



Washington State Dairy Federation

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Re: Comments on NPDES and State CAFO Permit Draft

Dear Director Bellon and Program Manager Bartlett,

On behalf of Washington's dairy farmers and their families, we would like to thank you for the opportunity to comment on the Washington State Department of Ecology's proposed changes to the NPDES and State CAFO permits.

The Washington State Dairy Federation has advocated on behalf of our dairy farmer members since 1892. Washington's 417 dairy farms produce an economic effect in our state's economy of an estimated \$5.2 billion. According to estimates by Washington State University in 2013, more than 18,000 jobs are dependent directly or indirectly on dairy farms. Our dairy farms produce a wide variety of dairy products, and they have done so while protecting water resources under the 1998 State Dairy Nutrient Management Act. A recent Washington State Department of Agriculture report shows 95% of all dairy farms are in compliance with the rules and requirements of the Dairy Nutrient Management Act, and 96.9% of all dairy fields are at or below the recommended nutrient levels. (See http://app.leg.wa.gov/ReportsToTheLegislature/Home/GetPDF?fileName=ESSB6052-3_WSDA-NutrientManagementTraining_12-31-2015_3dfdb60c-0c3b-47a1-b751-a2d020bdda9a.pdf.)

This very impressive performance level was achieved because dairy farmers in Washington invested heavily in additional practices and technology after the passage of RCW 90.64, the Dairy Nutrient Management Act. Many dairy farms could not afford the investments and went out of business. The remainder of the dairies greatly improved performance and water quality.

Lagoons were installed at great expense and with the expectation that this sufficiently “good practice” would “be protected from government over-regulation” (per the legislative intent of RCW 90.48.450). The lagoons were consistent with state and federal agency expert recommendations, and Ecology agreed that NRCS lagoon standards were sufficient for compliance.

According to Ecology’s “Fact Sheet” there are just over 400 dairies left in our state. That’s just 20% of the 2,000 dairies that existed in Washington state 25 years ago. The adoption of stringent water quality regulations greatly accelerated the decline in the number of dairy farms. The farmers who invested in clean water were able to continue to operate dairies in Washington state. The rest went out of business or relocated to neighboring states with less stringent regulations.

WSDA’s Dairy Nutrient Management Act regulations, enacted by the Legislature in 1998, are working well to improve water quality consistent with agricultural viability. Washington’s remaining dairy farmers are proud of that legacy, and they justifiably question the *need* for many of the changes proposed in the permits.

We appreciate the amount of time Ecology staff has spent drafting this proposal and listening to public comments. We believe, like Ecology, that the best approach on this issue is to have two permits available – a state-only permit and a combined federal/state permit. We believe the two permit system is appropriate given the two sets of laws (federal and state) used as the basis for these permits. We ask that these two permit options remain available.

However, we have significant concerns with this draft of these proposed permit requirements. The extent and expense of the proposed regulations will drive more dairy farms out of business. We will explore those concerns in more detail below. For ease of reading and understanding our concerns, we have divided our comments into different sections, each with its own points of analysis.

Existing Law and Court Rulings

RCW 90.48.450 requires Ecology to minimize the possibility that its actions will contribute to the conversion of agricultural lands to nonagricultural uses and to ensure that agency regulations are consistent with the Legislature’s intent at the passage of RCW 90.48.450.

RCW 90.48.450

The legislature finds that agricultural land is essential to providing citizens with food and fiber and to insuring aesthetic values through the preservation of open spaces in our state. The legislature further finds that government regulations can cause agricultural land to be converted to nonagricultural uses. *The legislature intends that agricultural activity consistent with good practices be protected from government over-regulation.*

WSDA's Dairy Nutrient Management Program has a strong track record of regulating dairies while avoiding over-regulation, consistent with clear state legislative intent. WSDA already has the technical and enforcement capacity to perform many functions that would be unnecessarily duplicated by Ecology under the proposed permit.

Ecology should better coordinate with WSDA and other agencies to avoid duplication of permit functions and requirements and to protect agricultural viability.

In addition to those producers who will want or need to apply for a combined CAFO National Pollutant Discharge Elimination System (NPDES) permit, the current drafts also (unfortunately) make clear that state ground water quality permits will be *mandatory* for most other dairies.

The mandatory nature of these permits raises significant questions of agency authority.

With the proposed permits, particularly the mandatory nature of the permits, the Department of Ecology exceeds its statutory authority. See RCW 43.21A.080 below.

RCW 43.21A.080

Rule-making authority.

The director of the department of ecology is authorized to adopt such rules and regulations as are necessary and appropriate to carry out the provisions of this chapter: PROVIDED, That the director may not adopt rules after July 23, 1995, that are based solely on a section of law stating a statute's intent or purpose, on the enabling provisions of the statute establishing the agency, or on any combination of such provisions, for statutory authority to adopt the rule.

Ecology may not adopt rules or create new permit obligations "that are based solely on a section of law stating a statute's intent or purpose, on the enabling provisions of the statute establishing the agency, or any combination of such provisions, for statutory authority to adopt the rule" (RCW 43.21A.080). Under the APA rule, a substantive permit or regulatory program acting like a rule is not valid if it "exceeds the statutory authority of the agency."

34.05.570(2)(b)(ii)(c) provides that "In a proceeding involving review of a rule, the court shall declare the rule invalid only if it finds that: The rule violates constitutional provisions; the

rule exceeds the statutory authority of the agency; the rule was adopted without compliance with statutory rule-making procedures; or the rule is arbitrary and capricious.”

At a minimum, the proposed rules for mandatory permits exceed statutory authority.

State law prohibits the Department of Ecology from requiring a permit for any animal feeding operation unless Ecology first determines that the operation “is a significant contributor of pollution to the surface or ground waters of the state” and only after “the director has conducted an on-site inspection of the operation and determined that the operation should and could be regulated under the permit program.”

RCW 90.64.020

Concentrated dairy animal feeding operation—Designation—Permit.

(1) The director of the department of ecology may designate any dairy animal feeding operation as a concentrated dairy animal feeding operation upon determining that it is a significant contributor of pollution to the surface or ground waters of the state. In making this designation the director shall consider the following factors:

(a) The size of the animal feeding operation and the amount of wastes reaching waters of the state;

(b) The location of the animal feeding operation relative to waters of the state;

(c) The means of conveyance of animal wastes and process waters into the waters of the state;

(d) The slope, vegetation, rainfall, and other factors affecting the likelihood or frequency of discharge of animal wastes and process waste waters into the waters of the state; and

(e) Other relevant factors as established by the department by rule.

(2) A notice of intent to apply for a permit shall not be required from a concentrated dairy animal feeding operation designated under this section *until the director has conducted an on-site inspection of the operation and determined that the operation should and could be regulated under the permit program.*

The Washington Court of Appeals found Ecology’s solid waste rules to be outside the authority of state law with regard to regulation of animal nutrients. The court held that “agricultural manures used in agricultural operations are not ‘waste’ because they are still intended for use,” and “Accordingly, we interpret the statutory definition of ‘solid waste’ to exclude agricultural manures used for agricultural purposes” *Littleton v. Whatcom County* (121 Wn. App., 2004).

The court said “*if chicken manure used for agricultural processes is solid waste requiring a solid waste handling permit, farmers across the state who currently use manure as fertilizer are criminally liable for operating without a permit. The legislature could not have intended this consequence*” and state law “*does not authorize the DOE to include agricultural manures used for agricultural purposes in the definition of solid waste.*”

Ecology has now shifted its attention to RCW 90.48.160 (a 1955 statute not amended since 1989) as newly found authority for the state law portions of the proposed permits. Ecology's "Fact Sheet" states: "RCW 90.48.160 requires that any *commercial or industrial operation* which causes *waste material* to enter a surface water or ground water of the state (i.e. a discharge) must have a permit from Ecology" and "The only time a discharge is lawful is when a permit to discharge is obtained from Ecology prior to the discharge occurring (RCW 90.48.160)."

Ecology's restatement inaccurately claims that nutrients used for agricultural purposes are "waste" covered by this statute. As in *Littleton*, Ecology's errant legal reading reaches beyond the agency's authority.

RCW 90.48.160 is a legally inappropriate authority for the proposed state permit (and the state portion of the combined permit). RCW 90.48.160, regarding "*waste disposal* permits," applies only to "any person who conducts a commercial or industrial operation of any type which results in the *disposal of solid or liquid waste material into the waters of the state*" RCW 90.48 does not define waste or solid waste.

The court pointed out in the *Littleton* case that, in 1970, the Legislature removed the word "manure" from the definition of "solid waste." (See definitions in RCW 70.95.030).

The Legislature was additionally clear in their intent not to include manure in the definition of "solid waste" by specifically exempting "unmanipulated animal manure" from the "solid waste permit requirements" (see RCW 70.95.205 and RCW 70.95.030).

Since the Legislature has specifically and deliberately excluded animal manure from the definition of solid waste, the Department of Ecology lacks authority to mandate application for a waste disposal permit under RCW 90.48.160.

Unless Ecology can provide adequate *statutory* authority, any Ecology state waste permit (or state ground water protection provision in a combined permit) related to agriculture should be **optional only and not mandatory**. To require a dairy or other AFO to get a concentrated animal feeding operation permit, Ecology must first conduct "**an on-site inspection of the operation**" and determine the operation "should and could be regulated under the permit program" because the operation is in fact "*a significant contributor of pollution to the surface or ground waters of the state.*" See RCW 90.64.020.

Economic Impact Analysis

The Economic Impact Analysis (EIA) that accompanied this permit is incomplete and inaccurate. Our preliminary estimates of compliance costs are extremely high compared to the very low cost estimates provided by Ecology. The analysis needs to measure the fiscal

impact of *new* changes, but it did not do that. This measurement is necessary so we can have an honest discussion about actual impacts, and the law requires such a level of economic analysis and specificity. The following areas are deficient.

1. **Crop production losses from no nutrient application areas:** The new “no nutrient application” language on page 27 of the draft permit prohibits *all* nutrient sources. Assuming crop production is uneconomical without fertilizer, we estimated crop-loss costs for an example farm in both eastern Washington and western Washington.

A 1,000-acre eastern Washington farm with a typical corn/triticale rotation yields average feed production valued at \$1,850 per acre. If we assume a 10% crop loss due to the current wording that restricts nutrient application to land adjacent to any “waters of the state,” our estimate of *just crop loss* is \$185,000 per year.

A 300-acre western Washington farm with 10% loss of corn due to no fertilizing within 100 feet of any waters of the state equals *lost production* of \$36,000/year.

Given the uncertainty of what Ecology considers “waters of the state” versus “waters of the US” and given statements (see Whatcom hearing statement by Jon Jennings) that dry ditches (and, we assume, streams, swales, and wetlands) are “waters of the state,” we know many farms will incur a much more than 10% loss of use of farmland. Some Skagit farms report that, given the drainage system of ditches, the resulting production losses will occur on 50-66% of their land. We have no idea how a family could continue dairy farming under this permit condition. Your economic staff should consult with several different farms in different locations for a more accurate estimation of land and crop losses.

The analysis also failed to account for the cost to move manure fertilizer to other fields or purchase land to restore nutrient balance and feed production capacity (if available). This factor will add huge capital costs to farms to replace the lost use of the *newly* required buffered areas. Both RCW 19.85 and WAC 173-226-120 require analysis on changes from existing requirements as written in this draft. Later in these comments, we propose policy “alternatives” to the current language.

However, currently there is no requirement to not use these lands or applying nutrients on these lands. The current requirement is *to not get manure, litter, or nutrients in the water*. *Changes must be assessed in the EIA*.

2. **Fall and spring soil tests:** Reports from various sources indicate the test lab fees in the EIA are 50% too low. A check with regional soil labs on test costs will clarify these costs.
3. **Reporting, recording, recordkeeping, and daily/weekly inspection (section 2.10 of EIA):** There is no indication that any analysis was done of the cost for these *added* requirements. The costs were simply dismissed. (See last line page 10 of EIA.) Reports

from current permittees indicate there is a very significant administrative cost in time (above and beyond requirements for recordkeeping under RCW 90.64). The EIA must analyze these new costs. We suggest checking with current CAFO permittees or other NPDES permit holders to determine costs of these new administrative requirements in the draft permit.

4. **Manure pollution prevention plan:** No analysis was done on the cost to develop this MPPP. Conservation District planning staff should be able to help estimate costs of this action.
5. **Provide an engineering assessment on lagoons within two years of permit issuance:** The EIA assumes every dairy has only one lagoon. This is not the case. We suggest your staff consult with the staff at the Washington State Department of Agriculture Dairy Nutrient Management Program. Officials there should be able to provide a more accurate range of the number of lagoons per farm. These figures can then be used to more accurately estimate the costs each prospective permittee will incur.
6. **Public disclosure of reports:** No cost analysis was done on what this may cost a farm in terms of preparing, keeping, and complying with public record requests. Records that the public may request include any and all records required in the permit. Those requests can occur at any time, by anyone, for any records required. Compliance with public records requests can and has been a significant cost to state and local governments. Our farmers have no idea what the compliance costs will be for this aspect of the permit. These costs are new, and at least some estimation of this cost should be provided.
7. **Lagoon capacity will be affected by new limits in the permit on timing of application:** The EIA does not analyze costs because of inaccurate assumptions, as demonstrated by this statement: "...industry representatives indicate that there is adequate storage...." Farms today generally have adequate storage for normal years, but storage systems must be able to handle anomalous challenges such as wetter years, like the La Niña pattern years of 2010-2012 which were marked by late and very wet spring weather. The exceptionally wet springs of 2011 and 2012 pushed storage systems to their capacity.

The permit draft has new restrictions on applications. (See S4.J.7 regarding the restricted applications after October 1, no applications to bare soil until within 30 days of planting, etc.) These restrictions will result in the need for producers to add storage to store manure longer. The costs associated with building additional storage were not included in the EIA. A call to any conservation district or NRCS office that has recently calculated storage needs and helped design and install storage will give Ecology staff an accurate assessment of additional storage needs as well as current capital cost of storage systems. We will not be surprised if the added storage increases capital costs more than \$500,000 per farm.

8. **Prevent direct animal contact with water (page 15 condition S4.E.):** The language in the draft is a change from federal EPA language and different from the Idaho permit used as one of the EIA baselines. See https://www3.epa.gov/region10/pdf/permits/npdes/id/cafo_fp_idg010000_wapps.pdf. Specifically, the EPA, Idaho, and Oregon permits say animals in confinement areas may not have contact with waters of the US. This is the EIA baseline, and it is also required for compliance under RCW 90.64. However, the draft language on page 15, while confusing, indicates that (all) livestock must not come in contact with surface water or conduits. It does not say confined livestock, so all livestock must be restricted from access to any land that might be “waters of the state” or land that is a “conduit to surface waters.” This change must be analyzed. It is difficult for us to calculate the losses because of the uncertainty between waters of the US and waters of the state, but costs must be estimated for farmers who, under the draft permit, could no longer use pasture land with dry/seasonal ditches, swales, gullies, depressions, historically pastured seasonal “wetlands,” hillsides or fields with slopes, or anything that could drain to “waters of the state.” The cost of rebuilding fences alone could range from thousands of dollars for small farms to hundreds of thousands of dollars for larger farms.

Permit Fact Sheet

The lagoon narrative on seepage (pages 32-33) is missing references or discussion on Darcy’s law/equation in relation to soil water movement in unsaturated soils (<http://www2.nau.edu/~doetqp-p/courses/env320/lec10/Lec10.html>). The discussion in the fact sheet leaves the impression that soil water only moves down and only according to Darcy’s law. Hydrogeologists we have talked to indicate moisture flux/movement changes in the vadose zone, and Darcy’s law formula must be modified based on soil moisture and soil texture in the unsaturated zones under the saturated liner.

Other than one reference regarding seepage rates through thick clay soils, the literature review has no discussion on changes to permeability in compacted clays or changes in use of Darcy’s law in tight soils. Soil water movement is not as simple as water falling via gravity through a known medium.

The reference to Darcy’s law on page 68 regarding lagoons also indicates a seepage rate. The seepage rate often referenced by Ecology staff and examples used (such as Ham) are the calculated rates for the saturated zone of the clay liner. It is our understanding that water flux is different in the vadose zone as compared to the more impervious but saturated clay liner. We also question the fate of nutrients, especially nitrogen. Evaluations, studies, and data indicate the conversion, fate, and transport of nitrogen is significantly reduced by conversion to N₂ gas via combined nitrification-denitrification or anammox (S. Baram at <http://www.ncbi.nlm.nih.gov/pubmed/23099954>). Nitrogen is non-existent in some cases (Ericksen, Sheridan Lagoon evaluation at <https://fortress.wa.gov/ecy/publications/SummaryPages/92e24.html>), or nitrates are stored

in shallow soil vadose layers immediately under the liner (Haak Dairy soil test data, attached).

The reason we focus a bit of time on these two questions (Soil water movement and fate of nitrogen) is historical recommendations by Ecology staff with a bias towards double synthetic liners. This preference is expressed in the literature review and in reports by Ecology staff (Kimsey 2002). Yet, there are two reports of synthetic liners that failed in Whatcom (pers. comm. Chris Clark, P.E. at Whatcom Conservation District). There is also data on a decommissioned lagoon in Yakima that indicate little to no transport of nitrate beyond shallow layers of the vadose zone. (See attached Haak Dairy soil tests.) These results match results of other studies showing clay liners are effective. (See http://lib.dr.iastate.edu/cgi/viewcontent.cgi?article=1263&context=abe_eng_pubs.)

Soil liners appear to be the better technology for farms. Thick layers of clay resist mechanical damage. Unlike plastic, soil does not bubble up from gas (as the Whatcom liners are reported to have done), and soil is not susceptible to tearing like plastic or cracking like concrete. Ecology staff have indicated in public meetings that seepage rates for soil liners do not automatically equate to a discharge. Science such as the study by S. Baram (<http://www.ncbi.nlm.nih.gov/pubmed/23099954>) supports that conclusion, but it also shows that a saturated liner that provides some moisture to the immediate vadose zone is essential to reducing ammonium nitrogen to inert nitrogen gas. Soil-lined lagoons have provided an important tool and recommended tool for farms to improve overall farm management, and they have resulted in improvements in surface and groundwater quality. (See study conclusions by Erickson in this study by Ecology: <https://fortress.wa.gov/ecy/publications/documents/0203002.pdf>.)

Literature Review

Our concerns regarding the literature review are listed below. We are focusing on “recommendations” beginning on page 102.

1. **Timing of manure applications:** The statement in the second paragraph that manure should not be applied during the “non-growing season” is wrong as a fundamental basis for protecting water quality and for growing food. Manure is not synthetic fertilizer. Decomposition of manures and composts as well as mineralization to plant available nitrogen take time, moisture, oxygen, and heat. While there is some disagreement about exact rate and temperature regimes in recent science, there is a well-documented relationship between soil temperature and rate of mineralization. Colder equals slower or no mineralization. Farmers understand the science from practical experience. Manure is a slow release nutrient source. Cold soils mean a longer time to get nitrogen to plant available forms. These relationships of soil temperature are encompassed in recommendations such as T-sum 200, the Application Risk Management (ARM) program, and others. Application on cold soils, if surface water runoff BMP’s are in place to

prevent runoff, is consistent with the last statement in the “timing” section of the recommendations. Applications in late winter and early spring are applications *before* the growing season but are done to ensure the nutrients are in the right form, at the right place, at the right time, and in the right amount for growth during the growing season. (See science links in the CAFO permit section below.) The goals are to protect water quality *and* grow food. To say applications should not be done according to a “calendar” and to then say applications should not be in “the non-growing season” is flawed logic. The growing season versus non-growing season is a calendar, but it is different from a monthly calendar.

An additional point on timing that is included in the literature review but is treated incorrectly is that there is significant winter and early spring crop growth and fertilizer demand in cover crops, forage crops, and grass fields. This website (<http://manure.ucdavis.edu/files/111844.pdf>) gives an excellent set of tools for California farmers to determine winter nitrogen demand. The focus is and should be on the right time, right place, right amount, and right form.

2. **Mass balance:** “*Researchers advocate calculating mass balances on a monthly basis for each individual field...*” The first citation in the literature for “monthly mass balance calculations” on page 72 is for this paper: <http://alfalfa.ucdavis.edu/+symposium/proceedings/2004/04-255.pdf>.

There is simply **no recommendation** for monthly mass balance calculations in this paper. There is no way to characterize this paper and these researchers as advocating for **monthly** mass balance calculations. The report wrongly summarizes the research and then makes recommendations based on those inaccurate characterizations. Mischaracterization of the science in the literature review is exceedingly troublesome.

3. **Groundwater monitoring:** The literature review includes numerous, unsubstantiated statements about groundwater monitoring. Examples include the second sentence in the groundwater monitoring recommendations on page 102 and this opening sentence on page 82:

The majority of researchers agree that groundwater monitoring is the only way to definitely determine impacts to groundwater quality from residual soil nitrates.

Several very similar declarations are found in the “summary statements” on pages 41, 85, 97, 101, and 103. Not only are these statements lacking citation, they are contradicted by papers and presentations. (See <http://alfalfa.ucdavis.edu/+symposium/proceedings/2004/04-255.pdf>.)

Another study referenced in the literature review contradicts the generalizations regarding monitoring:

*Groundwater monitoring is accomplished with typically one to two monitoring wells upgradient of the targeted facility to determine background or ambient concentration, and two and or more wells immediately downgradient of the facility. However, linking groundwater pollution in monitoring wells to specific activities or sources within or near an AFO **often yields ambiguous results**. This is due to the ubiquitous release of two key groundwater pollutants of concern, nitrate and salinity, across an AFO's various management units (lagoons, corrals, manured fields), as well as surrounding farmland, which may receive applications of fertilizer or manure. There are alternative monitoring approaches to address this dilemma. (Harter et al., page 10 at https://nicholasinstitute.duke.edu/sites/default/files/ni_r_14-03_sr2_final.pdf)*

The inaccurate generalizations and summations of the science in this literature review demonstrates a concerning lack of impartiality.

A number of studies and techniques are available to help farmers manage soil nitrates to be both productive farmers and protective of ground and surface water resources. The literature review cites several articles indicating that proper best management practices have a demonstrated protective effect on our water resources. Monitoring wells may play a part in our efforts to understand, protect, and improve groundwater quality, but we have not yet had an explanation of why it is prudent or scientifically supported to require locating groundwater monitoring wells simply based on the fact that a farm is a dairy farm subject to a permit by Ecology. Why is that a reasonable basis for locating monitoring wells, and what useful information will it yield? (See again the discussion by Dr. Harter at <http://alfalfa.ucdavis.edu/+symposium/proceedings/2004/04-255.pdf>.) The authors of the literature review clearly seem to be advocating for requiring monitoring wells on dairy farms by mischaracterizing citations, repeating generalizations, and proffering their opinions.

In summary, the literature review contains a great many studies and references, and we will not comment further on this literature review since modification of it is unlikely. However, we must point out the problem of trust that arises when the report misrepresents citation content and mischaracterizes study findings. Representing opinion or personal bias as fact is a breach of trust. We expect a regulatory agency such as Ecology to use objective, trustworthy standards. Instead, this literature review is sadly lacking the straightforward professional rigor that builds trust between Ecology and stakeholders. Once trust is lost, it is hard to regain.

Detailed Discussion of Draft CAFO Permit

What follows are our comments on the draft CAFO permit. The comments below use the page numbers and section numbers for the combined permit for ease and clarity. Please consider our comments and changes as relevant for *both the state and the combined permits*

except in item 27 below, where we have specific concerns and questions regarding public records availability under the state permit.)

1. **Page 10, S2.E 3.:** If a farm has a permit and reduces herd size below 200, why does this language imply there will be a “significant contributor” designation. We suggest changing “will” to “may” to keep consistent with treatment of all other small CAFOs.
2. **Page 13, S4.B 2.:** The proposal says that farmers must route *all* water from feed storage areas to lagoons. But some producers use catchment filter areas such as NRCS Practice Code 393. We suggest an additional option for use of filter strips where appropriate. Without additional options, some farms have feed storage areas remote from lagoons and may not be able to route to lagoons. Other farmers use treatment and filter areas without issue, yet this mandate could add significant volume of water to storage systems, requiring additional storage (at a cost that must be factored into the EIA).
3. **Page 15, S4.D:** The second line contains the words “other contaminates.” Clarification is needed. This verbiage could be read to mean gutter water with dust or bird droppings would have to be routed to a lagoon (and require added storage capacity, and at what cost and for what benefit?).
4. **Page 15, S4.E:** The draft permit language is ambiguous and creates uncertainty. We suggest either current EPA, Idaho permit, or Oregon permit language. See page 110 of the Oregon 2016 permit at <http://www.oregon.gov/ODA/shared/Documents/Publications/NaturalResources/NPDESGeneralPermit.pdf>.

The language in this draft permit expands the federal EPA permit language to require prohibiting all livestock, both in confinement areas (as the Idaho and EPA permits state) and on the outside of the confinement area from contacting surface waters or “conduits” to surface water (except for “puddles” that do not drain anywhere). Most producers have worked with conservation districts and the Washington State Department of Agriculture to eliminate, restrict, or control access to real, identifiable surface waters. However, Ecology’s use of “waters of the state” rather than “waters of the US” creates a dilemma and uncertainty for farmers. We are very concerned that farmers will not know when they are compliant; therefore, farmers cannot know the costs of compliance or when they may face enforcement or the risk or threat of litigation. An example of the differences between federal and state definitions is this excerpt from a note sent by Jon Stormon at Ecology to the livestock workgroup in 2005.

In Feb 2005, the Dept. of Ecology Issued a “Notice of Penalty No. 1953” to Evans Fruit Company, Cowiche, WA, for applying fruit packing wastewater to snow. An appeal of this action may come in the future but has yet to be heard in the PCHB.

I'm sorry about my lack of accuracy. What I have learned, I believe supports the argument that snow can be considered waters of the state of Washington and that any person discharging polluting matter to snow may face enforcement actions.

Mr. Stormon also cites this PCHB decision as evidence that any water including snow is waters of the state:

<http://www.eluho.wa.gov/Global/RenderPDF?source=casedocument&id=1185>).

WOTUS does not include things like snow as water, yet farmers may be found to be in violation of polluting waters of the state if our cows are out grazing and it snows.

5. **Page 17, S4.H:** We are concerned that sampling and reporting dates create a poor process. If a nutrient budget must be submitted by March 1 (as per S7.D), then nutrient tests will need to be taken by January or early February to use for budgeting. The arbitrary date of March 1 is unacceptable. (See comments and suggestions later under S7.D.)

Five percent seems arbitrary and, combined with “any changes” language in last paragraph, is unattainable. 10% variation is better. But why not tie sampling frequency to fall “report card” test results? If a farm has not more than 10% of fields above low and medium levels, source testing could be reduced to every other year.

6. **Page 17, S4.I:** All fields must be sampled in the fall and spring. Spring tests every year are largely duplicative of information from the fall tests and do not gain informative value from more frequency. We suggest spring tests on all fields at least every three years.
7. **Page 18, S4.I.1.:** We repeat our concerns about the timing of the testing and budgeting process in this section and as per conditions in S7.C. This timeline is simply unworkable. See suggestions under S7.C.
8. **Page 18, S4.J (second paragraph):** The phrase “the nutrient needs of the *crop at the time* the application will occur” needs to be clarified or eliminated. Fertilizer applications are always prospective. The farmer is supplying nutrients that will be available for the crop need at a point in the future. This phrase is confusing.
9. **Page 18, S4.J 1.a.:** We have no idea what “Year the nutrient budget applies to” means. Please clarify.
10. **Page 19, S4.J 2.:** This condition is overly prescriptive. A farmer’s job is to manage farms and prevent contaminating water. Farm cropping plans change between budgeting and actually working in the field in the spring. Our suggested changes to S7.C below include eliminating the submittal date and simply asking farms to use and retain nutrient

budgets for their fields, including any amendments throughout the year. The process in this draft is not workable.

11. **Page 19, S4.J 5.:** Why require written permission if a permittee applies to a neighbor's field? What is the purpose of value or need for this beyond the export records already required? Please remove.
12. **Page 20, S4.J 7.c.:** No application to greater than 90% saturated soils seems unprecedented, arbitrary, and likely unworkable. For example, during application via tankers, center pivots, or sprinklers the soil surface is often at or above saturation simply from the irrigation or application activity, yet the soil profile farther down is not. Please remove this language. This verbiage could be modified by the inclusion of the following statement: "...no applications to surface saturated soils if application will result in run off to surface water." See page 11 of 2016 Oregon permit at <http://www.oregon.gov/ODA/shared/Documents/Publications/NaturalResources/NPDESGeneralPermit.pdf>.
13. **Page 20, S4.J 7.g.:** No application if "*crop nutrient utilizations has stopped or is limited*" is vague and unworkable. Please remove this language. Farmers apply to fields in the spring before the crop needs it or has even been planted. Fertilizing is a prospective – not reactionary – activity. See this link for discussion on timing and grass growth in early spring: <https://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/em8852.pdf>.
14. **Page 20, S4.J 7.g.:** "Spring green up" is not a term we understand. T-Sum 200 is one standard timing guideline. Please revise this language to include understandable terms that are consistent with the guidelines of NRCS, WSDA, CDs, and other recently developed guidelines. For additional information see: <https://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/em8852.pdf>.
15. **Page 20, S4.J 7.h.:** No application to bare soil unless *within 30 days of planting* is unworkable, arbitrary, and unnecessary. Please eliminate. For suggested language please refer to the previous Washington permit or the current Idaho CAFO permit.
16. **Page 20, S4.J. 8.:** Language in this section is inconsistent, arbitrary, or erroneous.
 - a. The October 1 date is inconsistent with the dates of October 15 and 30 that are found in the current guidelines used by NRCS, CDs, and WSDA. Please revise to be consistent with current guidance such as NRCS 590.
 - b. Language in first paragraph ("*...fall soil tests showing...current soil nutrients will not provide...crop needs before...spring.*") conflicts with the third paragraph indicating a producer must show nutrient are needed "*...within 30 days.*" Crop nutrient needs are not based on 30 days. Revise and clarify to be consistent with first paragraph and

with nutrient budgeting process requirements. See also <https://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/em8852.pdf>.

- c. The fourth paragraph references S4.J 7, which is vague. Hence, S4.J 8 is equally vague.
 - d. The last paragraph of S4.J 8 contains an error. There is no S4.B. 11.i, and we cannot find any emergency situation section.
17. **Note on conditions in S4.J 7 and 8:** Taken together, all these prescriptions will likely mean farmers will have to add significant additional storage capacity. The cost of additional storage was not analyzed. All of these conditions were added by Ecology and are well beyond previous permit, current EPA draft, or Idaho permit language and as such must be part of an economic impact analysis.

Additionally, we have concerns about these conditions when viewed as a whole. When restrictions on manure applications after October 1 are added to restrictions on applications until “spring green up,” and are added to restrictions on applications to “setback areas,” and are added to restrictions on applications to bare soil unless within 30 days of planting, and are added to restrictions on application to >90% saturated soils, very few application options remain.

When these restrictions are combined, drastic results can occur. For example, these restrictions will result in poorly timed applications for plant growth needs, resulting in poor crop production. (Nitrogen mineralization takes time.)

These restrictions will result in compressing spring application season into a few weeks. If weather patterns such as La Niña of 2011 and 2012 repeat (as is predicted for spring of 2017), these conditions mean storage systems will exceed design capacity, and/or applications will be subject to the missing “emergency” clause, or applications will not occur until June or July after the first cutting or planted crop needs it. Mistimed applications will result in poor nitrogen utilization and actually result in worse fall soil tests and higher risk to groundwater. Compressing a spreading season to only a few weeks also gives us concern about surface water. Unforeseen and unpredicted weather events during those few weeks could increase risk to our efforts to protect water quality for the shellfish farmers downstream.

These conditions, taken as a whole, are so arbitrary and prescriptive as to make it more – not less – difficult for us to protect ground and surface water. It is unlikely anyone will be able to comply for the above reasons.

18. **S4.K:** Table 3 uses pounds per acre section, but S4.K.2 uses parts per million. Please correct this for consistency.

19. **S4.K.3 C.:** There is no S4.B.10. We are not sure what condition you intended, but this is an error. Please correct, delete, or clarify.
20. **S4.K.4.e.:** The term “engineering report” should be changed to something like “a nutrient management report developed by relevant experts such as Conservation Districts, NRCS staff, university staff, or Certified Crop Advisors or farmers with nutrient management training certification.”
21. **Page 27, S4.N:** The second paragraph states that “no application of manure, litter, process wastewater and other sources of nutrients...” can be made to buffers and setbacks and conduits from all waters of the state. Please clarify this whole section. As it reads, **no nutrients** may be applied with 100 feet of waters or within 35 feet if a vegetative buffer is in place. It is also our understanding that the alternatives to the 100/35 foot restriction must be overtly stated in this permit (even though EPA does not do that, and Oregon and Idaho permits use language similar to S4.N.2).
22. **Page 27, S4.N 2.:** We believe the current EPA language is adequate. This language was and is approved by EPA. However, if “alternative practices” must be overtly listed in the permit, here is a list of alternatives that should be included in this alternative practices section. These practices will achieve the goal of providing more water quality protection than simply a 100-foot no-application setback:
- a. Berms, dikes, raised road beds or other physical barriers (temporary, seasonal or permanent) used and maintained so that applications of nutrients cannot run (uphill) into waters of the state.
 - b. Precision placement technologies - Placement of manure is done via precision methods such as shanking, injecting, drop hose, splash plate, etc., at a rate and time to prevent migration of nutrient to waters of state. Setbacks of 1-2 meters when low or no rain or irrigation risk and zero application set back from barriers/berms are used to minimize off field flow risk. (See Dr. Anderson’s paper at <http://wastatedairy.com/wp-content/uploads/2016/07/Andersen-Manure-Applicaiton-Setbacks-Science-Assessment.pdf>.)
 - c. Reduced setbacks when mechanical incorporation of manure within 24 hours and or before risk of significant rain event occurs. (See above paper by Anderson.)
 - d. No, or very small, buffers (1-6 feet) when seasonal ditches are dry and are not expected to flow for weeks or months. Performance standard is and should be to not get manure or fertilizer in ditches. (See <http://www.wadairyplan.org/MSA>.)
 - e. We support and encourage allowing the practice recommendations in the Application Risk Management (ARM) program. Farmers, especially in northwest

Washington are already using this system, which has established guidelines for setbacks, timing, weather prediction information, variable width application setbacks, and application risk management practices. (See <http://whatcomcd.org/manure-application-setback.>)

This paper is very instructive on bacterial reduction from small vegetative zones: <http://www.tbnep.org/reports-publications/phase-ii-final-report-2006-468.pdf>.

- f. Setbacks and no-application zones are influenced by risk from in-field to off-field flow. Reductions in flow can be reduced by in-field practices and soil treatments such as pre-disking before application, no-till systems, proper use of subsoiling, contour tillage and planting (NRCS Code 330), and field shaping. All show water quality protection benefits such as reducing field flow, reducing concentrated flow, and promoting infiltration. These practices are discussed in this EPA guide for permit writers: https://www3.epa.gov/npdes/pubs/cafo_permitmanual_appendixk.pdf.
- g. Smaller setbacks are supported by science when applications are made when rainfall not predicted within 48-72 hours.

Our review of these papers indicates no reason for larger filters strips and setbacks if the practices outlined above are used. Additionally, in northwest Washington, the ARM program seems very prudent and supported by science outlined in this paper by Dr. Emberson:

<https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbX3YWRhaXJ5cGxhbXneDo2MjY1NGZjNjIwZTEzZTJk>.

This paper and other studies highlight that applications should not occur immediately after or preceding significant rain events that creates risk of off-field flow. (This conclusion is consistent with current requirements under 90.64). But combinations of barriers, infield soil management, slope, season, edge of field treatments like variable width vegetative buffer if used with prudent seasonal application practices all help reduce or eliminate risk to surface water. We need these tools allowed, overtly and specifically referenced in the permit or generally recognized as Idaho has done.

- 23. **Page 28, S4.O:** The sixth paragraph has an error. "...as required by permit conditions S6.A." should be changed to "...condition S6.C."
- 24. **Page 33 S5.B, Table 6:** Tests for nitrate in lagoon/liquid manure is useless, since it is largely not present. See comments by Dr. Joe Harrison from WSU. We ask that you consider his thoughts and expertise on this area.
- 25. **Page 34, S5.C, tables:** Tests should be for *soil organic matter* (O.M.), **not** "organic nitrogen as N." See also comments by Dr. Harrison on correct soil testing protocols.

26. **Page 36, S6.C, 3.:** Please change to address of recipient entity. Parcel number is not used by most people. Why is there a need to report acreage data?
27. **Page 36, S6.D:** We are extremely concerned that dairy farmers may get numerous public records requests. We strongly object to the idea that farmers would have to provide documents pursuant to a public records request. The burden of fulfilling a public records request should not reside with the farmer but instead with the government agency. The permit language needs to be changed to ensure that agencies handle those requests and not farmers.

The language in the draft state permit regarding farmer disclosure of information seems to conflict with RCW 42.56.610.

RCW 42.56.610

Certain information from dairies and feedlots limited—Rules.

The following information in plans, records, and reports obtained by state and local agencies from dairies, animal feeding operations, and concentrated animal feeding operations, **not required to apply for a national pollutant discharge elimination system permit** is disclosable only in ranges that provide meaningful information to the public while ensuring confidentiality of business information regarding: (1) Number of animals; (2) volume of livestock nutrients generated; (3) number of acres covered by the plan or used for land application of livestock nutrients; (4) livestock nutrients transferred to other persons; and (5) crop yields. The department of agriculture shall adopt rules to implement this section in consultation with affected state and local agencies. (Bold emphasis added.)

Finally, has the language on this topic in the draft permit gone farther than federal law allows with regard to the combined permit disclosure requirements?

28. **Page 37, S7.B.:** We have questions if some of this information can be determined without draining, cleaning, and boring into the bottom of lagoons. Have you consulted with professional engineers to see if this is even possible? We also have concerns about the availability of qualified engineers to do this work across the state within two years. Conservation districts report that they do *not* have staff available to perform this work. (Our concerns about costs and number of lagoons per farm were covered in the EIA section).

We have a significant number of farmers who have installed lagoons with the assistance of NRCS. Please allow farmers to use NRCS documentation to show lagoon design and construction criteria instead of a new engineering report. Lagoon evaluation has been done, and if more is needed, then there are alternatives to those outlined in this permit (for example, see the Oregon 2016 permit).

29. **Page 39, S7.D:** These field budget conditions will be a mess. The EPA permit as well as WSDA/NRCS planning tools all suggest or require nutrient budgeting. We agree this is an important practice. But requiring field-by-field budgets by March 1 is unworkable. We suggest changing the budgeting process to one in which farmers use and retain field budgets, as is already required in dairy nutrient management plans and in WSDA and NRCS guidance. We think those budgets are most relevant and must be available for inspections by WSDA under RCW 90.64 and any inspections needed for permit compliance by WSDA. **Remove the March date and amend the language** to be similar to the EPA or Idaho permit that says nutrient budgeting must be done to show planned applications and planting, as well as any amendments to budgeting as the season progresses.

General Concerns

Dairy farming in Washington state, as across our country, is a family matter. Many of the 417 dairy families left in our state have farmed the land and milked cows for generations. This draft permit, if applied to every farm, threatens the legacy of those farms and greatly diminishes the chances of passing on that legacy to future generations.

Dairy farmers are the only commodity in agriculture that is already regulated for many of the same parameters included in these permits. The Dairy Nutrient Management Program has been a tremendous success in improving and protecting water quality. (See WSDA report at http://app.leg.wa.gov/ReportsToTheLegislature/Home/GetPDF?fileName=533-DNMPReportToLegJune2016_e9a85fda-7303-4899-a2fb-c30aea1728df.pdf.)

The successful progress since 1998 and the pride dairy farmers have for protecting surface water and groundwater leads to the obvious question of *why must there be more regulation?*

If these permits are applied unilaterally to all farms over 200 cows, there are unmistakable consequences. Some of these consequences are listed below (in addition to lost jobs, lost economic income, lost taxes).

Risk of Conversion of Farmland

When a farm stops, the land is at risk of conversion to other land uses. In Washington, American Farmland Trust released a paper documenting this risk as real and measurable (<http://agr.wa.gov/fof/docs/landstats.pdf>). Puget Sound lands are especially susceptible to conversion, and this draft permit will especially hit hard the typical 200-1000 cow farms in that wetter, urbanizing ecosystem. RCW 90.48.450 speaks to this point – that your agency must balance actions that may result in conversion of farm land to non-farm uses.

Farmland Conversion and Water Quality?

The task of non-point source control becomes vastly more complex as rural lands are converted to more intensive or urban uses. The Clean Samish Initiative, for example, has

been an instructive process showing how difficult it is to improve water quality in a basin with multiple different sources of fecal contaminates. There are 4-5 dairy farms left in the Samish. It is vastly easier to visit those farms to ensure they are protecting the water than it is to identify and visit several thousand septic tank owners or several hundred non-commercial livestock owners and help those folks to adopt BMPs. Losing dairy farms will not help water quality.

Loss of Wildlife Habitat

Washington state is the winter host for the largest population of Trumpeter Swans in the US. The recovery of these birds is a tremendous success story. (See <http://www.blm.gov/style/medialib/blm/wy/wildlife/animal-assessmnts.Par.56489.File.dat/TrumpeterSwan.pdf> or [http://www.trumpeterswansociety.org/docs/WI2Trumpeter Swans.pdf](http://www.trumpeterswansociety.org/docs/WI2Trumpeter_Swans.pdf).)

The dairy farms in western Washington are an essential piece of winter habitat for Trumpeters. Dairy farms can provide up to 100% of the late winter habitat in surveys by Washington Fish and Wildlife and the Trumpeter Swan society (according to Martha Jordan, Washington Swan Working Group). The key parts of the winter range of this bird is the very land that Puget Sound and southwest Washington dairy farms occupy. (See http://www.birdweb.org/birdweb/bird/trumpeter_swan#.)

Conversion to housing obviously has and will impact the winter habitat of these birds and other waterfowl. But we also see effects of the conversion of dairy farms in Whatcom county to berry fields (pers. comm. Martha Jordan, WSWG). Loss of dairy farms and their grass and corn fields has and will cause negative effects for this species.

Cost versus Benefit

Washington's dairy farmers have a tremendous sense of pride in protecting the resources they hold. Dairy farmers and our association worked with the Legislature in 1997 and 1998 to develop the Dairy Nutrient Management Act. We have worked with Ecology and WSDA since then to refine and make additional changes to that act to increase the requirements on our dairy farmers for protecting surface and ground water.

Dairy farmers have achieved much under that program. The sense of stewardship, the work and investment in conservation, the time, education, and determination needed to run a farm, raise crops, employ people, care for cows, balance the ever increasing demands of customers, agencies, and society at large is threatening to overwhelm our farmers. Dairy farmers have been willing to learn, listen, and adapt our farms to address recognized concerns. This draft permit begs a question as to the larger cost versus benefit.

Dairy farmers have done as much conservation as any non-point sector. No other non-point rural source is being asked to farm under the guidance, rules, inspections and enforcement of Ecology, the Department of Agriculture, and the EPA. There have been thousands of inspections on dairy farms over the past 18 years, and the results have been tremendous.

See http://app.leg.wa.gov/ReportsToTheLegislature/Home/GetPDF?fileName=533-DNMPReportToLegJune2016_e9a85fda-7303-4899-a2fb-c30aea1728df.pdf.

Threat to Farm Succession

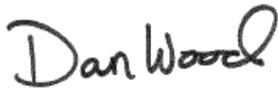
Because dairy farming is a family affair, succession of a farm largely depends on the next generation choosing to hear the calling to grow food for the other 98% of Americans who no longer farm. Our children have a myriad of choices, and the terms of this permit make the pathway to dairy farming look mighty bleak. How do we convince our children to stay in farming?

Ultimately this is a question of who and where will we feed our citizens. The “truck farms” that were common in the mid-1900s in Fife, Kent, and Sumner are now mostly all gone. We fear the same fate will befall Washington dairy farms twenty years from now – to the detriment of the public.

Conclusion

These drafts of the state and combined federal/state permits need substantial revisions. The current proposal is not even an option for farms that may need or want a permit due to actual discharges or because of litigation concerns.

Sincerely,



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