Comment Letter

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JR Simplot and Simplot Livestock Violations of State and Federal Laws

Introduction

I, David J. Erickson, have worked in the Hydrogeology/Geology field for 35 years. I am currently the Principal/Founder of Water & Environmental Technologies (WET) in Butte, Montana. I previously served as President of WET for 20 years. I am a registered Professional Geologist in Utah and Wyoming and a Certified Professional Geologist with the American Institute of Professional Geologists.

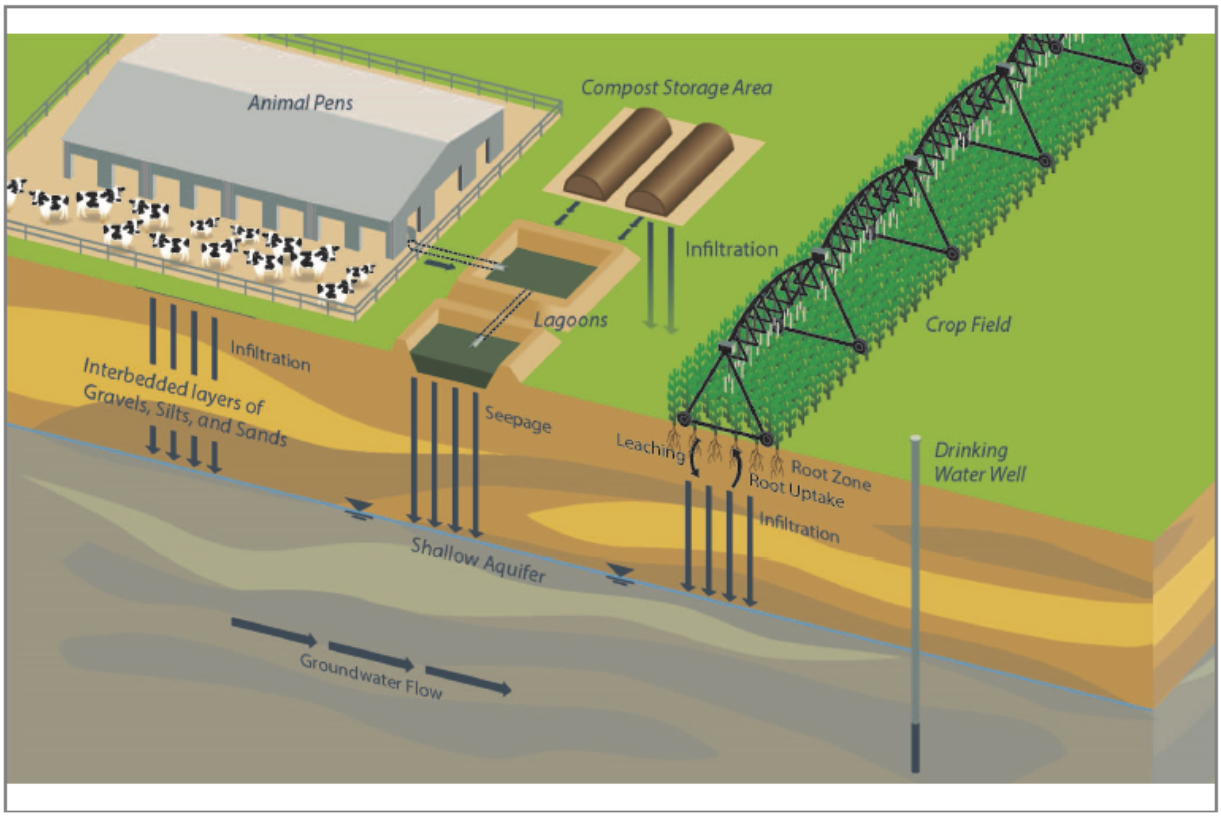
I started working on Concentrated Animal Feeding Operations (CAFOs) in 2013 in the Yakima, Washington, area and currently work in several States investigating, characterizing and remediating the impacts to ground water, soil and surface water from these facilities. The principles, pathways and science behind the discharge of pollution by CAFOs is both simple and proven throughout industry. To summarize:

- Lagoons leak and seep. Darcy's law and the permissive permit ensures seepage from the lagoons is significant and ongoing
- Manure applications to fields is both imprecise and often overapplied, intentionally and unintentionally. Monitoring and record keeping allows this contamination to occur.
- Seepage and leaching from both sources impacts ground water quality.
- CAFO contaminated ground water flows toward and causes detrimental impacts to surface water.
- Other sources, such as leaking underground piping, compost areas, cattle pens, and runoff are potential sources of contamination.
- Runoff and leaching from all areas of the operation are a significant threat to human health and the environment.

The following conceptual model, adopted by EPA Region 10 for the Yakima, Washington, area, provides an illustration of contaminant sources from a CAFO facility. After completing an environmental investigation of more than 30 of these facilities, the sources in order of contributing contamination to the subsurface and ground water, can be ranked as follows:

#1 Seepage from lagoons and containment facilities.
#2 Overapplication of manure to the crop fields.
#3 Compost and silage areas leaching into ground water.
#4 Storm water runoff.
#5 Underground piping and conveyance structures like tile drains.
#6 Cattle containment pens and related water management & handling

Lagoon seepage and overapplication of manure to fields are usually the major sources at most CAFOs and the largest contributor varies from #1 to #2 depending on site specific conditions such as soil type under the lagoon and operator expertise at manure characterization and application.



Overapplication of Manure – Magnified Environmental Risks

Overapplication of manure to crop fields is one of the top two sources of contamination from CAFO operations, rivaling lagoon seepage in magnitude. Overapplication often occurs due to inaccurate nutrient assessments, operational shortcuts, or intentional disposal of excess waste.

When manure application exceeds agronomic rates, the surplus nitrogen—particularly in the form of nitrate—readily leaches through soils into groundwater. Nitrate is highly mobile, not binding to soil particles, and thus quickly migrates through the aquifer to drinking water wells or surface water. This results in the creation of large contamination plumes capable of traveling miles beyond the source area, as demonstrated in documented cases from Wisconsin, Washington, and California. Such plumes can impact private wells, public water supplies, and surface waters at concentrations well above EPA Maximum Contaminant Levels.

In rural areas where residents depend on shallow groundwater wells, overapplication creates a persistent and escalating risk of nitrate exposure. The cumulative effect is compounded when multiple CAFOs operate within the same watershed or anywhere where extremely large CAFO's

operate, generating overlapping nutrient loads that intensify groundwater contamination over time.

The overapplication also results in high phosphorous concentrations in the shallow soil. Runoff from precipitation events or snowmelt mobilizes these phosphorous laden soil particles into surface water adding a reservoir of phosphorous in stream sediments.

Obviously, the Simplot facility overapplied manure during the operation and these applications require the State of Idaho to enforce the pertinent regulations. Fines and strict oversight of future operations are the only method to ensure compliance with State regulations.

Importance of Accurate Application Records – Accountability & Prevention

Accurate, verifiable nutrient application records are critical for preventing overapplication and demonstrating compliance with environmental protection standards. These records should include:

- Detailed manure nutrient analyses prior to land application.
- Field-specific soil nutrient levels prior to application and in the fall .
- Crop specific uptake capacities.
- Exact application volumes, timing, and methods.
- Accurate record maintained for each application field on the property.
- Accurate application records for non-owned properties or manure hauled off the site.

Without precise and honest recordkeeping, it is impossible to confirm that nutrient applications remain within agronomic limits. This lack of documentation undermines regulatory oversight and allows harmful practices to go undetected until contamination has already occurred. By then, remediation of impacts to drinking water or surface water are expensive and time consuming activities.

The report's findings indicate that routine monitoring alone cannot detect field-level overapplication in real time. By the time nitrate or other contaminants appear in downgradient wells, the environmental damage is already significant and remediation is costly and required decades. Therefore, robust recordkeeping—verified through audits—is an essential preventive measure.

Imminent and Substantial Endangerment to Human Health and the Environment

The combination of lagoon seepage and overapplication of manure creates a complete contaminant pathway from source to receptor. The contaminants—nitrate, pathogens, antibiotics, hormones, and other pollutants—are well-documented threats:

1. **Human Health Impacts**: Nitrate contamination in drinking water causes methemoglobinemia ("blue baby syndrome"), increases risk for certain cancers, and contributes to thyroid disorders. Antibiotics and hormones act as endocrine disruptors, impacting reproductive and developmental health.

2. **Environmental Impacts:** Nutrient loading degrades surface water quality, leading to eutrophication, algal blooms, fish kills, and long-term ecosystem imbalance. The presence of pharmaceuticals and hormones disrupts aquatic species' reproductive cycles and food webs.

Given nitrate's conservative nature and the documented migration distances far exceeding regulatory setbacks, current management practices—particularly without stringent controls on manure application—pose an ongoing, imminent, and substantial endangerment to both human populations and aquatic ecosystems.

Conclusion

The evidence in this report supports the conclusion that overapplication of manure and inadequate recordkeeping are not minor compliance issues—they are central drivers of large-scale, persistent contamination. Without enforceable requirements for precise nutrient application tracking and verification, CAFO operations will continue to cause pollution plumes that threaten drinking water supplies, surface waters, and the health of communities and ecosystems for years to come.

Multiple State and Federal regulations are violated due to the overapplication and sources of drinking water are contaminated above drinking water standards. **Attachment A** summarizes laws and regulations that are violated by these activities.

The following report presents a detailed technical analysis, supporting evidence, and expert findings that substantiate and expand upon the concerns outlined in the preceding supplemental review.

Opinions specific to the Simplot Facility

- **The construction and pollution management requirements in the Permit are not sufficient to prevent or detect discharges from CAFO production areas to surface water through ground water.**

The water cycle is well documented and well understood throughout the world. Ground water almost always flows toward a surface water body, whether it be a stream, lake or the ocean. Many States have recognized this interconnection and limit ground water rights because it depletes surface water volumes.

Starting with the lagoon permeability allowance that is deemed protective by the State of Colorado, a simple analysis using Darcy's Law proves this position false. Darcy's Law is used to calculate the water movement through soil of a specific permeability. It is expressed as:

Q=Kia

Where:

Q= water flow (gallons)
K = liner permeability (cm/sec)
i = hydraulic gradient through the material (ft/ft)
A = cross sectional area where flow occurs (ft^2).

The table below provides a range of allowed seepage rates and volumes out of a CAFO lagoon that meets the requirements of the Colorado general permit because it does not exceed the permit's maximum seepage rate of 1×10^{-6} cm/sec. Per DNRC guidelines, the majority of lagoons hold approximately 9 feet of liquid manure. Most CAFOs have 2 to10 acres of lagoons, depending on several operational factors. Each 1-acre lagoon on a CAFO releases up to 3,000,000 gallons of contaminated seepage per year or 8,313 gallons per day to the subsurface, clearly neither insignificant nor protective.

The table below uses the CAFO permit's allowed seepage rate times the different gradients based on the liquid level in the lagoon and calculates the seepage rate over a 1-acre lagoon. The highlighted row shows the seepage rate for the common allowed depth of the lagoon of 9 feet. To summarize, the general permit allows 8,313 gallon of seepage per day or over 3,000,000 gallons of seepage per year per acre of CAFO lagoon.

Table 1. Typical Lagoon seepage rates

Permeability		Gradient	Q =Seepage per Acre per Day (Gallons)	Q =Seepage per Acre per Year (Gallons)
K (cm/sec)	K (ft/day)	i (ft/ft)		
1.00E-06	2.84E-03	1	923.7	337,159
		2	1847.4	674,319
		3	2771.2	1,011,478
		4	3694.9	1,348,638
		5	4618.6	1,685,797
		6	5542.3	2,022,957
		7	6466.1	2,360,116
		8	7389.8	2,697,276
		9	**8313.5**	**3,034,435**
		10	9237.2	3,371,595
		11	10161.0	3,708,754
		12	11084.7	4,045,914
		13	12008.4	4,383,073
		14	12932.1	4,720,233
		15	13855.9	5,057,392

Nitrate, the main contaminant from CAFO lagoons, has a very low coefficient of dispersion, which causes nitrate to migrate quickly in the water and not sorb or diffuse into the soil. As a result, nitrate migrates very quickly through ground water and forms large ground water contamination plumes traveling long distances.

CAFOs discharge contaminants from several areas of the operation; however, lagoon seepage and leakage cause large pollutant contamination including nitrate plumes in ground water that have a high likelihood of negatively impacting surface water or ground water users.

The permit should require facilities to have documentation showing certification by a professional engineer that liner permeability requirements are met. Additional language with references to American Society of Testing Materials (ASTM) testing should be included to document that construction quality control and quality assurance (QA/QC) practices that meet ASTM requirements are followed. In the past, lagoon certifications have been completed by professional engineers with one compaction test to certify the lagoon meets permeability requirements. In Yakima, out of the 40 or more lagoons on the Dairy Cluster, there was one test of one lagoon without any further construction QA. Additional ASTM guidelines are required to ensure lagoons meet the requirements of the regulation.

Additionally, construction requirements do not substitute for a leak detection system. Construction issues or mistakes result in leaks and, without a monitoring system, the operator does not know if

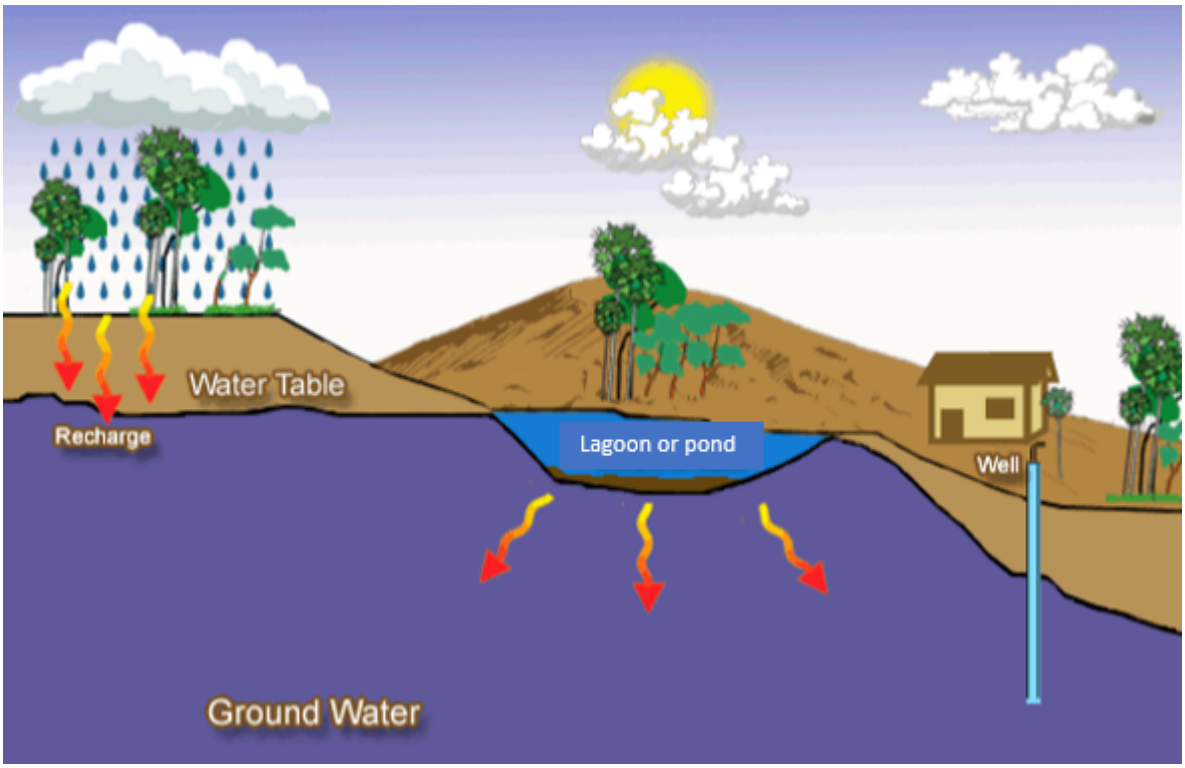
there is an impact to ground water or surface water without routine monitoring. Routine monitoring can be a set of monitoring wells downgradient of the system or a designed leak detection sump. These systems must be sampled on a routine basis to establish background conditions and sampled for the correct analytes to identify a wastewater release.

The permit must also require weekly visual inspections and routine cleaning. I have reviewed years of inspection data forms for lagoons in several States --- an inspector cannot visually see a leak below the liquid. The liquid is opaque and the leak rate would have to be catastrophic to be visible. As a result, these inspections are not effective in determining if a lagoon is leaking or seeping.

Also, the routine cleaning of manure solids results in excavation, erosion and liner damage over the life of the lagoon. A lagoon that meets a permit requirement most likely will fail the requirements after the first cleaning. Erosion of an earthen liner at the inlet is well documented and causes a liner breach resulting in a much higher leak rate than is documented above.

- **The liquid manure waste stored in the CAFO lagoons has a mix of contaminants that can cause impacts to human health and the environment. Pollution from CAFO wastewater harms the environment and endangers public health.**

In addition to nitrate contamination from the lagoon, we have detected fecal coliform, hormones, bovine antibiotics, growth hormones, phosphorus, and chloride in the seepage and in the ground water. These are all problematic contaminants in the environment; however, nitrate and chloride are the most mobile contaminants since they do not sorb to soil. These contaminants have known and recognized health effects to humans. Nitrate causes blue baby syndrome and other health effects, while the pharmaceuticals are known endocrine disrupters.



The following table provides average concentration in the CAFO wastewater from the Yakima Valley sampling conducted by the EPA and WET.

Table 2. Contaminant concentrations in CAFO Wastewater

pH	TDS	Chloride	Ammonia	TKN	Phosphorus	Calcium	Potassium
s.u.	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
7.6	3100	230	330	1600	358	122	80

CAFO discharges have multiple contaminants that have known and recognized human health and environmental impacts.

The following list is directly from an EPA study of the Dairy Cluster in Yakima, Washington. These compounds have been detected in the drinking water aquifer and are a result of leaking lagoons and overapplication of Dairy wastewater.

Table 3. Contaminants found in CAFO Lagoons and Drinking Water Wells, Yakima Washington

Nutrients & Minerals	Antibiotics
Nitrate	Tylosin
Nitrite	Enthromycin
Ammonia	Lincomycin
TKN	Sulfamethazine
Chloride	Tiamulin

	Virginiamycin Monensin Chlortetracycline Tetracycline
Hormones	**Pesticides & Herbicides**
Estradiol Androsterone Testosterone 7-a-estradiol Androstadienedione 17- β-trenbolone Epitestosterone	Atrazine Alachlor DEHP DEET Bentazon

These compounds are all linked to animal wastes and fall into the general categories of nutrients, antibiotics, and growth hormones. All compounds were detected in both the dairy lagoons and in the drinking water aquifer serving hundreds, if not thousands, of residents in the Lower Yakima valley.

- **Pollution from CAFO impoundments can reach surface water through ground water due to the hydrological connection between surface water and ground water.**

Based on years of performing remedial investigations at industrial facilities and over a decade of investigating CAFOs, the contaminant migration pathway from the source to ground water beneath the facility, with migration to or toward surface water is almost always complete. It is a natural part of the water cycle. While dilution changes the discharge concentration, the migration pathway is easily characterized using standard ground water investigation techniques. The disturbing data from these facilities is that the nearby neighbors' drinking water well can be as high as 200 ppm nitrate and have a mix of bacteria and other contaminants, described below, from manure waste.

Since nitrate is very conservative, as discussed above, ground water plumes from CAFO operations have been documented to travel several miles. An investigation I completed in Wisconsin showed the nitrate traveling in ground water over two miles from the Dairy and impacting Lake Petenwell with concentration above drinking water standards in many of the private drinking water wells along the flowpath. In Washington, hundreds of private water supply wells over a mile downgradient from the CAFO facility are contaminated above drinking water standards. Similarly in California, nitrate has migrated over 2 miles downgradient. Nitrate, the primary contaminant from CAFO waste, moves unattenuated with ground water, migrating to the next receptor, ground water withdrawal, or nearby surface water discharge.

Since the Wisconsin site was a detailed investigation, cross sections of the site are attached for reference as Exhibit C. These cross sections and data clearly show impacts from a leaking concrete

lined manure lagoon and impacts from overapplication of both manure and chemical fertilizer to the application field. They also show a complete contaminant pathway to human exposure and discharge to surface water. Both the mobility of nitrate, the primary contaminant, and the size and volume of the sources, easily cause plumes to migrate more than 300'. The Wisconsin site has nitrate migration in excess of 8000 feet in ground water.

The Simplot Facility was sited in a large alluvial valley where there is abundant ground water, drainage ditches that transmit water directly to the Snake River and large areas favorable for agriculture. These alluvial aquifers are permeable with relatively shallow water tables and fertile soils for crop growth. The areas around the CAFOs are generally rural, relying on ground water wells for drinking water supply.

Due to low precipitation, this facility is an open pen facility that generates large amounts of stormwater runoff, pen scrapings and solid manure. Application of solid manure at agronomic rates always apply at 100% of the agronomic rate even as residual nutrients build up in the soil and always ignore the degradation of organic nitrogen as the solid portion of the manure degrades to nitrate over a several year period. This oversight guarantees overapplication and compounding impacts as the facility has operated for many years. At facility after facility, the application of manure causes ground water contamination and storm events result in mobilization of manure and soil to surface water.

- **The operation of multiple CAFOs or very large CAFOs in one concentrated area aggravates the impact of CAFO pollution on water quality.**

Several States recognize cumulative effects from multiple facilities that discharge pollutants. This was especially evident in the Dairy Cluster Investigation completed by the EPA in the Yakima Valley (Lower Yakima Valley Groundwater | US EPA). The dairy cluster investigation identified leaking lagoons, overapplication in the fields and a general nitrate plume increasing from no detect to over 200 ppm nitrate in ground water. It also identified contamination of private drinking water supply wells above EPA Maximum Contaminant Levels (MCL) above which health effects are known and recognized in humans.

The increasing trend in nitrates along ground water flow direction are a direct result of cumulative effects from the multiple sources of soil and water contamination at the CAFO. In many investigations, the application fields are the major contributor to cumulative effects since they represent a constant nutrient load over each application field. The constant flux of nutrients from multiple sources at a single CAFO to ground water results in increasing concentrations along the ground water flowpath. Multiple CAFOs in the same area only increase the number of contaminant sources and result in increasing contaminant concentration along the ground water flowpath.

Some agencies falsely state that this is common agricultural contamination and very little can be done, however, this is actually poor regulation and poor management of manure handling

operations. It is now documented and recognized across the United States and the impacts to nearby residence are significant.

CAFO waste represents a highly mobile mixture of contaminants with known and recognized detrimental effects on human health and the environment, typically placed in an area with many human and environmental receptors.

Dated September 15, 2025.

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David J. Erickson

Attachment A – Applicable Idaho and Federal Regulations Violated by Overapplication or Discharge of CAFO Manure

This appendix summarizes the **Idaho** and **Federal** regulations that can be violated when a Concentrated Animal Feeding Operation (CAFO) overapplies manure or discharges manure-contaminated wastewater, resulting in **ground water** or **surface water** contamination. Each citation is linked to its source regulation.

Table A-1 – Summary of Applicable Regulations and Violations

Topic	Regulation / Statute	Key Requirements	Violation from Overapplication / Discharge
Unpermitted Discharge	CWA §301(a), 33 U.S.C. §1311	Prohibits pollutant discharges to waters of the U.S. without a permit.	Manure-contaminated runoff or seepage enters surface waters without NPDES/IPDES coverage.
CAFO Permit Requirement	40 CFR 122.23(d)	CAFOs must not discharge unless authorized by a permit.	Release from production area or fields without authorization.
Land-Application Discharges	40 CFR 122.23(e)	Only exempt as "agricultural stormwater" if manure applied per a compliant NMP with proper records.	Overapplication or poor records void stormwater exemption, making runoff an unpermitted discharge.
Nutrient Management Plan (NMP)	40 CFR 122.42(e)	Requires NMP elements: storage, testing, application rates, and recordkeeping.	Application above NMP rates or missing records is a permit violation.
CAFO Effluent Limits & BMPs	40 CFR Part 412	No discharge from production areas (with exceptions); BMPs for land application to prevent runoff.	Lagoon overflow or runoff from fields violates effluent guidelines.
Surface Water – Bacteria	IDAPA 58.01.02.251	E. coli: GM 126/100 mL; STV 410/100 mL for recreation uses.	Manure bacteria cause exceedances downstream.
Surface Water – Nutrients & Narrative Criteria	IDAPA 58.01.02	Prevent nuisance aquatic growths, protect beneficial uses.	Nutrient runoff triggers algal blooms or aquatic life impairment.
IPDES Program (Idaho NPDES)	IDAPA 58.01.25	Idaho implements NPDES-equivalent permits.	Discharges without IPDES coverage or in violation of permit terms.
Ground Water Quality	IDAPA 58.01.11	Sets GW standards (e.g., nitrate-N = 10 mg/L).	Overapplication or leakage elevates nitrate above standard.
Beef CAFO Rule – Discharges & NMP	IDAPA 02.04.15	Prohibits unauthorized discharges; requires approved NMP and notification of discharges.	Runoff or seepage reaches waters of the state, or failure to implement NMP.

Topic	Regulation / Statute	Key Requirements	Violation from Overapplication / Discharge
Beef CAFO – Storage Requirements	IDAPA 02.04.15.020	≥120 days manure storage, proper design/operation.	Insufficient storage leads to winter application or overflow.
Dairy Environmental Controls	Idaho Code §37-606, §37-608; IDAPA 02.04.14	Requires approved environmental plans; prohibits unauthorized discharges.	Overapplication or lagoon leaks violate plan and statute.
CWA via Groundwater	County of Maui v. Hawaii Wildlife Fund	Permit required if pollutant reaches WOTUS via groundwater as functional equivalent of direct discharge.	Lagoon seepage or overapplication quickly reaches surface waters.
RCRA – Open Dumping	42 U.S.C. §6945; 40 CFR Part 257	Prohibits open dumping of solid waste.	Chronic overapplication or leaking storages can be "discarded" manure, causing open dumping & endangerment.

Key Compliance Risks

- **Loss of Agricultural Stormwater Exemption:** Exceeding crop needs or missing application records transforms land-applied manure into a regulated discharge.
- **Recordkeeping Failures:** Missing soil/manure tests, rate logs, or field maps can independently violate permit conditions and remove legal protections.
- **Groundwater Impacts:** Nitrate is highly mobile; contamination above 10 mg/L nitrate-N violates Idaho's GW Quality Rule and can support RCRA imminent endangerment claims.