

Friends of Toppenish Creek

Hello Ecology,

Thank you for reading these five comment letters from the Friends of Toppenish Creek.

Jean Mendoza



Friends of Toppenish Creek

October 24, 2021

Dear WA Dept. of Ecology,

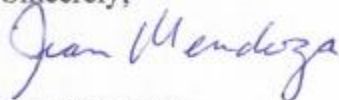
Please consider these comments from the Friends of Toppenish Creek (FOTC) as you prepare a new National Pollutant Discharge Elimination System (NPDES) permit for Concentrated Animal Feeding Operations (CAFOs).

Friends of Toppenish Creek is dedicated to protecting the rights of rural communities and improving oversight of industrial agriculture. FOTC operates under the simple principle that all people deserve clean air, clean water and protection from abuse that results when profit is favored over people. FOTC works through public education, citizen investigations, research, legislation, special events, and direct action.

FOTC participates in good faith, with the hope that our democratic form of government will protect the people of Washington and our environment. Do not consider our comments an endorsement of concentrated animal feeding operations. FOTC believes, and has stated elsewhere, that CAFO farming is not sustainable; that CAFO farming damages the air, water, soil, plants, animals, and people.

Agriculture is just one contributor to global warming and climate change. Agriculture is necessary for human survival. But we can minimize the impact of agriculture on global warming. Strong NPDES permits for CAFOs will help by significantly reducing unhealthy release of nitrogen and phosphorous into the air and waters of Washington State.

Sincerely,



Jean Mendoza

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Friends of Toppenish Creek Comments re WA Ecology’s NPDES General Permits
for Concentrated Animal Feeding Operations

October 24, 2021

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Summary of Environmentalists' Case Before The WA State Court of Appeals

Ecology ignored state and federal law when the agency wrote National Pollutant Discharge Elimination Permits (NPDES) for concentrated animal feeding operations (CAFOs) in 2017. When a coalition of environmental groups appealed the permits, the WA Pollution Control Hearings Board (PCHB) incorrectly approved Ecology's actions.

And so, in November 2020, the environmental groups explained to the WA State Court of Appeals that Ecology:

1. Did not require All Known, Available and Reasonable Technology (AKART) in the permits. For example, the permits do not require synthetic lining of manure lagoons.
2. Did not require actions that bring groundwater and surface water into compliance with WA Water Quality Standards. For example, the permits do not require testing of tile drains that carry water from fields where manure is applied to surface waters.
3. Did not require ground and surface water monitoring. Without measurement, there is no way to know what pollutants enter the waters of the state, whether pollution of the groundwater and surface water is increasing.
4. Permits are issued before CAFOs submit management plans. The public is not allowed to review the plans before permits are issued.
5. Does not address climate change in the permits as required by Washington statutes. CAFOs add large amounts of water pollutants and air emissions to the environment and are major causes of Global Warming. Ecology is required by law to address Global Warming in all their actions and to protect the waters of the state for future generations.

Summary of FOTC opinions regarding the court ruling.

1. Living in harmony with nature is AKART, an available and reasonable technology, the most effective technology for protection of the environment. Many of the problems we now face result from confining too many animals on small acreages and concentrating manure in one place. Spacing smaller dairies across the state would disperse emissions and discharges into quantities that nature could accommodate.
2. Installing synthetic liners for manure lagoons is AKART. It is affordable, especially when balanced against the existential costs of nitrogen leaching to Puget Sound, the rivers, and streams. Extinction of Orcas¹ is too high a price to pay for short term economic benefits.
3. According to federal law CAFOs are point sources. Standard definitions of point sources describe pollution that comes from the end of a pipe. A tile drain is a pipe that discharges to drains and ditches. It is only common sense to test the effluent from tile drains for nitrogen, phosphorous, and pathogens.
4. Problem solving requires sufficient and accurate data. For too long regulators have refused to address water pollution, citing inadequate proof. This must cease. If society insists on

concentrating so many animals in small areas, then we have a duty to measure what happens to pollutants in the manure, to measure pollution in groundwater and surface water.

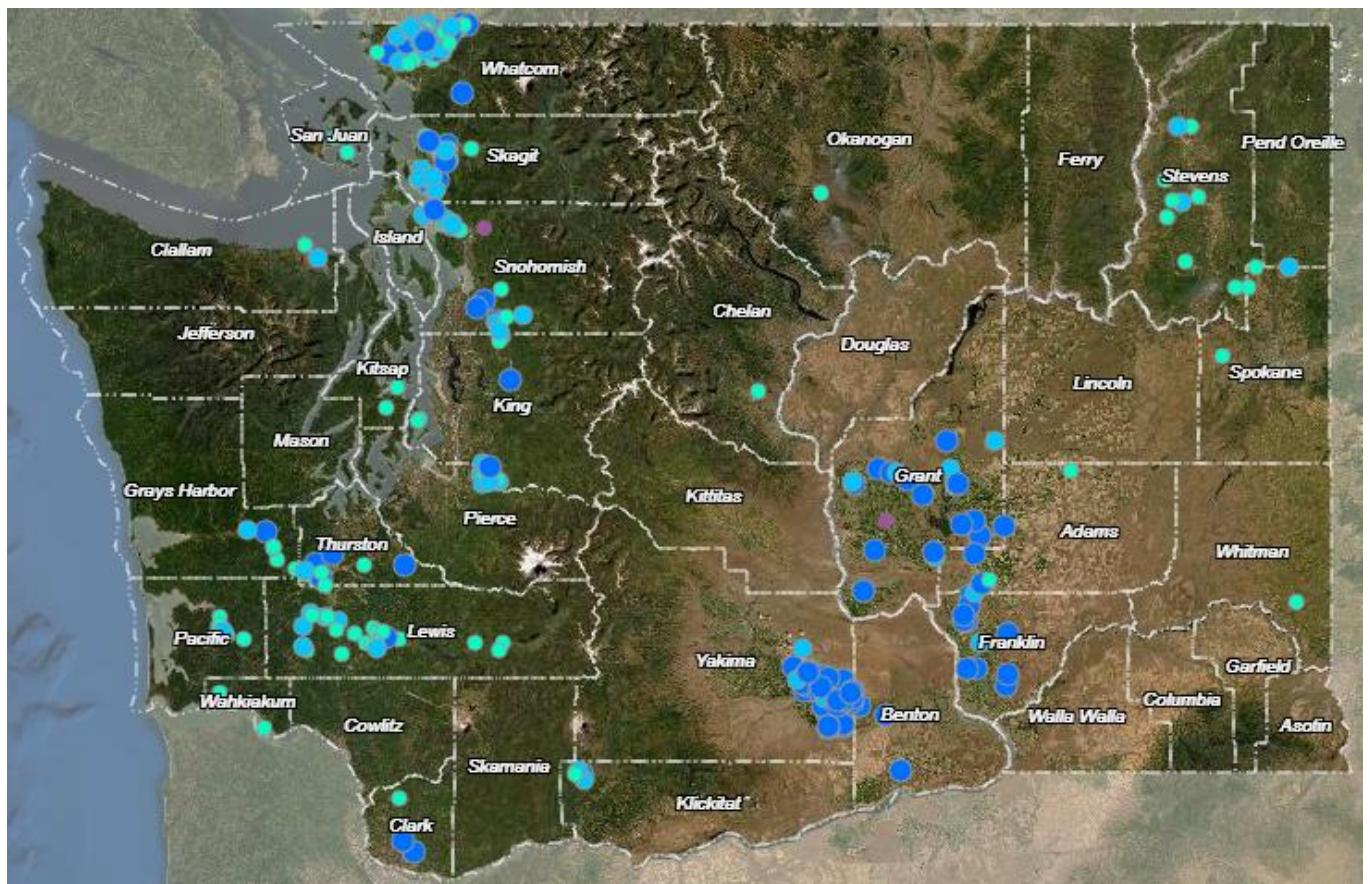
5. Public participation requires agencies to dialogue with all stakeholders, not just a few. It is contrary to the intent of public participation when agencies hold discussions behind closed doors, draft policy, and then solicit public comment a few days before deadlines for policy delivery. Public participation requires agencies to listen to people who live with real life problems and negotiate workable solutions.
6. Climate Change is the most urgent problem facing Washingtonians and mankind today. NPDES permits for CAFOs provide one opportunity to reduce the impact of climate change. To do this well it is necessary to look at discharges from CAFOs in a holistic manner. This means evaluating emissions from CAFOs and re-deposition of pollutants on the land when measuring CAFO impacts. This means considering the consequence when too much groundwater is withdrawn to water cows.
7. Taking actions that are essential for the wellbeing of our planet cannot occur without first having Environmental Consciousness: *the awareness of what Global Warming is and the actions needed to address its harmful impacts*. Studying and learning about Global Warming is the key to developing Environmental Consciousness. Environmental consciousness is therefore an essential power for environmental action.



Overview of Dairy CAFOs in WA State

There are big differences in concentrated animal feeding operations (CAFOs) across Washington State. These facilities tend to be much larger on the eastern side of the state. Dairies may or may not be CAFOs. For WA State Dept of Agriculture purposes, a small dairy ■ has ≤ 199 animals. A medium sized dairy ■ has 200 to ≤ 699 animals and a large dairy ■ has ≥ 700 animals.

Soils are different in different areas. Precipitation is heavier on the westside, and aquifers are often shallower. Aquifers in the Yakima Valley are shallower than aquifers in the Columbia Basin. Water scarcity is a major concern in Eastern Washington.

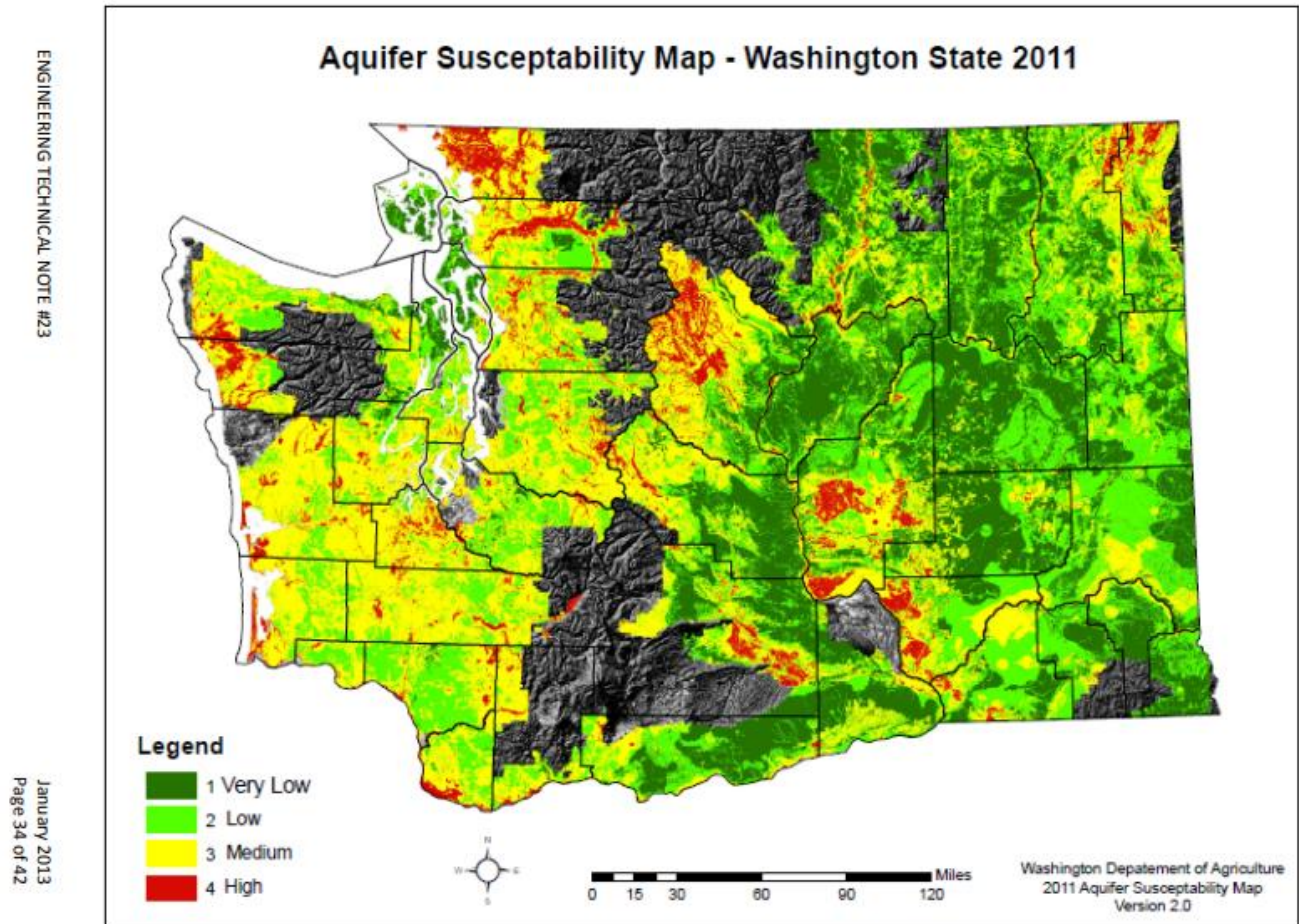


From <https://www.arcgis.com/apps/webappviewer/index.html?id=187a52c48d8047f3b699206c8ae54d38>

Here is the breakdown by size of Washington dairies (No data for Indian Reservations):

County	# Facilities	Large	Medium	Small	Unknown
Adams	3	2	0	1	
Benton	3	3	0	0	
Chelan	1	0	0	1	
Clallam	2	0	1	1	
Clark	3	2	0	1	
Franklin	10	9	1	0	
Grant	24	16	7	0	1
Grays Harbor	6	1	1	4	
Island	1	0	1	0	
King	19	2	8	9	
Kitsap	2	0	0	2	
Klickitat	4	1	2	1	
Lewis	27	1	6	20	
Lincoln	1	0	0	1	
Okanogan	1	0	0	1	
Pacific	6	0	2	4	
Pierce	1	0	1	0	
San Juan	2	0	0	2	
Skagit	20	5	9	6	
Snohomish	19	5	6	7	1
Spokane	4	0	1	3	
Stevens	9	0	2	7	
Thurston	9	4	1	4	
Wahkiakum	2	0	0	2	
Whatcom	75	17	30	27	1
Whitman	1	0	0	1	
Yakima	40	33	6	1	
Totals	295	101	85	106	3
		34%	29%	36%	1%

WSDA has mapped Washington State according to aquifer susceptibility to leaching.



In Washington large CAFO dairies tend to locate in areas where the aquifers are especially vulnerable to nitrate leaching. In Washington most manure lagoons were built prior to 2004, to outdated standards that allow leaching of large amounts of pollutants to groundwater.

Puget Sound

According to the *Puget Sound Nutrient Synthesis Report, Part 2*,² “Puget Sound has areas of low dissolved oxygen that do not meet Washington State Water Quality Standards due to the influence of excess nutrients from anthropogenic sources.” And “The Snohomish and Skagit Rivers have the highest overall total nitrogen loads into Puget Sound. The Stillaguamish, Nooksack, and Snohomish Rivers have the highest total nitrogen yield (load per unit area).”

Table 3, *Total nitrogen load at river mouth by nutrient source*, from the *Puget Sound Nutrient Synthesis Report, Part 2*² describes the impact of manure on nutrient pollution of Puget Sound.

River	Atm. (%)	Urban				Agriculture		Forests	
		Dev. (%)	Point sources (%)	OSS (%)	Power returns (%)	Fertilizer (%)	Manure (%)	Forests (other) (%)	Alder (%)
Skokomish	19	1	3	5	0	11	4	8	49
Elwha	20	0	3	2	0	1	3	23	48
Deschutes	9	17	0	8	0	21	16	2	27
Nisqually	12	5	3	9	0	13	15	3	42
Puyallup	9	13	12	7	21	5	10	2	21
Green-Duwamish	10	27	1	12	0	9	16	1	25
Cedar	9	46	0	17	0	1	2	1	23
Snohomish	19	5	9	8	0	3	12	4	40
Stillaguamish	20	3	4	5	0	7	14	3	44
Skagit	23	2	4	3	0	10	13	8	38
Nooksack	15	2	2	4	0	18	34	2	24

Atm. = atmospheric sources; Dev. = developed land; OSS = on-site septic systems.

Lower Yakima Valley

Since 2010 the U.S. Environmental Protection Agency (EPA) has engaged with five Lower Yakima Valley (LYV) CAFO dairies under an administrative order of consent (AOC), in an effort to reduce pollution of groundwater in that community. EPA studies found that 61% of domestic wells one mile down gradient from this cluster of dairies delivered water with nitrate levels above the safe drinking water standard of 10 mg/L (ppm). One monitoring well had nitrate levels as high as 234 mg/L.³

One of the five dairies, a dairy with a WSDA approved nutrient management plan, applied nitrogen to cropland at seven times agronomic rates. Two of the dairies in the cluster do not have NPDES permits even though deep soil testing beneath abandoned lagoons proves significant leaching and monitoring wells on the property are far above 10 mg/L.

There is another very large LYV dairy conglomerate with three lagoons that were rated in the high risk categories during Tech Note 23 inspections. This conglomerate has been cited for manure discharges and for dumping dead calves into a draw with a seasonal stream. This conglomerate keeps thousands of baby calves in hutches on land upgradient from a small town with a polluted municipal well. The soil beneath the hutches is well drained and there is no monitoring for discharge to the aquifer. There are no NPDES permits for these facilities.

Composting

CAFO dairies increasingly compost manure to dispose of it. Experts state that as much as 75% of dairy manure is composted.⁴ In Yakima County WSDA estimates there are 536 acres dedicated to manure composting.⁵ These are 536 acres that can no longer be used for growing crops without removal of contaminated soils.

RCW 90.64 and WAC 16.611 do not directly address manure composting.

On average over 50% of manure nitrogen is lost during the composting process – to the air and ground.⁶ Large quantities of nitrates leach to soils and aquifers from composting operations.⁷⁻¹⁰

Ecology ignored composting in the 2017 NPDES permits for CAFOs, except for lip service to animal mortalities. WSDA ignored composting in their unapproved LYV GWMA Nitrogen Availability Assessment.¹¹ That study assigned a value of zero to leaching from manure compost operations.

In Yakima County the South Yakima Conservation District has told dairymen that it is acceptable to compost manure on bare ground.¹² The WA State Conservation Commission refuses to intervene.¹³

Composting is addressed in WA law under WAC 173-350-220. Yakima Valley dairies that compost manure ignore the law and do not report to the Yakima Health District as required for exemptions.¹⁴

FOTC submits this as further evidence of the dairy industry’s belief that they are above the law.

Manure Lagoons

1. The 9th Court of Appeals found in CARE v. Cow Palace (2015) that manure lagoons without synthetic liners are designed to leak. The expert witness for Cow Palace agreed in deposition, assuming a seepage flux of 1×10^{-7} cm/s and a one-foot liner, that lagoons would leak 924 gallons of manure per day, per acre of lagoon.¹⁵
2. According to NRCS Conservation Practice Standard 520, Pond Sealing or Lining, Compacted Soil Treatment¹⁶:

The minimum thickness of the finished compacted liner must be the greater of—

- *The liner thickness required to achieve a specific discharge (unit seepage) design value, or*
- *A liner thickness required by State regulations, or*
- *The minimum liner thickness as shown in table 1.*

Table 1. Minimum liner thickness by design storage depth.

Design Storage Depth (ft)	Liner Thickness (in)
≤16	12
16.1–24	18
24.1–30	24

3. According to documents from the WSDA/Ecology Tech Note 23 inspections of Yakima County Dairies¹⁷ officials inspected 130 Yakima County manure lagoons and ponds. They found liner thickness data for only 10 of those lagoons. Officials do not know the thickness of 120 Yakima County manure lagoons and ponds. Therefore, they cannot estimate the amount of manure leakage from those structures.

4. In her Literature Review of Manure and Groundwater Quality¹⁸, Ecology's Melanie Redding found only one lagoon study without evidence of leakage. That lagoon was the seven year old Sheridan Lagoon in Lewis County. She stated that she knew of no studies that say clay lined lagoons do not leak.
5. Hydrogeologist and expert witness for environmentalists, David Erickson, refuted the conclusion that the Sheridan lagoon does not leak during his testimony in Puget Sound Keeper, et al. v. Ecology.¹⁹
6. Lagoons on the LYV "Dairy Cluster" have recently been decommissioned according to standard procedures as part of the dairies' administrative order on consent with the Environmental Protection Agency. The dairies conducted deep soil testing beneath the abandoned lagoons. That testing shows conclusively that clay lined lagoons leak significant amounts of nitrate and ammonia, and that the leakage follows preferential pathways.^{20, 21}
7. With 210 acres of lagoons in Yakima County and a minimum leakage rate of 900 to 5,000 gallons per acre per day, there is leakage of between 189,000 and 1,050,000 gallons of lagoon water/manure every day to the vadose zones above LYV aquifers. This discharge could be eliminated by installing synthetic lagoon liners.

Economic Impact Statement

Ecology's 2017 *Economic Impact Analysis Concentrated Animal Feeding Operation General Permit*²¹ states in bold:

This analysis does not include assessment of economic benefits (of the permit), environmental impacts, or impacts to surrounding communities. It only estimates the additional costs borne by expected Permittees resulting from compliance with the requirements of the final general permit.

FOTC objects to this limited interpretation of the law because concentrated animal feeding operations that pollute the groundwater and surface water have strong negative impacts on neighboring small businesses including family farms, people who fish for a living, and shellfish operations.

Climate Change

Climate change is an existential crisis that impacts all Washingtonians. Any and every action to address climate change must consider activities as those activities impact the whole ecosystem. Ecology has a legal obligation, affirmed by the WA State Court of Appeals, to consider Climate Change when issuing NPDES permits for CAFOs. Three broad categories of concern are:

1. Sending pollutants into the ambient air
2. Depletion of groundwater
3. Pollution of ground and surface waters

The Washington State Dept. of Agriculture estimates that a third of the nitrogen produced by milk cows volatilizes.²³ This is one method of waste disposal, equal in importance to over application of manure to cropland. Reactive nitrogen (NH₃, N₂O) redeposits everywhere, especially on the land and waters near sources. Reactive nitrogen in the air re-deposits on alpine forests where it damages plants that do not tolerate excessive nitrogen. NPDES permits for CAFOs must require estimates of nitrogenous emissions and impose requirements to minimize those emissions.

If there is no water, then pollution is not a concern. There is a CAFO dairy in Yakima County that went to court to force Ecology and the county to issue a permit to place thousands of cows in an area where the aquifers are falling at some of the highest rates in the state. The resulting approval required the dairy to install four monitoring wells to measure leaching of nitrates to the groundwater. After fifteen years three of the monitoring wells have gone dry. End of story. If there is no water then there is no problem, except for the neighbors whose wells have cavitated. There is no legal way to go back and withdraw the permits so now people must deal with an altered environment. Unlimited expansion of CAFOs depletes the aquifers. Can Ecology legally permit discharge to shrinking aquifers?

Clay lined manure lagoons leak to groundwater. Groundwater feeds surface water. Rivers and streams feed the ocean and Puget Sound. There are dead zones along coastal Washington and within Puget Sound directly attributable to nutrient pollution. The *Puget Sound Nutrient Synthesis Report, Part 2*,¹ estimates that 25.4 million kg/yr (27,940 tons) of nutrients are discharged into the sound every year. And 16.7% of this discharge is due to agriculture. Ecology has the power and duty to reduce this percentage at every opportunity. NPDES are potentially strong tools that can nearly eliminate the discharge of pollutants from manure lagoons by requiring synthetic liners.

FOTC recommendations for NPDES permits for CAFOs that we believe will ensure protection of Washington waters.

Over the past twenty five years the dairy industry has secured special privileges under Washington law that give this industry benefits others do not enjoy. One such protection is RCW 90.64.030 (11) which states:

This section specifically acknowledges that if a holder of a general or individual national pollutant discharge elimination system permit complies with the permit and the dairy nutrient management plan conditions for appropriate land application practices, the permit provides compliance with the federal clean water act and acts as a shield against citizen or agency enforcement for any additions of pollutants to waters of the state or of the United States as authorized by the permit.

In other words, if NPDES permits for dairy CAFOs are weak, then Washington dairies have a license to pollute. Based on extensive experience living with dairies, FOTC asks for the strongest possible permit and suggests the provisions below, subject to further consultation and discussion.

Proposed Criteria for Permit Coverage:

This permit conditionally authorizes the discharge of pollutants to land, groundwater, or surface water by concentrated animal feeding operations subject to limitations in the permit. All authorized discharges must be in compliance with the terms and conditions of this permit.

The owner/operator of a new facility or existing facility where animal wastes are generated is required to apply for coverage under this permit if any of the following statements apply:

- a. At any stage of production, the facility discharges animal waste to cropland where it is applied as fertilizer or soil amendments
- b. At any stage of production, the facility discharges animal waste to a lagoon or other liquid storage structure
- c. At any state of production, the facility stockpiles animal waste
- d. The facility transports animal waste through underground or above ground conveyance systems
- e. The facility uses tile drains to remove excess water from fertilized fields
- f. The facility discharges animal waste into the ambient air through manure transport, lagoon treatment, turning of compost, land irrigation, or other methods that result in significant emissions.
- g. The facility is located next to a river or stream
- h. The facility is located in a flood plain, a critical aquifer recharge area, or above a sole source aquifer
- i. The facility is located on soils that are well drained, somewhat excessively well drained or excessively well drains, per NRCS mapping.

Proposed Permit Conditions:

1. Post-harvest soil sampling of all fields shall take place before new manure is applied to ascertain the extent to which there are residual nutrients in the soil. Each field shall have a specific nutrient budget before any further applications are allowed. No immediate application of manure shall occur if post-harvest nitrate plus ammonium exceeds the following numbers for either of the first two feet if no crop is to be immediately planted. If double-cropping is to take place, manure must be applied in the amounts needed for the crop at the appropriate time. For example, if a winter crop is to be planted, only the nutrient needed to support the crop during the winter shall be applied and additional nutrient could be added in the spring, if needed.
 - a. For the first year- no application if soils exceed 45 ppm (nitrate plus ammonium)
 - b. Second year- 35 ppm
 - c. Third year- 30 ppm
 - d. Fourth year- 20 ppm
 - e. Fifth year and thereafter- 15 ppm
2. Application of manure shall occur according to the parameters below if post-harvest phosphorous exceeds these numbers for either of the first two feet.

- a. < 40ppm – Apply manure based on N
 - b. 40.1 to 100 ppm – Apply Phosphorous at no more than 90% of crop extraction rates
 - c. 100.1 to 180 ppm – Apply Phosphorous at no more than 80% of estimated crop extraction rates
 - d. 180.1 ppm to 300 ppm – Apply Phosphorous at no more than 25% of estimated crop extraction rates
 - e. 300 ppm – No Phosphorous application
3. Soil tests shall be performed at the one foot and two levels on the west side and the one, two and three foot levels on the east side.
 4. No manure applications to:
 - a. Fallow fields in the fall that will not be planted until spring.
 - b. Frozen fields (frozen surface crust or soil at or below zero degrees Celsius)
 - c. Snow-covered fields
 - d. Fields with saturated soil, or fields where the precipitation forecast for the next 24 hours for the Facility’s location indicates that a discharge would occur from the Facility’s land application areas
 5. All earthen lagoons shall be upgraded to a synthetically double-lined leak detection system or equivalent technology. Facilities shall begin planning for upgrades within six months of signing the permit and shall meet the following schedule for upgrading the lagoons (AUs determined by USDA definitions):
 - a. Category 1: 280-999 Animal Units (AUs)- within five years
 - b. Category 2: 1000-2499 AUs- within four years
 - c. Category 3: 2500-4999 AUs- within three years
 - d. Category 4: 5000 or more AUs- within two years
 6. At all compost areas facilities shall:
 - a. Re-grade, as necessary, the area to a slope of at least 2% and
 - b. Compact, as may be necessary, the area to 95% of standard proctor compaction to reduce permeability
 - c. Line any swales, low spots, or other leachate collection areas with asphalt or similar surface to direct leachate to the liquid manure containment system
 - d. All composted manure shall be fully cycled annually such that no compost shall remain at the facility for longer than one calendar year.
 - e. No composting shall take place on soil that is excessively drained or somewhat excessively drained.
 7. At all silage storage areas facilities shall:
 - a. Re-grade, as necessary, the area to a slope of at least 2%
 - b. Compact, as may be necessary, the area to 95% of standard proctor compaction
 - c. Redirect leachate to liquid containment storage systems
 - d. Line silage areas if the underlying soil is excessively drained or somewhat excessively drained.

8. Each Facility shall implement a protocol of regularly inspecting for and re-grading all low-lying or wet spots within all the animal pens. Upon identification of any ponding of water the Facility shall promptly take reasonable steps to alleviate such ponding, including, as may be appropriate, vacuuming and removing any ponded water from the pens. The re-grading process shall slope any low-lying or wet spots such that they no longer collect, or have the likelihood to collect, runoff from the animal pens. Such inspection and re-grade shall occur at least monthly as weather conditions allow, and as practical in months where weather conditions make re-grading problematic.
9. Facilities that border rivers and streams shall maintain streamside buffers that provide six major functions related to salmon habitat, as determined by experts in fish habitat. These functions are (1) shade, (2) filtration (3) bank stabilization, (4) organic litter, (5) large woody debris, and (6) microclimate.
10. Facilities that border irrigation canals and irrigation drains shall maintain at a minimum 50 foot vegetative buffers that prevent leaching of pollutants to those canals and drains. Facilities must implement any additional measures necessary to prevent leaching or discharge of pollutants to all irrigation canals and irrigation drains.
11. Each CAFO shall install the number of monitoring wells necessary to evaluate groundwater contamination as determined by an engineer or hydrogeologist with expertise in groundwater monitoring on CAFOs. Groups of dairies in close proximity to one another may create a ground water monitoring network.
12. For the first year, there shall be quarterly sampling for:
 - a. Nitrate (as nitrogen) by EPA Method 300.0
 - b. Nitrite (as nitrogen) by EPA Method 300.0
 - c. Ammonia by EPA Method 350.1
 - d. Total phosphorus by EPA Method 365.3
 - e. Total Kjeldahl nitrogen (TKN) by EPA Method 351.2
 - f. Inorganic anions (chloride, fluoride, sulfate) by EPA Method 300.0
 - g. Metals (calcium, potassium, magnesium, sodium) by EPA Method 200.7
 - h. Alkalinity (total and bicarbonate) by Standard Method 2320B
13. After the first year, the wells shall be tested semi-annually for only nitrate and total phosphorus, unless Ecology identifies extenuating circumstances.
14. Facilities located within 2,500 ft of rivers and streams shall test surface waters according to protocols described in Ecology Publication Number 06-03-015, *Preparing Elements of a Quality Assurance Monitoring Plan to Conduct Water Quality Monitoring Near Dairies and CAFOs*. Surface water testing shall be guided by WAC 173-201A-200 through WAC 173-201A-240, and assess for:

- a. Aquatic life temperature criteria
- b. Aquatic life dissolved oxygen (D.O.) criteria
- c. Aquatic life turbidity criteria
- d. Aquatic life total dissolved gas (TDG) criteria
- e. Aquatic life pH criteria
- f. Water contact recreation bacteria criteria
- g. Pesticides and herbicides as appropriate
- h. All pollutants the facility can reasonably be expected to discharge

15. Facilities with exceedances of surface water criteria are in violation of their NPDES permits.

16. Facilities shall report:

- a. Average numbers of animals (milk cows, dry cows, heifers, calves, beef cows, cattle for slaughter, veal calves, bulls, sheep, lambs, hogs < 55 lbs., hogs \geq 55 lbs. laying hens, broilers, horses, ducks, turkeys)
- b. Maximum numbers of animals (milk cows, dry cows, heifers, calves, beef cows, cattle for slaughter, veal calves, bulls, sheep, lambs, hogs < 55 lbs., hogs \geq 55 lbs. laying hens, broilers, horses, ducks, turkeys)
- c. Cropland available for manure application
- d. If there is insufficient acreage for manure application, facilities must provide a reasonable plan for waste disposal
- e. Acreage in compost
- f. The amount of nitrogen produced (Dairies only, using the formula below)
- g. Estimated emissions of reactive nitrogen (Dairies only, using the formula below)
- h. Nitrogen content of solid manure applied as fertilizer, measured three times per year
- i. Nitrogen content of liquid manure applied as fertilizer, measured three times per year
- j. The amount of nitrogen applied to cropland under the control of the facility
- k. The amount of nitrogen in exported manure
- l. The amount of nitrogen in manure designated for compost
- m. The amount of nitrogen in finished compost
- n. Dimensions of manure storage lagoons and wastewater ponds
- o. Inspection reports for lagoons and ponds
- p. Depth of liquids in lagoons and ponds four times per year
- q. Results of groundwater monitoring well tests
- r. Report all spills and discharges

17. Dairies shall estimate nitrogen production by cows using the following WSDA formulas²²:

- **Annual manure production** is calculated using the following formula:

$$[[(\text{number of milking cows}) (1.4) (108)] + [(\text{number of dry cows}) (1.4) (51)] + [(\text{number of heifers}) (0.97) (56)] + [(\text{number of calves}) (0.33) (83)]] (365)/2000$$

- **Nitrogen production** is calculated using the following formula:

$$[[(\text{number of milking cows}) (1.4) (0.71)] + [(\text{number of dry cows}) (1.4) (0.3)] + [(\text{number of heifers}) (0.97) (0.27)] + [(\text{number of calves}) (0.33) (0.42)]] (365)/2000$$

- **Losses due to volatilization** during storage are estimated at 35 percent. This does not include application losses.

Conclusion

CAFOs in Washington State, and particularly CAFO dairies, pollute the groundwater and surface water. Pollution occurs through poorly lined manure lagoons, over application of manure as fertilizer, composting operations, manure conveyance systems, tile drains, and air emissions.

The cost for addressing and mitigating this pollution is millions of dollars every year. It is in the best interests of Washington State to draft and approve strong NPDES permits for CAFOs and to require all CAFOs to obtain permits.

Government does not have the authority to decide that people shall forego eating fish and drink milk instead. Government abuses power when government sacrifices fish runs in order to protect the dairy industry.

References

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2. Puget Sound Nutrient Synthesis Report, Part 2, (2019) Available at <https://apps.ecology.wa.gov/publications/documents/1903019.pdf>
3. U.S. Environmental Protection Agency, Lower Yakima Valley Groundwater (2021) Available at <https://www.epa.gov/wa/lower-yakima-valley-groundwater>
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Friends of Toppenish Creek



October 24, 2021

Dear WA Dept. of Ecology,

Please consider these comments from the Friends of Toppenish Creek (FOTC) as you prepare a new National Pollutant Discharge Elimination System (NPDES) permit for Concentrated Animal Feeding Operations (CAFOs).

Sincerely,

Jean Mendoza

Executive Director, Friends of Toppenish Creek
3142 Signal Peak Road
White Swan, WA 98952

NPDES Fees Must Be Proportional to Potential to Pollute

WAC 173-224 does not comply with the intent of the legislature, *to maintain the highest possible standards to insure the purity of all waters of the state*, as stated in RCW 90.48, because WAC 173-244 does not require CAFO dairies to pay their fair share to prevent pollution.

RCW 90.48.260 authorizes Ecology to administer the federal Clean Water Act in Washington state, relying upon issuance of NPDES permits in great part. A heavy responsibility. But Ecology cannot fulfill this mandate without adequate funding.

Under WAC 173-244 fees for permits for dairies do not cover the cost of administering the program. RCW 90.48.465 (1) requires fees to cover permit implementation, but WAC 173-244 fails to impose commensurate fees for dairies.

WAC 173-244 gives large CAFO dairies an unfair economic advantage over other CAFOs.

Ecology incorrectly interprets RCW 90.48.465 (5) to prohibit increases of NPDES fees for dairies. This is an incorrect interpretation.

WAC 173-224-030 makes no sense. A 200 pound calf does not pollute as much as a 2,000 pound horse, even though the WAC says that both a calf and a horse equal 2 animal units.

* * * * *

1. RCW 90.48.260 authorizes Ecology to administer the federal Clean Water Act in Washington state, relying upon issuance of NPDES permits in great part.

CAFOs are point sources of discharge. When an NPDES permitting program charges fees that are so low as to make pollution affordable and diminish resources for enforcement, then the program is no longer a deterrent to pollution. NPDES permit fees for dairies have not increased since 1999.

Ecology states in *Final Regulatory Analysis for Chapter 173-224 WAC Water Quality Permit Fees, 2019^l*, on page 9:

. . . we also forecast fees based on assumed three-percent annual increases in program costs.

Over a 20 year period costs for administering the NPDES program on Washington dairies have increased over 60%, but fees are unchanged, except for the upper limit threshold. Only 3 out of the 17 Washington CAFO dairies with current NPDES permits are large enough to trigger the upper limit threshold of \$2,076. A dairy with < 4,000 cows pays the same fee today as it did in 1999.

2. WAC 173-244 gives large CAFO dairies an unfair economic advantage over other CAFOs.

An 800 head beef feedlot pays \$3,094 for an NPDES permit. An 800 head dairy pays \$280. Nothing in RCW 90.48 authorizes Ecology to interfere with the marketplace to this degree.

The Washington State Constitution states in Article 1, Section 12:

No law shall be passed granting to any citizen, class of citizens, or corporation other than municipal, privileges or immunities which upon the same terms shall not equally belong to all citizens, or corporations.

It is not the intent of RCW90.48 to encourage some businesses while imposing burdens on their competitors.

3. RCW 90.48.465 (1) requires fees to cover permit implementation, but WAC 173-244 fails to impose commensurate fees for dairies:

... All fees charged shall be based on factors relating to the complexity of permit issuance and compliance and may be based on pollutant loading and toxicity and be designed to encourage recycling and the reduction of the quantity of pollutants. Fees shall be established in amounts to fully recover and not to exceed expenses incurred by the department in processing permit applications and modifications, monitoring and evaluating compliance with permits, conducting inspections, securing laboratory analysis of samples taken during inspections, reviewing plans and documents directly related to operations of permittees, overseeing performance of delegated pretreatment programs, and supporting the overhead expenses that are directly related to these activities.

RCW 90.48.465

Ecology states in *Final Regulatory Analysis for Chapter 173-224 WAC Water Quality Permit Fees, 2019*^l, on page x in the Executive Summary:

Without fee increases, Ecology would likely need to reduce staff or program services, which would result in more time needed to process applications, revisions, and renewals. This would increase the likelihood of a facility being out of compliance with other rules, resulting in potential penalties and increased risk to human health and the environment.

Nevertheless, Ecology did not increase fees for dairy CAFOs and 17 out of 25 currently permitted CAFOs are dairies.

Ecology has not demonstrated that monitoring, evaluating, and inspecting dairy CAFOs is any less complex than conducting those activities on CAFOs for horses, beef cattle, calves, sheep, hogs, or chickens.

4. Ecology incorrectly interprets RCW 90.48.465 (5). There is no cap on fees for dairies:

The fee for an individual permit issued for a dairy farm as defined under chapter [90.64](#) RCW shall be fifty cents per animal unit up to one thousand two hundred fourteen dollars for fiscal year 1999. The fee for a general permit issued for a dairy farm as defined under chapter [90.64](#) RCW shall be fifty cents per animal unit up to eight hundred fifty dollars for fiscal year 1999. Thereafter, these fees may rise in accordance with the fiscal growth factor as provided in chapter [43.135](#) RCW. (Emphasis added)

RCW 90.48.465 (5)

This statute clearly allows increases in fees per animal in accordance with the fiscal growth factor, yet Ecology states that there is a cap on fees for dairies. Consequently, fees per animal for dairy CAFOs have stayed the same for over 20 years. Ecology's *Final Regulatory Analysis for Chapter 173-224 WAC Water Quality Permit Fees, 2019*, states on page 5:

The rule amendments set new fees for discharger categories that have been underpaying compared to their administrative burden, increasing fees overall, but not increasing fees

uniformly, as compared to the baseline. The difference in fee increases is intended to reduce the degree to which there are facilities that over-pay (in excess of what is needed for permit administration) and facilities that underpay (below what is needed for permit administration)

Currently there are 25 permitted CAFOs in Washington State and 17 are CAFO dairies. Ecology did not increase fees for dairies. Ecology's statement above is, at the very least, disingenuous.

Ecology's *Final Regulatory Analysis for Chapter 173-224 WAC Water Quality Permit Fees, 2019*, states on page 17:

The primary goal and objective of the authorizing statute is to collect enough fees in total to fully fund the water quality permitting programs.

Ecology cannot accomplish this goal if the agency does not increase fees to cover increasing costs.

5. WAC 173-224-030 makes no sense. A 200 pound calf does not pollute as much as a 2,000 pound horse.

The number of animals per Animal Unit for calves is 0.500. The number of animals per Animal Unit for horses is 0.500 – the same. This definition equates a 200 # calf to a 2,000 # horse. How can Ecology tell us that the calf excretes the same amount of urine and feces as the horse; that the calf eats the same amount of feed as the horse; that the calf emits the same amount of greenhouse gasses as the horse? It is insanity to pretend that the two animals have the same impact, and it is bad management to ask Ecology employees to pretend that this is the case.

References:

1. WA Ecology (2019) *Final Regulatory Analyses: Chapter 173-224 WAC Water Quality Permit Fees*. Available at <https://apps.ecology.wa.gov/publications/documents/1910025.pdf>
2. RCW 90.48 Water Pollution Control Act at <https://app.leg.wa.gov/rcw/default.aspx?cite=90.48&full=true#90.48.010>
3. RCW 34.05 Administrative Procedures Act at <https://app.leg.wa.gov/rcw/default.aspx?cite=34.05&full=true#34.05.320>
4. WAC 173-224 Water Quality Permit Fees at <https://apps.leg.wa.gov/wac/default.aspx?cite=173-224&full=true>

Friends of Toppenish Creek



October 24, 2021

Dear WA Dept. of Ecology,

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Sincerely,

Jean Mendoza

Executive Director, Friends of Toppenish Creek
3142 Signal Peak Road
White Swan, WA 98952

Why Washington must require NPDES permits for all CAFOs

It is in the overriding public interest to require all CAFOs to obtain NPDES permits because this is the most effective and efficient way for Washington State to implement the Clean Water Act with respect to animal agriculture.

1. As we all know a federal court ruled that CAFOs cannot be required to obtain NPDES permits solely on the presumption that the CAFOs have a potential to discharge. There must be proof of discharge according to federal law.¹
2. States may enact regulations that are more stringent than federal rules.²
3. Washington Ecology's Literature Review identified only one CAFO dairy where studies were conducted and there was no proof of discharge.³ Experts dispute this one supposed exception.⁴ Ecology has found no studies that say manure lagoons do not discharge to

groundwater.⁵ The courts have found ⁶, and the Natural Resources Conservation Service states ⁷, that clay lined manure lagoons are designed to leak.

4. Ecology has so far subscribed to the legally safe course of action that says only CAFO dairies with proven discharges will be compelled to obtain permits. Consequently only 24 WA CAFOs and only 19 out of 230 WA CAFO dairies have NPDES permits.^{8,9} Ecology simply does not have the resources to adequately evaluate every WA manure lagoon.
5. At the start of 2005, 101 dairies and 16 non-dairy facilities were covered by the permit.¹⁰ Washington is moving backward.
6. There are CAFO dairies in Washington with well documented discharges that do not have permits, presumable because Ecology does not have the resources to take these CAFOs to court and enforce the law.¹¹
7. Private citizens throughout Washington State pay for this lack of regulation every day as they purchase bottled water¹² and deal with the health impacts from nitrates in well water.¹³
8. Requiring all Washington CAFOs to obtain NPDES permits will save Washington taxpayers millions of dollars and will improve health.
9. Requiring all Washington CAFOs to obtain NPDES permits will fulfill the requirements of Washington water law to protect the purity of Washington waters.¹⁴
10. Prevention is less costly than remediation.
11. CAFO owners who pollute the waters of the state do not compensate neighbors and taxpayers for the damage done by pollution.¹⁵
12. Since 2017 about one CAFO per year has acquired an NPDES permit.⁹ There are currently about 230 CAFO dairies in Washington State and 19 have NPDES permits.⁹ At a rate of one per year it will take over 200 years to bring all these CAFOs under permit.
13. Ecology is required by law to prevent water pollution.¹⁶

References:

1. Waterkeeper Alliance, Inc. v. U.S.E.P.A, 399 F.3d 486 (2d Cir. 2005) Available at <https://www.casemine.com/judgement/us/5914b68badd7b04934779782>
2. 40 CFR § 131.4 - State authority. (a) *States* (as defined in § 131.3) are responsible for reviewing, establishing, and revising *water quality standards*. As recognized by section 510 of the *Clean Water Act*, *States* may develop *water quality standards* more stringent than required by this regulation. Consistent with section 101(g) and 518(a) of the *Clean Water Act*, *water quality standards* shall not be construed to supersede or abrogate rights to quantities of water.
3. Redding, Melanie. *Manure and Groundwater Quality: Literature Review*. Washington State Department of Ecology, Environmental Assessment Program, 2016. Available at <https://apps.ecology.wa.gov/publications/documents/1603026.pdf>
4. On page 810 of his testimony in PSK v. Ecology, David Erickson refutes the assertion that the Sheridan lagoon did not leak: <http://charlietebbutt.com/files/WA%20Permit/WA%20State%20Dairy%20Federation%20vs.%20Ecology%205-24-18.pdf>
5. The Sheridan lagoon was seven years old when Ecology performed this study. According to the abstract: *Monitoring wells were installed and subsequently sampled quarterly. Analytes included chloride, total dissolved solids, total organic carbon, chemical oxygen demand, total phosphorus, ammonia-N, nitrate + nitrite-N, and total and fecal coliform bacteria. The target aquifer consisted of a thin, confined or semi confined gravel layer at a depth of about 30 feet. Silt and clay deposits overlie the gravel layer and act to separate the lagoon from the aquifer. The lagoon does not appear to have affected ground water quality to date. Although nitrate + Nitrite-N concentrations were elevated relative to upgradient conditions in two downgradient wells none of the other parameters tested, particularly chloride, were elevated.* Groundwater Quality Assessment at Sheridan Dairy Lagoon, Adna, Washington (1992). Available at <https://apps.ecology.wa.gov/publications/documents/92e24.pdf>
6. Published Opinion: WA Dairy Federation et al v. Ecology. WA State Court of Appeals No. 52952-1-II (2021) Available at [D2 52952-1-II PUBLISHED OPINION \(4\).pdf](https://www.courts.wa.gov/court_records/opinions/52952-1-II_PUBLISHED_OPINION_4.pdf)
7. NRCS Agricultural Waste Management Field Handbook, *Chapter 10: Agricultural Waste Management System Component Design*, App. 10D-16, (2009) (“NRCS guidance considers an acceptable initial seepage rate to be 5,000 gallons per acre per day.”) Available at <https://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=31529.wba>
8. Testimony of Melanie Redding before the WA State Pollution Control Hearings Board, Day 2, 5/22/2018. (page 395) Available at <http://charlietebbutt.com/files/WA%20Permit/WA%20State%20Dairy%20Federation%20vs.%20Ecology%205-22-18.pdf>
9. Ecology Permitting and Reporting Information System (PARIS). Available at <https://apps.ecology.wa.gov/paris/PermitLookup.aspx>
10. Preparing Elements of a Quality Assurance Monitoring Plan to Conduct Water Quality Monitoring Near Dairies and CAFOs (2006) Available at <https://apps.ecology.wa.gov/publications/documents/0603015.pdf>
11. A few of the dairies with documented discharges to waters of the state:

- A. Bartelheimer Dairy in Snohomish County. Now SnoValley Farms.
 - B. Bosma Dairy & Liberty Dairy in Yakima County
 - C. Klompe Dairy & Veldhuis Dairy in Yakima County
12. Costs Related to Elevated Nitrates in Groundwater (2017) Available at <https://www.yakimacounty.us/DocumentCenter/View/18726/GWMA-MR-Attachment-26-Costs-Related-to-Elevated-Nitrates-in-Groundwater>
 13. Health Problems Related to Nitrates in Drinking Water (2017) Available at <https://www.yakimacounty.us/DocumentCenter/View/22178/GWMA-VolumeIV-MemberContributions-July2019>
 14. Regulatory Authority in the Lower Yakima Valley Groundwater Management Area (2019) Available at <https://www.yakimacounty.us/DocumentCenter/View/22175/GWMA-VolumeII-Appendices-July2019>
 15. RCW 90.64.150 Livestock nutrient management account: *The livestock nutrient management account is created in the custody of the state treasurer. All receipts from monetary penalties levied pursuant to violations of this chapter must be deposited into the account. Expenditures from the account may be used only to provide grants for research or education proposals that assist livestock operations to achieve compliance with state and federal water quality laws.*
 16. WAC 173-200-030 Available at <https://apps.leg.wa.gov/wac/default.aspx?cite=173-200-030>

Friends of Toppenish Creek



October 24, 2021

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Rules & Regulations that Favor Dairies

The dairy industry will contest stronger NPDES permits on the grounds that dairies are over regulated and suffering economic distress. To counter these arguments FOTC submits this list of rules and regulations that give dairy CAFOs special treatment.

40 CFR Part 122

Removed the requirement that CAFOs apply for NPDES permits if they “propose to discharge” to waters of the state.

RCW 90.48.260

WA Ecology and WA State Dept. of Agriculture have a memorandum of understanding (MOU) regarding NPDES permits for AFOs and CAFOs that has not received federal approval. This MOU complicates the enforcement process to such a degree that little enforcement takes place.

The MOU states, “WSDA is responsible for inspections and compliance actions for all dairies.”

Only the dairy industry receives this special treatment. Dairy is inspected by the same agency charged with protecting and marketing the industry.

Since WSDA took over inspection of dairies for compliance with the Clean Water Act in 1998 the number of inspectors has fallen from 7 to 4. There is one inspector for all of Eastern Washington where 2/3 of WA milk cows are kept. It is physically impossible for one inspector to properly monitor this many CAFOs.

RCW 90.64

- No oversight committee as required in sections 90.64.005, 90.64.023, 90.64.026, 90.64.050, 90.64.080
- No EPA approval
- No livestock program as anticipated
- Has been incorrectly cited by air control agencies and health agencies as a method of addressing air quality and public health. RCW 90.64 only applies to the Clean Water Act.

RCW 90.64.020

Unlike regulations for other sources, requires on-site inspection of a facility before requiring a permit. This is an additional, expensive hurdle that regulators must pass. Funding is inadequate because fees for dairy permits have been frozen since 1998. Since there is no funding for inspections, there is no proof of discharge, and no requirement for a permit.

RCW 90.64.150

All penalty fees levied against dairies can only be spent on education and research for dairy.

RCW 90.64.901

In 1998 when the Dept. of Ecology tried to implement the Dairy Nutrient Management Act the dairy industry pushed back and convinced the legislature in 2003 to move that authority to the WA State Dept. of Agriculture. Only the dairy industry is regulated by the same agency designed to promote and market their products. Since 2003 the number of permitted dairies has dropped from 101 to 19. Dairies do not have to implement their dairy nutrient management plans and pollution proliferates.

WAC 173-201A-020

Ecology has never developed a list of approved Best Management Practices¹

WAC 173-224

Requires significantly lower permit fees for dairies compared to other forms of animal agriculture. An 800 head beef feedlot pays \$3,094 for an NPDES permit. An 800 head dairy pays \$280.

In 2015 Ecology increased fees for sources that underpaid, except for dairies.²

RCW 90.72.070

Shellfish Protection Districts may charge dairies no more than \$500 per year in fees to protect shellfish beds from closures. There are no limits on fees for other sources.

RCW [90.44.050](#) (The 1945 Stock Watering Law)

Has been interpreted to mean that animal feeding operations can withdraw unlimited amounts of groundwater for livestock.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

Exempts animal agriculture from reporting air emissions

Emergency Planning and Community Right-to-Know Act (EPCRA)

Exempts animal agriculture from reporting air emissions

40 CFR Part 98

EPA is not implementing subpart JJ (manure management) of 40 CFR Part 98 using funds provided in its appropriations due to a Congressional restriction prohibiting the expenditure of funds for this purpose.

RCW [7.48.305](#)

Has been interpreted to mean that animal agriculture can do anything they please and citizens have the burden of proving harm to our health.

RCW [70A.15.4530](#) Odors or fugitive dust caused by agricultural activities consistent with good agricultural practices exempt from chapter

Has been interpreted to prohibit regulation of all emissions from CAFO dairies.

RCW [46.25.050](#) Commercial driver's license required—Exceptions, restrictions, reciprocity

Drivers of farm vehicles are not required to obtain commercial licenses.

WAC 173-350-220 (2) Composting facilities – Permit exemptions.

Provides special exemptions for dairies.

WAC 173-350-220 requires dairies that compost manure to register with and report to local health districts. Yakima Valley dairies ignore the law do not register with or report to the Yakima Health District.⁴

WAC 16-256 Commercial Feed Rules

The State of Washington finds it necessary to regulate how much animal waste (feces) can be included in animal feed.

WAC 16-250 Commercial Feed

The State of Washington finds it necessary to regulate the addition of certain animal parts to food for livestock. This relates to the practice of feeding bovine nervous tissue to cows and the subsequent spread of bovine spongiform encephalopathy.

The Agricultural Act of 2014 (HR 2642)

Established a Margin Protection Program. For \$100 dairies can buy insurance that compensates them when the difference between milk prices and cost for feed falls below a certain level. This program also requires the government to purchase dairy products for food programs when dairy profits decline. The United States has a stockpile of 1.4 billion pounds of surplus cheese.³

References:

1. *The Quest for the Holy Grail*, Page 24, Agricultural Pollution of Puget Sound at <http://www.westernlaw.org/sites/default/files/Agricultural%20Pollution%20in%20Puget%20Sound%20-%20April%202016%20-%20Web.pdf>
2. WA Ecology, Final Cost-Benefit Analysis and Least Burdensome Alternative Analysis Chapter 173-224 WAC Wastewater Discharge Permit Fees. Available at <https://apps.ecology.wa.gov/publications/documents/1510047.pdf>
3. Friends of Toppenish Creek, How CAFOs Milk the Public (2021) Available at <http://www.friendsoftoppenishcreek.org/cabinet/data/FOTC%20How%20CAFOs%20milk%20the%20public%20and%20pollute%20the%20environment.pdf>
4. Personal Communication, Shawn Magee, Yakima Health District, October 20, 2021.

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Systems Theory

Ecology's Mission: Protect, preserve, and enhance the environment for current and future generations.

The Friends of Toppenish Creek believe strongly that WA Ecology must strive to fulfill this mission every day, that this mission must guide your every action and interaction. Ecology is the only agency with the resources and authority to look at life in Washington State as a whole.

And so, FOTC submits some observations on systems theory and Ecology's NPDES permits for CAFOs. We hope that Ecology will consider this perspective and expand your criteria for decision making.

Family Farms

The Friends of Toppenish Creek are not unsympathetic to problems in the agricultural community, in this case problems for dairies which comprise most Washington CAFOs. Many or even most members of FOTC grew up on family farms. We have watched in pain as out of area businessmen who barely know the difference between a cow and a steer¹ swallow up small dairies and incorporate them into thousand head factory farms.^{2,3,4}

We believe that people who live close to the land simply want to farm and have done what experts advised and the laws required in order to continue this way of life. Too often family farmers were misled, as evidenced by the decline in the number of Washington dairies. Family farmers rightfully prefer to farm, rather than spend time studying computer technology, hydrogeology, bio-ethics, communications, fisheries, forestry, public health, and the law. The same is true for FOTC. But here is a summary of what happens when we trust too much.

- Dairymen were advised in the late 1980's to build manure lagoons to store manure over winter months and avoid applying manure to fields when there were no crops to take up the nutrients. Experts did not advise them adequately about lagoon linings and these lagoons were frequently built with minimal compaction and ineffective clay liners. Newer, more effective requirements for lagoon liners are more stringent.⁵
- Government has explicitly interfered in the marketplace and supported programs that promote mega dairies and lead to the decline of smaller operations.⁶
- Experts and entrepreneurs sell dairymen manure treatment systems that frequently do not deliver on promises, that increase costs for farmers and prioritize increased profits for those who sell innovation.⁷
- Experts market systems to spread liquid manure using big guns and irrigation to Washington dairymen. A Deep Soil Sampling study in the LYV GWMA found higher nitrate levels in fields where this form of manure fertilization is used.⁸
- Experts have advised dairymen to rely on composting to deal with the large amounts of manure produced by high producing milk cows. This will inevitably lead to complaints from environmentalists and public health experts about the unintended consequences of sending large volumes of reactive nitrogen and other pollutants into the ambient air.⁹
- Today the price farmers receive for milk is so low that dairies must produce more and more milk per dairy to survive. Dairy farms that do survive find themselves paying more and more money to agronomists, nutritionists, lobbyists, attorneys, brokers, communications specialists, and candidates for public office. (FOTC struggles with the same issues and even less money)
- Also see Attachment A at the end of this document that describes the history of the WSDA Dairy Nutrient Management Program

Fisheries & Shellfish

Salmon in Washington are struggling. *50-90 percent of land along waterways (riparian areas) has been lost or extensively modified by humans. Riparian areas and floodplains are critical for salmon and will increase in importance as environmental conditions become more extreme due to climate change.*⁹ Loss of habitat for spawning is a leading reason for declining salmon numbers.

At this time, 14 species of salmon and steelhead are at risk of extinction in Washington State under the Endangered Species Act.⁹ Requiring healthy buffers will go a long way to restoring salmon runs in our state.

The Columbia River Inter Tribal Fisheries Commission states: “Historically, we were wealthy peoples because of a flourishing trade economy based on salmon. For many tribal members, fishing is still the preferred livelihood.”¹⁰ Tribal people who rely on salmon suffer, and have suffered for years, due to declining fish numbers. Fishermen no longer sell fresh salmon on the roads and highways of Yakima County. Decreasing numbers of Chinook salmon are listed as the leading reason for decreases in the number of Orca whales.¹¹

According to the Puget Sound Partnership¹² “Of Puget Sound’s approximately 257,000 acres of classified commercial and recreational shellfish beds, around 33,000 acres, or 13%, do not meet water quality standards and are closed to harvest.” In 2010 The Lummi Nation estimated an economic loss of about \$850,000 per year associated with the shellfish bed closures.¹³ There are 20 Shellfish Protection Districts in Washington with funding that ranges from \$380,000 to \$657,500.¹²

According to the *Puget Sound Nutrient Synthesis Report, Part 2*,¹⁴ “Puget Sound has areas of low dissolved oxygen that do not meet Washington State Water Quality Standards due to the influence of excess nutrients from anthropogenic sources.” And “The Snohomish and Skagit Rivers have the highest overall total nitrogen loads into Puget Sound. The Stillaguamish, Nooksack, and Snohomish Rivers have the highest total nitrogen yield (load per unit area).”

CAFO Impacts on the Environment & People

The evidence is clear: CAFO dairies pollute the groundwater.

EPA studies in the LYV found that 61% of domestic wells one mile down gradient from a cluster of dairies delivered water with nitrate levels above the safe drinking water standard of 10 mg/L (ppm). One monitoring well had nitrate levels as high as 234 mg/L.¹⁰

The evidence is clear: CAFO dairies pollute the surface water.

The Nooksack River in Whatcom County delivers 1,729,000 kg of nitrogen per year to Puget Sound. About half is from agriculture and 34% is from manure.¹⁴

Costs to purchase bottled water

FOTC has estimated that people in the LYV spend over \$1 million per year on bottled water.¹⁶ This is an unofficial tax that people in this area, where 27% of the population lives below the poverty level,¹⁷ pay to avoid the adverse health effects when drinking water in domestic wells is up to 10 times higher than safe levels.

Each family is a system unto itself, and these small systems pay a high price when a child is born with a major deformity, or the wage earner for the family dies an early death. When FOTC asked the LYV GWMA leadership to conduct a health assessment in 2012 we were told that the GWMA would restore safe nitrate levels to the LYV aquifers. This would solve the problem, so a health assessment was unnecessary. Today the aquifers are even more polluted, and no one has studied connections to public health.

Plastics used for delivery of bottled water wreak havoc with the environment.¹⁸

- The entire life cycle of bottled water uses fossil fuels, contributes to global warming, and causes pollution.
- More than 17 million barrels of oil are required to produce enough plastic water bottles to meet America's annual demand for bottled water.
- "According to the Container Recycling Institute, 86 percent of plastic water bottles used in the United States become garbage or litter."

Atmospheric Deposition

According to the Inventory of U.S. Greenhouse Gases and Sinks 1990 – 2019 (page 5-3) emissions from enteric fermentation and manure management have increased over the past 20 years, and agriculture accounts for about 10% of greenhouse gases in the U.S.

According to the Washington State Greenhouse Gas Emissions Inventory: 1990-2018 (page 22) agriculture accounts for 6.7% of greenhouse gas emissions in our state, and emissions from manure management have increased over the past 20 years.

Ecology estimated in 2017 that 28% of atmospheric ammonia in our state, or 20,436 tons out of a total of 71,922 tons, came from livestock.

To the best of our knowledge Ecology has not approved a model for atmospheric deposition of reactive nitrogen.

Ecology and “Sister Agency” WSDA Could and Should Do A Better Job Of Evaluating CAFOs in Particular and the Environment As A Whole

Ecology has never developed models to analyze potential differences in water pollution, emissions of greenhouse gases, or cost of production when large CAFO dairies are concentrated in small areas compared to a state in which smaller dairies are more evenly distributed across the landscape.

WSDA and DOH have never fully evaluated the economic impact of bacterial pollution on shellfish. WSDA has never fully evaluated the impact of disease from CAFOs on people, on wildlife, and on other farm animals.

In 2003 when the legislature took monitoring of dairies away from Ecology and awarded that job to WSDA the number of dairy inspectors dropped from 7 to 2 ½.¹⁹ By 2005 the number of permitted CAFO dairies had dropped from 100 to less than 25. There is only one dairy inspector for all of Eastern Washington, a likely example of environmental injustice.

None of the WA State agencies quantify the health impacts from CAFOs or the amount of water and air pollution from these facilities.

Both WSDA and Ecology convene work groups to study issues such as pollution from CAFOs and Non-Point Source pollution. These work groups are not open to the public. Presumably the work group products will be delivered to the public some time in the future, and we will be asked to give our stamp of approval with little background information and little time to evaluate impacts.

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Attachment A: *DNMP – Implementation Progression (Timelines)* from a WSDA presentation to the LYV GWMA Regulatory Framework Group.

1998 Act establishing program requiring nutrient management plans to be developed, approved and certified, establishing NRCS practice standards as the default technical standards and requiring inspections. Compliance is performance based so field enforcement is tied to having a discharge.

1998-99 Conservation Commission established 20 minimum elements required for the plans to be approved. Elements included both infrastructure and management elements to protect both surface and groundwater.

1999- July 2002 CD and NRCS: Plan development and approval required

- Infrastructure investment by state and NRCS: State funding provided to conservation districts to develop the plans and for cost share to dairies to implement the plans. Implementation included construction or improvements of infrastructure for manure collection and storage in lagoons, concrete pads and curbing to contain contaminated water, gutters and downspouts to keep clean water clean, pumps and irrigation equipment.
- Planning and various calculations were done to balance and properly manage nutrient storage capacity and proper applications on land managed by the dairies. Generally, implementation of agronomic management practices was postponed while focus was on getting infrastructure in place.

1998-July 2002 Ecology inspections, compliance and CAFO permit

- Up to 7 inspectors located in Yakima, Lacey, Bellevue and Bellingham spent some part of their time on systematic inspections of dairies, identifying and documenting surface water quality issues from facilities and fields.
- Close to 100 dairies had documented discharges and were put under the Dairy General CAFO permit which required full implementation of their dairy nutrient management plan.
- As infrastructure improvements were constructed and most plans were completed.

July 2002-Dec. 2003 Plan certification (implementation) required

- Implementation requires ongoing facility management and agronomic applications. Districts and NRCS continued with infrastructure improvements and worked to some extent with operators on soil and manure testing, cropping, application methods and timing to ensure agronomic applications.
- Compliance continued to focus on surface water impacts.
- Ecology tracked plan approvals and certification.

July 2003

- Program shifted to WSDA with half the inspection resources (2 ½ inspectors).
- Initial program organization was slow but in place by spring 2004 and fully functional by July 2004. o WSDA led meetings and discussions of the Development and Oversight Committee (DOC) and subcommittees on state livestock and CAFO program elements, including compliance with water quality standards surface and ground, technical standards and regulatory requirements to meet EPA delegation requirements.

2004 WSDA implementation

- WSDA staff looked closely at records and discussed with operators the need to keep and use them. Inspectors identified need for operators to have good direction on soil and manure testing. They noted informally that maybe only 15% were keeping and using records to manage agronomic applications.
- Program determined that 2 ½ inspectors was insufficient to cover all of Puget Sound and Whatcom. Consequently staff coordinated with industry leaders and other stakeholders in order to get funding for additional Puget Sound inspector.
 - o Ecology begins new CAFO permit development and includes groundwater monitoring, Ecology negotiated with stakeholders to drop monitoring wells from the permit, to include an element focused on lagoons for potential leaking and to increase emphasis on records under the permit. Ecology agreed to put more emphasis on groundwater in Whatcom and Yakima.
 - o DOC meetings continued and draft legislation was developed expanding dairy act to all livestock Animal Feeding Operations, outlining CAFO program to be consistent with federal program and incorporating necessary authority for WSDA.

2005 WSDA program development

- Developed fact sheet for operators on soil and manure testing in cooperation with other technical staff from WSU, Ecology, NRCS and CDs.
- Program implementation issues raised by inspectors:
 1. Some plans were not very detailed, difficult for operators to use or did not seem to adequately address WQ issues at operations. Discussions with operators and CD planners did result in some improvements.
 2. Identified state limitation to require ongoing DNMP implementation once certification was achieved, and need to update plans as operations changed. Determined state did not have authority to write rules to improve situation.
 3. Lagoon management issues resulted in ‘emergency’ need for winter applications to protect integrity of lagoons.

4. 3rd party applicators noted as not getting the same message on agronomic applications and field conditions. Did some communication with them on a case by case basis.

5. Lack of authority to gain access to a dairy site if access was denied

- Fall 2005 – Lagoon sweeps started this and every fall to check lagoon management and capacity going into winter, primarily in North Puget Sound counties.
- Groundwater nitrate issues in Lower Yakima were raised through complaints on condition of some private wells. WSDA organized some meetings among Ecology, WSDA and local Health with minimal outcomes for homeowner involved. o DOC legislative compromise negotiated out but smaller targeted bill was passed
 - o EPA CAFO rule court decision limited permits to facilities with actual discharges

2006 Expanded technical assistance role

- Initiated ‘Inter-agency Livestock Technical Assistance Committee’ with cross agency representation. Over two years group assisted Ecology in identifying process to evaluate CAFO lagoons for possible leakage, developed a Technical Assistance Referral process and form for WSDA to use with Conservation Districts and further discussed soil and manure testing and use of data to make management decisions on crop applications.
- Soil test data use: Due to variability in soil testing results, determination was to look at data from at least 3 years to get sense of trend. Soil test trigger numbers were set at: 45ppm N as needing attention to reduce levels, used 30 ppm as a level of concern; 100 ppm P for Eastern WA and 120ppm P for Western WA as the level requiring attention. These levels became regular part of inspection discussions when records were reviewed. 15 o Expanded DOC discussed state livestock program and WSDA delegation in terms of the federal court decision. After starting all over with a new statute, decision was made to go forward with a split state program that had Ecology responsible for the permit and non-dairy AFOs and WSDA responsible for the dairy program

2007 Staff noted seeing soil N and P levels dropping at some sites, comments made by some dairy operators that they realized they did not need to buy any or as much fertilizer

2008

- After a series of compliance actions related to poor management of silage, staff worked with other partners to develop a fact sheet on the WQ impacts of silage leachate and better management.
- Discussed with dairy industry the need for record keeping in order to ensure operators have the tools to make agronomic applications.

- WSDA began discussions with Ecology on updating the MOU o Oct 2008 Yakima Herald series on groundwater prompted new discussions with dairy industry on groundwater protection and importance of records and agronomic applications o DOC sunset

2009

- Legislation passed amending statute to establish warrant authority to access dairies and all records and making it a violation of the statute to not keep records required to show agronomic applications.
- Fact sheet on new records requirement developed and mailed to all dairies.
- WSDA held livestock stakeholder meeting with some discussion regarding implementation of the split livestock program.
- New MOU with Ecology was finally completed and signed
- WSDA began developing records rule to define required records and establish a penalty matrix and worked with local state and federal technical staff on language and approach.
 - o Meetings among state and local agencies and public held discussing the groundwater issues in Lower Yakima Valley.
 - o WSDA volunteered to pull together initial overview of what was then known about the valley ground water and uses.
 - o 3 years of annual reports from permitted CAFOs confirmed there were high nitrate levels at some dairy facilities
 - o Ecology initiated effort to move dairy program back to Ecology (Natural Resource Reset)
- Changed program name from ‘Livestock Nutrient’ to ‘Dairy Nutrient’ to reflect statutory program focus on dairies
- Range rules to be used during public disclosure process were finalized and adopted as required by RCWs 43.17, 42.56, and 34.05. 2010 Program constraints, compliance issues and best management practices
- A summary of statutory constraints on program effectiveness was developed in preparation for legislative discussions
- Legislation amended statute to establish penalty for records violation and the Natural Resources Reset effort to move the program was dropped
- As a part of cross agency discussions regarding the dairy program and possible improvements, program enforcement actions were analyzed. Nine main categories of compliance issues were identified. Four related to field applications three related to

facility infrastructure, one for animal access to surface water and one for problems with nutrient management plan. Applications made with improper field conditions were the single most common problem.

- After a series of compliance actions related to improperly managed filter strips, staff worked with other agency technical staff to develop a fact sheet on proper conditions and use to be effective for both surface and ground water protection.
- Worked with Ecology and NRCS on Bartelheimer lagoon failure in Snohomish Co.
- Worked with stakeholders on Samish River Watershed bacteria issues.
- Participated in various discussions regarding Best Management Practices to protect water quality triggered in part by Ecology's riparian manual
 - o Ecology issued compliance order to several permitted dairies with high nitrates
 - o Puget Sound funding by EPA to address nutrients and bacteria among other items – discussion among agencies on nutrient management
 - o EPA carried out extensive groundwater and source sampling as part of effort to better inform groundwater protection efforts in Lower Yakima Valley

2011

- Expanded activity in Samish Watershed to include some non-dairy work to support Ecology and County in response to Governor's directive to make better progress.
- WSDA coordinated with Ecology on review of NRCS lagoon assessment tool developed partly in response to Bartelheimer failure and partly due to aging of early lagoons. Later signed a grant contract with NRCS to use the tool to do lagoon assessments in Puget Sound. Assessment discussions included concerns over difficulty to evaluate groundwater impact of existing structures.
- Completed draft records and penalty rule revised after input from technical and dairy stakeholders but held back to resolve certain issues with Ecology regarding the penalty matrix
 - o 3DT talks rise out of BMP discussions, coordination opportunities regarding Samish work, MOA development between Skagit CD and Ecology and communication issues around the Ecology and WSDA MOU

2012 Lagoon assessment focus

- Mar- Dec – Lagoon assessments conducted in North Puget Sound counties to field test lagoon assessment process for NRCS

- Sep-Dec - 3DT committee work to evaluate the technical and policy gaps to prevent negative impacts from land applications of manure (WSCC, ECY, WSDA) o Oct – WAC 16-611 Nutrient Management finalized