabilized soil. Ecology performed a study to examine the on-site permeability of the lime-stabilized soil and produced a report titled *Permeability Test of Lime-Stabilized and Natural Soils used as a Pad for Composting Organic Materials* dated June 2002. Ecology has no record of any testing of the pad between 2002 and 2024. Since NFS has a pad that is designed with materials other than concrete or asphalt Ecology recommended that the pad to tested.

NFS hired Inland Earth Sciences (IES) to develop a scope of work to define how to test the pad. IES completed 10 test pits each to a depth of 4 feet. Samples were obtained from the sidewalls of each test pit at depths of 0-1 foot, 1-2 feet and 2-3 feet below the ground surface (bgs). The samples were combined according to their depth into three composite samples representing 0-1 foot, 1-2 feet and 2-3 feet bgs. The report states the soil in the sidewalls of the test pits was dry and dense. The report states that the soil was not saturated. Compaction and hydraulic conductivity tests were completed on the 0–1-foot bgs composite sample. The other 2 composite samples were stored for further testing if needed. IES presented the results in a Technical Memorandum dated August 29, 2025.

The lime-stabilized soil was categorized as a low plasticity clayey silt (ML). After Standard Proctor analysis three samples were prepared for saturated hydraulic conductivity testing at 90, 95 and 100 percent compaction effort according to the Standard Proctor analysis results. The range for the saturated hydraulic conductivity results is 1.55×10^{-5} cm/s at 90 percent compaction to 1.12×10^{-6} cm/s at 99.9 percent compaction.

The average permeability of concrete ranges from approximately 1×10^{-5} to 1×10^{-6} cm/s (https://cellularconcretetechnologies.com/wp-content/uploads/2014/07/CSLM-Permeability.docx). The permeability test results for the lime-stabilized soil at 90 percent compaction are equivalent to a concrete pad.

Ecology approves the submitted Technical Memorandum to meet the requirements of WAC 173-350-225(4)(f)(iv). Ecology suggests that NFS tests the pad every 5 years. This can be completed by testing the compaction in the upper 0–1-foot bgs at 5 random locations to meet the 90 percent compaction. We recommend collecting soil samples at each location for a composite soil classification test. If the compaction is above 90 percent and the classification is consistent with the ML classification, then the pad meets the requirements according to the WAC 173-350-225(4)(f)(iv)..

If you have any questions, you may contact me at megan.rounds@ecy.wa.gov or 509-385-8497.

Sincerely,

Megan Rounds

Megan Rounds, PE
Environmental Engineer
Solid Waste Management Program
Central Regional Office
Washington State Department of Ecology

CC: Ecology Records