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**To:** [Jennings, Jonathan \(ECY\)](#)  
**Cc:** [Rides at the door, Roylene - NRCS, Spokane, WA](#); [Habets, Bonda - NRCS, Spokane, WA](#)  
**Subject:** USDA - Natural Resources Conservation Service Comments to the Preliminary Draft CAFO Permit  
**Date:** Friday, October 02, 2015 10:54:51 AM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.gif](#)  
[image004.gif](#)  
[STC Transmittal Leter - Final WA CAFO Permit - with Comments.pdf](#)

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Hi John,

NRCS is providing our comments to the Preliminary Draft CAFO permit. We hope they are helpful as the State refines the proposed permit.

It was good meeting you during the EPA Region 10 Annual meeting.

Best regards,

Larry

LAWRENCE A. JOHNSON, P.E.  
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October 2, 2015

Washington State Department of Ecology  
PO Box 47696  
Olympia, WA 98504-7696

The Natural Resources Conservation Service (NRCS) is pleased to provide the attached comments to the Preliminary Draft CAFO permit review that we have conducted.

The State is applauded for the effort to tackle such a challenging and complex permit process. In particular it has the potential to shut down the small dairy operator if the permit is not developed and managed in a manner that serves to protect waters of the State while balancing the negative impacts to the small dairy farmer. It is our hope that the permit provisions are not a reaction to the Cow Palace Lawsuit. NRCS has consulted with our Office of General Counsel (OGC) and they have determined that the court case is "Non-precedent setting". As such NRCS will not be revising our practice standards to mirror the out of court settlement that was agreed to by the litigants and the plaintiffs of the recent court case. Our approach to assisting the Dairy community's technical assistance needs will be "Business as usual."

The small dairy operator is one of our primary customers. NRCS has worked with many small dairies across the Washington State to help with the implementation of NRCS waste management practices. We have worked collaboratively with the Washington State Department of Ecology and the Washington State Department of Agriculture to establish standards are protective of waters of the State. It is our wish to continue this collaborative effort.

If you have any question please contact Larry Johnson, State Conservation Engineer at 509 323-2955 or Bonda Habets, State Resource Conservationist at 509 323-2961.

Sincerely,

A handwritten signature in black ink, appearing to read "Roylene Ride-at-the-Door", is positioned above the typed name.

Roylene Ride-at-the-Door  
State Conservationist

cc: Larry Johnson, P.E., NRCS, State Conservation Engineer  
Bonda Habets, NRCS, State Resource Conservationist

UNITED STATES DEPARTMENT OF AGRICULTURE  
NATURAL RESOURCES CONSERVATION SERVICE

Spokane, Washington  
October 2, 2015

**WA DOE PRELIMINARY DRAFT CAFO PERMIT REVIEW COMMENTS**

Summary: Numerous Washington State NRCS staff reviewed the Preliminary Draft Concentrated Animal Feeding Operation General Permit issued by the Washington State Department of Ecology. The following comments and Appendix A include concerns, suggestions, and recommendations for improvement of the permit.

Purpose of Review: The review was made to determine compliance with NRCS criteria and sound comprehensive nutrient management planning (CNMP) and associated NRCS practices regarding pollution prevention via nutrient management, waste storage and containment of systems associated with Animal Feeding Operations (AFO) and Concentrated Animal Feeding Operations (CAFO). Numerous expert NRCS staff examined the permit and provided comments as well as specific notations and comments to the permit (Appendix A) from which the review is based.

Scope of Review: The following materials were reviewed:

1. Preliminary Draft Concentrated Animal Feeding Operation (CAFO) General Permit issued by the Washington State Department of Ecology

Basis for Review: The following reference materials were used in conducting this review:

1. Glanville, T.D., J.L. Baker, S.W. Melvin, and M.M. Agua. 2001. Measurement of Leakage from Earthen Manure Structures in Iowa. Transactions of the American Society of Agricultural and Biological Engineers. St. Joseph, MI.
2. U. S. Department of Agriculture. Natural Resources Conservation Service. (2015). *National engineering handbook*. Washington, DC: Author. September 17, 2015. < <http://directives.sc.egov.usda.gov/> >.
3. U. S. Department of Agriculture. Natural Resources Conservation Service. (2015). *National engineering manual*. Washington, DC: Author. September 17, 2015. < <http://directives.sc.egov.usda.gov/> >.
4. U.S. Department of Agriculture. Natural Resources Conservation Service (2015). *Electronic Field Office Technical Guide*. Spokane, WA: Author. September 17, 2015 <[http://efotg.sc.egov.usda.gov/efotg\\_locator.aspx?map=>](http://efotg.sc.egov.usda.gov/efotg_locator.aspx?map=>)>.
5. Washington State Administrative Code. 2015. September 17, 2015 <<http://apps.leg.wa.gov/wac/>>
6. Code of Federal Regulations. [http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40cfr122\\_main\\_02.tpl](http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40cfr122_main_02.tpl)

## Review Comments:

### **General**

- The Department of Ecology has not specified what will be acceptable under the permit provisions regarding levels of containment (i.e.: clay lined, membrane lined) that will be acceptable. Will the Department of Ecology require a qualitative procedure assessing each waste storage pond regarding discharge? If so what procedures will be utilized and where would the funding come from to support these assessments? If the Department of Ecology will not be initiating a qualitative assessment requirement, then what standards are acceptable? Perhaps NRCS practice standards? It is imperative that the measures for being within the permit guidelines be clear, defensible and repeatable.
- Using the definition and pertinent articles of this draft permit, determination of an operation as being a CAFO is problematic (e.g. an area where livestock is confined for over 45 days during a 12 month period may be seeded to grow a crop, and if the crop is sustained over a portion of the area each year, the operation is not a CAFO; the EPA definition for CAFO in CFR 40 122.23 differs significantly from that given in this draft permit). As a result, updating definitions for all critical terms, such that they are complete and have clear, measurable criteria, is important. Without fortified definitions, NRCS will need for the proper regulatory agency to make such determination(s) in a timely fashion in order for us to carry out conservation practices associated with these operations.
- AKART, as presented in this draft permit, is not specific and cannot be measured. Therefore, it does little to help CAFO owners/operators and technical personnel complete the mission of complying with regulations pertinent to CAFOs.
- The draft states that a CAFO permit will remain active even if the CAFO is out of business until the fields that had manure applied to them revert back to what was naturally occurring or are scraped off and disposed of in a manner that does not threaten WQ. Who determines what the benchmark natural condition nutrient levels are? Also how is the determination made as to whether nutrients came from facility manure, commercial fertilizer, wildlife such as waterfowl or ungulates, or atmospheric deposition?
- The permit discusses manure impacted soils and the need to dispose of them properly when CAFOs are decommissioned. This requirement may be onerous and prohibitively expensive since these volumes and their respective depths underground may be extensive after a waste storage pond has been in operation for years. Even the process of determining appropriate natural background nutrient levels in soils is not trivial.
- To help CAFO owners/operators and technical personnel understand what constitutes a cause or contribution to a violation, with respect to discharges authorized by this permit, an easy-to-understand synopsis of the standards is needed.
- The permit requires engineering plans and specifications and as-built records. Existing AFOs/CAFOs do not always have all pertinent information regarding how construction was carried out, and acquisition of such information can lead to the development of uncertain data and be both difficult and costly (e.g. determination of existence and/or

effectiveness of an earthen (clay) lagoon liner several years following the construction and utilization of the lagoon).

- NRCS recommends developing/including definitions of critical terms, with measurable limits, or reference thereto (e.g. CAFO, agricultural stormwater, manure, failure, leaking, containment, BMP, process waste water, precipitation related discharge, designed structure, bare field, water holding capacity, hazardous substance, incorporated into the soils, solid manure storage, top of the bank, optimal pollutant reduction performance, objective risk assessment of the field, grazing areas that are part of the CAFO, the public, etc.). For example, where does solid manure storage begin and end with respect to stockpiling of manure in dry stacks and manure adjacent to such piles stored in locations where animals defecate? Furthermore, illustrations depicting pertinent concepts may be in order to provide clarity and avoid errors (e.g. illustrate that which represents top of the bank and inner edge with respect to field runoff prevention practices).
- There is room, in numerous parts of the permit, to include alternative methods to accomplish the goals of controlling potential pollution that are either not discussed or inadequately defined (e.g. the permit uses only lagoons as the primary storage vehicle on CAFOs rather than defining waste storage facilities as being such structures as lined lagoons, steel and concrete tanks, and other qualified vessels that do not leak beyond defined limits).
- Though some flexibility can be designed and built into CAFO operations from the outset, there is still need for significant changes in infrastructure, operation, and maintenance over the life of any given system. How do owners/operators/designers of CAFOs know where the line is drawn with respect to the need for applying for a new/revised permit when changes are deemed necessary?
- Due to the complexity of CAFOs and associated sub-parts, such as comprehensive nutrient management, NRCS recommends that complicated sub-parts of the permit be broken out from the main body of the permit. These sub-parts can be either referenced to fully developed standards and practices or placed in appendices where CAFO owners/operators and technical experts can readily obtain the pertinent information for planning, design, operation and management.
- For CAFO owners/operators and designers to select appropriate BMPs, clarification regarding how BMPs must meet or exceed pertinent measurable permit thresholds ought to be emphasized.
- Without reference(s), it is unclear how CAFO owners/operators and technical personnel can learn about requirements included in TMDLs.
- Consequences of noncompliance by a CAFO of their permit are not elaborated adequately for CAFO owners/operators to understand the potential costs and benefits of the actions/non-actions they choose to exercise.
- The existing CAFOs in Washington State not having double geomembrane liners with leak detection systems and not currently permitted will need to learn what changes are required to obtain and maintain a permit for their operations. If replacing their existing waste storage lagoons with double geomembrane liners is required of them, without adequate time and financial assistance, many may be unable to continue their businesses.

- Numerous permit timelines are unrealistic.
- NRCS recommends having the permit be checked by expert editorial staff to correct redaction errors (e.g. S4.C.11.a, “TSUM-200”; G16, “mosquito control general permit”; S4.B.2.c, “MPP”; on page 21 there is a mistaken reference to S4.C.14.1 and b which does not exist, Appendix XX could not be found, on page 23 there is a mistaken reference to S5.E.3 which does not exist, incomplete references, etc.).
- There is room for overall improvement of the permit presentation. In particular, references within the permit body ought to follow a recognized style, and a separate section detailing all references would serve the reader to more readily understand and carry out permit requirements.
- Specificity relative to necessary quantities needed to understand minimum permit requirements is vital (e.g. S.5.B.2.a regarding manure testing, the term “several” is not specific; S7.E mentions “special condition,” and there is no elaboration as to what the special condition entails).
- Either definition or reference to Sanitary Control Area for Group-A public drinking water wells is needed to fulfill permit requirements.
- Are requirements established regarding who is qualified to design new/modify existing CAFO operations for the purpose of permits (licensed engineers)?
- CAFO owners/operators will likely want to know the costs associated with the permit (immediate and annual).
- In numerous locations found in the permit, references are made to WEB ADDRESS. For NRCS to comment in depth regarding such issues as the Notice of Intent, Notice of Termination, Annual Report ... etc., we recommend specifying/providing these web addresses (currently not given in the draft permit).
- Reference to Dam Safety requirements ought to be included for waste storage structures that must meet these separate requirements.
- NRCS recommends rewriting parts of the permit that are confusing and incoherent.

## **Nutrient Management**

- Many of the items in section S4.C11.c that refer to Fall Soil Nitrate testing run counter to the Extension Service researched guidance in their publication EM8832-E, Post-harvest Soil Nitrate Testing for Manured Cropping Systems West of the Cascades, which is accepted as the procedure for this testing and interpretation of the testing results:
  - Fall soil nitrate testing is generally not taken down to 3 feet in western WA. WSU Extension researchers found that a 2 foot level gave adequate monitoring, and that in many cases sampling to a 1 foot level was adequate.
  - It appears that section 11 is using Fall Soil Nitrate Testing results in a different manner than is recommended in EM8832-E, Post-harvest Soil Nitrate Testing for Manured Cropping Systems West of the Cascades. It appears to be using the fall soil nitrate test result numbers as a type of “pass/fail” measurement, and also not restricting the test’s use to west of the Cascades and only for corn silage or grass hay/silage crops, as is specified in the Bulletin on page 3, Limitations for Use.

Additionally, the draft CAFO permit has one combined table for fall soil nitrate values, while the Bulletin has separate tables (and values) for corn silage and grass hay/silage crops. Also, the values they use in their groups (and their groupings), as well as the resultant recommendations, are different than those in the Bulletin. Has there been a revision that I am unaware of?

- Fall soil nitrate tests are a point in time. Research in Whatcom County has shown that nitrate levels in the same area of the same field can fluctuate widely from week to week, depending on weather conditions. Because of this, guidance is that the trends in fall soil nitrate tests on a field are more important than any one test. If high fall soil nitrate tests occur, will the producer have a first option to retake the nitrate tests to see if any high tests were a fluke?
  - Modest Action Options – While good recommendations might be to reduce the amount of nutrients on the field, manure should not be identified as automatically needing to be reduced. Fertilizer may also have been applied to the field, and so the commercial fertilizer could be reduced to correct the balance, or any other nutrient source that had been applied.
  - Aggressive Action Options – why would an engineering report be required? Since this is a nutrient balance issue, wouldn't a consultant be a better choice for reviewing cropping and weather conditions in the field for the year? If all nutrient applications are required to be stopped, for how long a period of time? How will crop needs be met? Why not just reduce nutrient applications until the fall soil nitrate tests show a better nutrient balance in the field?
  - Another option that should be added is rather than reduce nutrient inputs, is it possible to switch to high nutrient use crops, or working to improve yields on the existing crop? (i.e. more intensive management, selection of a different cultivar, etc.)
- Buffer Setbacks: in the proposed draft permit, only 2 options are given for field application setback distances - Why was the option in the EPA 2012 Compiled CAFO final rule section (c)(5)(ii) not also given as an option? “((ii) Alternative practices compliance alternative. As a compliance alternative, the CAFO may demonstrate that a setback or buffer is not necessary because implementation of alternative conservation practices or field-specific conditions will provide pollutant reductions equivalent or better than the reductions that would be achieved by the 100-foot setback.)”
  - Are the parameters set such that we can know when contaminants have been applied at approved rates and under approved methods of land treatment such that those contaminants will not cause pollution of groundwater below the root zone (WAC 173-200-010 3(a)) and (WAC 173-200-010 3(b))?
  - The stipulation relative to field application of manure being carried out no less than 3 days prior to a storm event measuring ½ inch or greater is dependent on the availability and potential inconsistencies of such weather information (the permit ought to include the official, readily-available source(s) of weather forecasts). Furthermore, stipulation of the time relevant to the storm event ought to be stipulated to avoid confusion between a one-hour storm event; i.e.: a twelve-day storm event, each of which ½ inch could fall as

precipitation. Lastly, it is unclear if an irrigation of ½ inches is synonymous to ½ inches of precipitation.

- Equipment, such as manure spreaders, are commonly used, and their use is not time dependent. Thus, calibration per unit of time is not applicable. Are there exceptions to this time rule?
- For irrigation water management, NRCS recommends placing emphasis on the importance of monitoring soil moisture contents and soil nutrient contents, before and after irrigation, (with or without liquid manure) to prevent percolation of water and movement of nutrients below the 2 ft. depth threshold.

### **Waste Storage and Containment**

- Without clear stipulation of maximum allowable leakage rates of pertinent potential contaminants, the permit exemption for lagoons having double geomembrane liners, leak detection and recovery systems is arbitrary. Literature indicates that synthetic liner systems leak due to the imperfections in the geomembrane materials, bonding of adjacent geomembrane sheets, impairment caused during installation, and post-construction damage. The premise that all double lined systems are more protective of Waters of the State than other methods may be flawed.
- Required backup plans to arrest/contain/recover discharge from a storage failure are unrealistic and lack specificity.
- Prevention of failure cannot be made foolproof. NRCS recommends elaborating measurable goals that CAFOs must meet or exceed with respect to all permit requirements, including emergency requirements.
- The requirement for CAFOs to have backup storage facilities of significant volume. This would require immediate action for minor leaks that are discovered during operations since large volumes of manure may have to be transferred out of any leaking lagoon in short order. NRCS deems this to be onerous and unnecessary since a properly designed, constructed, operated, and maintained CAFO will assure compliance with lawful, measurable thresholds while providing adequate redundancy to avoid serious discharges related to many natural disasters.
- NRCS recommends using sloped rods (for which the slope is known) with markings indicating critical depths that the CAFO operators must heed in place of the use of vertical depth gauges. A reasonable backup for such rods consists of a table with values indicating critical depths below the top of embankment for which only a measuring tape stretched out over the slope from an established point in the embankment to the manure water level is required to learn the lagoon's status regarding available storage capacity .
- Waste containment facilitates sometimes require modifications during construction due to unanticipated site conditions. It is unclear how designers would go about implementing important changes and meet requirements of the permit in short order when this occurs.
- There are cases in which stopping the remaining manure in a lagoon from leaking may be unachievable, yet the leak may have been detected. NRCS recommends establishing emergency procedures that outline pertinent, quantifiable allowances such that viable systems can be designed, constructed, and operated that meet permit requirements.

## Appendix A - NRCS Staff Notations and Comments

### Section 2

- S2.A - The draft permit notes that Ecology has determined that lagoons without double synthetic liners leak. Scientific data needs to be included to back up the statement made that “Ecology has determined that if the CAFO has a lagoon that does not have a double geomembrane liner with a leak detection system between the liner layers that it is discharging to ground water.” Designations between different types of liners classifications in relation to discharging to ground water without other site specific factors needs to have clear and identified scientific data. There is not enough scientific evidence to support lagoons are the primary or significant cause of nitrate source to groundwater compared to surface run off or field application areas. Other possible solutions would could include; being dependent on facility size and within those designations of size include all those that have stored liquid wastes, or remove the reference to lagoons entirely.
- S2.A, states that all CAFOs with existing inadequate pond liners are going to need to apply for permits within 90 days. From our experience, due to inherent design complexities, this window of time is too short. Similarly, revisiting the time allowed for revisions of a MPPPs is also too short. In contrast, the timeline (180 day window) required for review of engineering plans and specifications prior to construction is too long.
- S2.A, Leak detection for lagoon liners that do not have double geomembranes and leak detection systems in place is an onerous task and inexact science. The only relatively feasible method developed entails taking micro-measurements of the lagoon liquid surface elevation (“transducers that can accurately measure short-term liquid-level fluctuations caused by leakage”) during short windows of no wind, high relative humidity, and no inputs such as from precipitation or drainage from the CAFO operations (Glanville et. al. 2001). Not only may it be very infrequent to unite all the required conditions to get reliable readings for this method at many sites, the method also has potential shortcomings with regards to accuracy especially for lagoons having unknown and variable three dimensional geometries.
- S2.C.2 – There does not seem to be a clear timeline delineated for an applicant if any of the conditions listed under C.2. exist. A producer should be able to estimate how much time the permit process may take in order to begin the re-application period without having operations suspended due to a lapse in a permit issuance. Identified timelines could include; how long could a public hearing process take, how long and under what circumstances would public comments cause a delay, and how long to acquire additional Site-specific information?
- S2.C 3.a. –How long would the producer be given to address the issues? Things to consider: if structural practices are needed to be upgraded or newly installed this time frame is going to be much greater logistically and financially than for example improving a management issue.
- S2.F – Please include permit termination requirements and the reference to the WAC.
- S2.F 1.a. - Who determines what the benchmark natural condition nutrient levels are and is there a standard procedure identified? This also discusses manure impacted soils and the

need to dispose of them properly when CAFOs are decommissioned. This requirement may be onerous and prohibitively expensive since these volumes and their respective depths underground may be extensive after a storage pond has been in operation for years.

- S2.F 2 – The timeframes identified for NOT effective date are contradictory. Suggestion to change to: the NOT is effective on the 31<sup>st</sup> day from submission, unless otherwise contacted.

### **Section 3**

- S3.B.1 – Recommended to identify the status of the TMDL implementation will be included in addition to the annual report or waive the annual report and only have an annual report (referenced in S7.D) requirement if TMDLs affected permittees.
- S3.C – Wastewater control facility could be better identified and defined. Suggestion for re-wording: Waste storage and handling facility used to address the components and activities associated with the production facility, feedlot, manure and wastewater storage and treatment structures, and any areas or mechanisms used to facilitate transfer of manure and waste water.
- S3.C - 180 days (6 months) is a long time to have to have engineering plans in for review prior to approval. Are there allowances for emergency repairs? How are design modifications that may occur during construction dealt with?

### **Section 4**

- S4.B 1. –Additional guidance or similar threshold established for how much change in operation, management or infrastructure will require the MPPP be updated would be beneficial to avoid excessive revisions and unnecessary workload increases for these associated inspections. For example: change in structural designs or construction, and/or a 25% increase or larger in herd size would require the MPPP to be modified.
- S4.B 2. – Do the recommended engineering calculations, designs, and BMPs included in the plan and the MPPP have to be developed by a professional engineer, CCA, Certified Conservation District, NRCS employee or other specific certification? Are there also like requirements for existing structures? Also is an MPP the same as an MPPP (possible typo)?
- S4.B 2.f. – The term ‘designed structure’ could be misleading or confusing to some. Suggested: Waste storage and handling facility used to address the components and activities associated with the production facility, feedlot, manure and wastewater storage and treatment structures, and any areas or mechanisms used to facilitate transfer of manure and waste water.
- S4. B3 – If the MPPP is deemed ineffective will the person who found it to be ineffective tell the permittee how it must be changed/modified to meet the needs of the site or will the permittee come up with a solution on their own, or does the permittee have to hire an outside consultant? While 7 days may be reasonable to correct a discharge, it probably isn’t enough time to revise the entire MPPP, especially if the MPPP is revised by a technical third party, who may not be able to schedule the work that quickly. Additionally, evaluation to determine the best solution(s) to the causes of the discharges may take longer than 7 days to determine. Requiring the 7 day limit may not return the most environmentally advantageous

long-term solution(s). Similarly, starting construction of BMP's within 10 days is probably not feasible for engineering structures, given the need for survey, design, permitting, and securing a contractor. The success of a vegetative practice is also often highly dependent on weather and seasonal considerations that may be 10 months away depending on when the inspection or investigation was done to find deficiencies. A minimum of 30 days for review of the MPPP is more realistic and depending on needed revisions up to or beyond of 180 days may be needed to get engineering designs completed. The financial impact of such large structural practices is also important. Possibly a multiyear phasing process for lagoons that need upgrades, at a minimum more clarification for these different type of manure management practices.

- S4.C 1.a. – What if tile drain locations are not known? Many sites have had drain tile installed at various times over the last 50+ years, many locations will be unknown.
- S4.C 1.b –In circumstances that the infrastructure is older and the engineering plans and certifications are not available? Will an engineering assessment by a PE be required in lieu of designs?
- S4.C 1.b – “static equipment gpm must be measured”. Is there a required method of measurement or requirement of flow meter?
- S4.C.2 – 25Yr, 24Hr additional storage beyond full/designed storage may require a significant oversizing of ponds/facilities on the west side, just to accommodate this storm events run-off control requirements. This sizing seems more applicable to regions with less rainfall events (central and east sides) so the oversizing is not so significant. Has anyone thought about the storage/capacity needs for regions that receive rains in excess of 4-inches or greater in a 25Yr, 24Hr storm and have large roof areas impacting the lagoons? Will/Does this 25Yr, 24Hr capacity requirement apply to the much older facilities in the SW region? Is there flexibility in this requirement? Or do we need to be looking at a different form of measuring/controls? Such as xx inches of precipitation for run-off storage?
- S4.C 3a.2 –Could expand vegetation control to include more information such as; Operation and maintenance plan shall be developed to control vegetation including remove scum and floating debris, control water weeds, blue green algae and dike vegetation to prevent damage and maintain design integrity.
- S4.C 3a.3 – Animal control section only talks about controlling burrowing animals from the lagoon embankment, but it should also mention fencing off the embankment from cows as they can do a lot of damage too.
- S4C3a.5 - It's stated that manure solids must not be allowed to accumulate on the surface of the lagoon. Is this the liquid surface or embankments? This is not a problem in all circumstances unless it gets to a point where it reduces capacity. Solids can be beneficial for sealing of pond. Should clarify what level of solids is acceptable.
- S4.C 3a.5 – Could use better clarification of the statement “Debris, veg and manure solids are not allowed to accumulate on the surface of the lagoon.” This potential could result in

negative effects if applied to all situations. This could generally insinuate increased agitation of the lagoon than they may currently be doing, which will increase volatilization and odors. Also, a thin layer of solids on the surface is a normal part of a system which doesn't include a separator. However, excessive or poorly managed solids (i.e. vegetation is growing on them in the lagoon), should be removed, and the system managed to limit this development.

- S4.C 3a.6.ii – says “until a new lagoon is construction.” It is possible that a producer could install a new tank and not a new lagoon so recommended to say “until a new permitted storage facility is constructed.”
- S4C3a.7 – Note to take into consideration in regards to depth gauge. Many lagoons do not have this in place and installation would require surveying and disturbing existing liners to set an indicator of some kind.
- S4.C 3a.9 –See comments under S2.F 1.a.
- S4.C3d.2 Possible error in statement “If the compost is covered”. Should this say feed rather than compost?
- S4.C 5 – Will there be specific documentation requirements (i.e. engineering designs) that will need to be included for the area where water is diverted to show this area can handle the volume? If so this should be specified.
- S4.C6 –Are there exception that could be included for areas managed with a Prescribed Grazing plan for maintenance of healthy vegetation with specified stubble heights within those areas described. For example flash grazing to control vegetation in riparian areas or exclusions for low water crossings.
- S4.C 8 – “All run-off from stored carcasses must be directed to the lagoon.” Suggested rewording: “All run-off from stored carcasses must be directed to the lagoon, tank or other appropriate containment system.”
- S4.C 11.a. –
  - o The statement, “manure may not be applied within 24 hours of a previous rain event, or longer, if the field does not have water holding capacity,” is confusing and potentially contradictory to other related statement(s).
  - o The phrase “generally from October 15 to TSUM-200” is not appropriate here in this context. Many fields are not frozen, snow covered or saturated during that entire time period, so any period of non-application should be prescribed on a field-by-field basis. This phrase is highly dependent on crop type and site specific climate conditions and should not be included in the permit to cover all of WA State.
  - o What is the definition of “bare fields”? Less than a certain percentage of flat residue cover, standing residue cover or live vegetation cover? Would a no-till field with no live vegetation be considered “bare” as these by definition wouldn't be tilled?

- A few additions and clarifications should be added in regards to statement “Prior to applying manure to a field soil samples must be collected and analyzed for nutrient content as specified in S5.B and S5.C.” Suggested to read: “Prior to any manure application to a field pre-fertilization soil samples must be collected within 60 days of application as specified in S5.C. Manure source must also be sampled for current analysis as specified in S5.B.”
  - What is the definition of “rain event”? A certain minimum amount of precipitation, 0.25 inches?
  - “forecasted rain event” – What are the acceptable sources for forecast of rain events? Is there one source that everyone must use? Forecasts can vary widely between sources. At a minimum indicate local forecast for the field to be applied on.
- S4.C11.c
- Fall soil nitrate testing is generally not taken down to 3 feet in western WA. WSU Extension researchers found that a 2 foot level gave adequate monitoring, and that in many cases sampling to a 1 foot level was adequate.
  - It appears that section 11 is using fall soil nitrate testing results in a different manner than is recommended in EM8832-E, Post-harvest Soil Nitrate Testing for Manured Cropping Systems West of the Cascades (attached). It appears to be using the fall soil nitrate test result numbers as a type of “pass/fail” measurement, and also not restricting the test’s use to west of the Cascades and only for corn silage or grass hay/silage crops, as is specified in the Bulletin on page 3, Limitations for Use. Additionally, the draft CAFO permit has one combined table for fall soil nitrate values, while the Bulletin has separate tables (and values) for corn silage and grass hay/silage crops. Also, the values they use in their groups (and their groupings), as well as the resultant recommendations, are different than those in the Bulletin. Has there been a revision that I am unaware of?
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  - Modest Action Options – While a good recommendation might be to reduce the amount of nutrients on the field, manure should not be identified as automatically needing to be reduced. Fertilizer may also have been applied to the field, and so the commercial fertilizer could be reduced to correct the balance, or any other nutrient source that had been applied.
  - Aggressive Action Options – why would an engineering report be required? Since this is a nutrient balance issue, wouldn’t a consultant be a better choice for reviewing cropping and weather conditions in the field for the year? If all nutrient applications are required to

be stopped, for how long a period of time? How will crop needs be met? Why not just reduce nutrient applications until the fall soil nitrate tests show a better nutrient balance in the field?

- Another option that should be added is rather than reduce nutrient inputs, is it possible to improve yields on the field, either by switching crops, or working to improve yields on the existing crop? (i.e. more intensive management, selection of a different cultivar, etc.)
- How does this affect/impact manure applications to crops (orchards) with significantly deeper rooting depths than 3 feet?
- S4.C11.d. Possible error, this section on Emergency Application references S4.C12.b – Irrigation Water Management? Possibly solution would be to use S4.C11.a?
- S4.C.12.b. – Why is Irrigation Water Management being restricted to the top 2 feet of soil water holding capacity? Why is it not connected to the top 2/3<sup>rd</sup> of the crops rooting depths instead or as part of the irrigation water management plan that will also take into site specific conditions into consideration?
- S4.C 13 – References buffer minimums in S4C.14 a. and b.? Should this be 13 a. and b.?

S4.C 13 – Option a. and b. should be better identified as a one or the other to better align with the EPA guidelines. As it currently reads it appears both are required together. Also EPA guidelines permit alternative practices, these could include a combination of conservation practices and should be left available to be developed as part of the MPPP on a site specific basis. See EPA wording below (i) & (ii).

*(i) Vegetated buffer compliance alternative. As a compliance alternative, the CAFO may substitute the 100-foot setback with a 35-foot wide vegetated buffer where applications of manure, litter, or process wastewater are prohibited.*

*(ii) Alternative practices compliance alternative. As a compliance alternative, the CAFO may demonstrate that a setback or buffer is not necessary because implementation of alternative conservation practices or field-specific conditions will provide pollutant reductions equivalent or better than the reductions that would be achieved by the 100-foot setback.*

*([http://water.epa.gov/polwaste/npdes/afo/upload/cafo\\_final\\_rule2008\\_comp.pdf](http://water.epa.gov/polwaste/npdes/afo/upload/cafo_final_rule2008_comp.pdf) p.24)*

- S4.C 13 - If all surface waters or conduits to surface or ground water (define conduit) must be buffered this is going to take a lot of application land out of production – how are facilities going to balance their nutrients if they are relying on land application? Again site specific practices should be allowed to prevent offsite movement of nutrients and not a one size fits all solution of 35 foot vegetative buffer or 100 foot setback. These setback requirements may be excessive under a number of various circumstances. It is unclear if onsite/internal ditch systems or tail water recovery channels will be required to have these buffers as well. This could be impractical for some fields, especially if the internal drainage systems are on 2 or more sides of the fields. Can a variable width buffer system based on soil type, site slope,

climate and science be developed instead of a flat minimum width? Even DNR uses a variable riparian width formula now based off of some science.

- S4.C 13 – buffer must be maintained to provide “optimal pollutant reduction performance” – what does a buffer like that look like?
- S4.C 13 – who performs the “objective risk assessment” of the field to determine the required buffer?
- S4.C 13.a. – define other conduits to surface or ground water
- S4.C 13.a. – how is a 35’ perennial vegetative buffer defined – lots of perennial vegetative choices out there.

## **Section 5**

- S5 – Monitoring – there are many good monitoring templates available and already in use by producers – suggest review of these before creating new ones.
- S5.B – Is this manure sampling technique per University guidance? How often does the manure sampling have to take place? Would be good to cross reference the manure sampling section with the previous sections that discuss frequency.
- S5.B - Reference approved lab when talking about laboratories.
- S5.B.1.e. – typo perhaps as I cannot locate the subsection S5.E.3. Possibly S5.C?
- S5.B.2.a. & b.– “several” is not a quantitative number that can help permittees understand what is expected of them, the number of samples required to be taken should be listed in (a.), nor does it indicate methods of mixing that will be acceptable, or how will this mixing occur. May at a minimum need to reference the guidance document that needs to be followed. Do smaller AFO’s that are being required to fall under this permit order have the methods or means to do this? Will a third party, perhaps CD’s, have the means to assist with this?
- S5.C – How often does the soil sampling have to take place? Would be good to cross reference the soil sampling section with the previous sections that discuss frequency.
- S5.C – Soil sampling shouldn’t be prohibited in the buffer area. It may be managed for crops utilizing other nutrient sources, and soil testing is an important agronomic tool. Suggest to say No samples are required to be collected in buffer areas.
- S5.C. – consider revising the word ‘refusal’ to a ‘restrictive layer’, how is a permittee to continue to sample at 12-inch increments if a restrictive layer is met (i.e. rock)?
- S5.C – In western WA, University guidance generally doesn’t include sampling at the 2-3 foot depth. S6.A. – A common O&M inspection form outlining minimum requirements would assist with continuity across the State’s permits. However, it is essential to allow for site specific O&M to be adjusted on any form used.

## **Section 6**

- S6.B – Record Keeping – there are many good record-keeping templates available and already in use by producers – suggest review of these before creating new ones. Allowing producers to have freedom to use their own record keeping methods as long as all the information is present will allow for producers to continue or make slight adjustments without major initial upset to record keeping operations.
- S6. – A common template or checklist for O&Ms and inspections outlining minimum requirements would assist with continuity across the State’s permits, but allowing the option for the Permittee to develop or continue utilizing a system they are familiar with is essential.

## **Section 7**

- S7 – “the permittee must provide a copy of the MPPP to Ecology within 14 days upon request is redundant to S7.A.3
- S7.C – Is there a general format that this report must follow? Need to specify one way or another.
- S7.C – Now that lagoon reports are a requirement as part of a permit will NRCS be allowed to provide the lagoon evaluations or will we require it to be done by a private PE? Clarity is needed on what certification level is required for this.
- S7.E – What role does WSDA play in this?
- S7.C. – This information has proven to be challenging to acquiring in the events of a sale of an AFO-CAFO do to deaths of long-time ownership where records of the original pond constructions were not available to the new purchasers of the properties. This requirement could prove to be both challenging and costly as engineering evaluations and certifications can be time-consuming and very costly, especially if NRCS does not have the original pond design documents on file, regardless of who designed the systems. As this is a two year timeline does this have any effect on section 1 in getting initial permit coverage?