

October 18, 2022

Kelli Book
Iowa Department of Natural Resources
502 East 9th Street
Des Moines, IA 50319-0034

Dear Ms. Book:

The undersigned Environmental Organizations offer the following comments on the draft rules regulating animal feeding operations.

The undersigned organizations have worked to improve water quality in Iowa for decades. These range from the Iowa Environmental Council (IEC), an alliance of more than 100 organizations, to locally-led grassroots groups that are focused on protecting their health and nearby natural resources. Members of our organizations hike, fish, paddle, swim, and recreate in and around lakes, rivers, and streams throughout the state. And like other Iowans, our members rely on the State of Iowa to provide access to safe, clean drinking water.

While we support the consolidation and simplification of the existing rules, we are concerned that the rules DNR has proposed would not protect water quality from continued pollution because they do not address the fundamental manure management problems that are causing water pollution today. DNR has and must use statutory authority to protect water for drinking, recreation, and aquatic life. We focus our comments on three areas:

- issues raised in two rulemaking petitions filed by IEC and the Environmental Law & Policy Center (ELPC);
- manure management requirements and enforcement;
- construction requirements that do not adequately protect water quality; and
- ensuring public process and transparency.

These comments recommend rule language that would improve water quality protections. We also identify changes proposed in the draft rules that we support.

We encourage DNR to adopt all these changes to improve the implementation of the rules and fulfill DNR's statutory obligations.

Sincerely,

100 Grannies for a Livable Future

Allamakee County Protectors - Education Campaign

Des Moines County Farmers and Neighbors for Optimal Health

Environmental Law & Policy Center

Food & Water Watch

Henry County Farmers and Neighbors

Iowa Alliance for Responsible Agriculture

Iowa Citizen Action Network

Iowa Citizens for Community Improvement

Iowa Environmental Council

Jefferson County Farmers & Neighbors, Inc.

Poweshiek CARES

SILT (Sustainable Iowa Land Trust)

Socially Responsible Agriculture Project

Southern Boone County Neighbors

Table of Contents

I. Massive Volumes of Livestock Waste Are Polluting Iowa’s Surface and Ground Water.....	5
II. Legal Authority for Rule Making.....	7
III. Issues Raised in Petitions for Rule Making.....	7
A. Proposed Karst Protections in Section 65.7 Are Inadequate.	8
1. Risks of Constructing on Karst	8
2. Soil Borings and Soil Reports	10
3. Removal of Bedrock.....	12
4. Vertical Separation Requirements.....	13
B. DNR Should Not Delete the Departmental Evaluation Rule in Sections 65.3 and 65.201.....	15
C. DNR Inappropriately Reduced Monitoring Requirements in Section 65.109.....	17
D. DNR Must Adopt the Floodplain Map as Proposed in Section 65.9.....	20
IV. Manure Management Changes Necessary to Protect Water Quality.....	21
A. Background.....	22
B. MMP and NMP Contents in 65.112 and 65.208(8) Must Expand to Protect Water Quality.....	22
1. Nutrient Concentrations in Manure and Process Wastewater.....	23
2. Manure Application Rate Calculations	24
3. Phosphorus Index Calculations	26
4. Approval Criteria.....	26
C. DNR Should Require Online Submission of MMPs and NMPs in Sections 65.111 and 65.208.....	27
D. Exemptions to Manure Application Separation Distances in sections 65.107 and 65.108 Undermine the Purpose of the Rules.	30
E. Confinement Land Application Requirements in Section 65.101 Must Reflect Actual Crop Needs.....	31
F. Use of Manure as a Soil Conditioner.....	32
G. NPDES Permitting Requirements in Sections 65.3 and 65.202 Must Prevent Exceedances of Water Quality Standards.....	33
H. Noncompliance and Enforcement Regulations in Sections 65.2 and 65.4 Must Expand to Ensure Compliance.....	35
1. Release Reporting Requirements	35
2. Complaint Investigations and Enforcement	36

V.	DNR Must Adopt Stronger Construction Requirements to Protect Water Quality.....	39
A.	Anaerobic Digester Systems as Defined in Section 65.1 Require Additional Regulation.	39
B.	Construction Permit Triggers in Proposed Section 65.103 and 65.203 Allow Evasion of the Rules.	44
C.	DNR Must Strengthen Storage Design Requirements and Monitoring in Proposed Section 65.109.....	46
VI.	DNR Should Improve Public Process and Transparency	47
A.	DNR Must Close Loopholes in Common Ownership Under Section 65.1 and 65.104 (LLC loophole).	47
B.	DNR Should Clarify Transfer of Title Notification in Section 65.5.....	49
C.	DNR Must Enforce Master Matrix Obligations in Section 65.106.	49
D.	DNR Should Ensure Adequate Public Notice of NMPs in Section 65.208(7).	50
VII.	Conclusion	50
	Appendix A. Supreme Beef Soil Borings	52
	Appendix B. Requested Changes to Rules	53

I. Massive Volumes of Livestock Waste Are Polluting Iowa’s Surface and Ground Water

The number of animal feeding operations in Iowa has grown significantly over the last 30 years. Most of the growth has been in the form of large concentrated animal feeding operations, primarily hog and hen confinements. In 1990, Iowa had 789 large CAFOs.¹ By 2019, the number of large CAFOs quintupled to 3,963, and has continued to grow since 2019.² The total number of animal feeding operations in the state is far larger, including 2,500 facilities that are slightly below the “large CAFO” threshold to avoid regulation, plus thousands of smaller operations.³

The growth in the number and size of CAFOs has increased the quantity of manure, urine, and process wastewater generated and contributed to water pollution. Iowa’s Nutrient Reduction Strategy calculated that 92 percent of nitrogen and 80 percent of phosphorus in surface water comes from nonpoint sources – primarily agriculture.⁴ The amount of livestock manure Iowa now generates is equal to the waste produced by 168 million people, or half the entire U.S. population.⁵ Most of this manure is not treated before being applied to cropland, ostensibly to fertilize crops. But manure also runs off the fields in stormwater, infiltrates soil and pollutes groundwater, or reaches surface waters via tile drainage. The high volume of manure produced in Iowa often leads to manure application at rates exceeding crop needs (especially in light of continued application of commercial fertilizer).⁶ This excess manure application leads to nitrate and phosphorus pollution. Releases of manure from storage structures, as well as transportation and land-application equipment, have regularly caused water pollution and fish kills across the state. Properly controlling manure storage and application through this rulemaking will address a substantial source of pollution.

Excess nitrate in sensitive areas increases the risk that nitrate enters groundwater or drinking water sources. Nitrate in drinking water poses such serious human health threats that the Safe Drinking Water Act requires nitrate concentrations in public water supplies to stay below 10 mg/L.⁷ Nitrate in drinking water can cause blue-baby syndrome, birth defects, bladder cancer, thyroid cancer, and

¹ Jamie Konopacky and Soren Rundquist, “EWG Study and Mapping Show Large CAFOs in Iowa Up Fivefold Since 1990,” Environmental Working Group, Jan. 21, 2020.

² *Id.*; IEC analysis of DNR AFO database, available at <https://programs.iowadnr.gov/animalfeedingoperations/>.

³ IEC analysis of DNR AFO database, available at <https://programs.iowadnr.gov/animalfeedingoperations/>.

⁴ “Iowa Nutrient Reduction Strategy – A science and technology-based framework to assess and reduce nutrients to Iowa waters and the Gulf of Mexico.” Updated December 2017. Section 1.2 at 8.

⁵ Chris Jones, “50 Shades of Brown,” June 6, 2019, available at <https://www2.iuhr.uiowa.edu/cjones/50-shades-of-brown/>.

⁶ Chris Jones, “Make America MRTN Again,” June 21, 2019, available at <https://www2.iuhr.uiowa.edu/cjones/make-america-mrtn-again> (showing that manure produced in some Iowa counties meets or exceeds crop needs for phosphorus and nitrogen, despite continued sales of commercial fertilizer).

⁷ 40 C.F.R. § 141.62.

other cancers.⁸ But even concentrations below the Safe Drinking Water Act standard of 10 mg/L may cause a range of health problems, including cancer.⁹

Additionally, manure runoff from CAFOs into local water sources can promote the growth of harmful algal blooms causing illness in both animals and humans.¹⁰ These adverse health effects to humans include liver damage, neurotoxicity, gastrointestinal problems, and various flu-like reactions. Manure can also contaminate surface water and groundwater with fecal bacteria that can cause gastrointestinal and respiratory illness.¹¹

The cost to remove nitrate and other pollutants attributable to livestock operations from drinking water is astronomical. If the current amount of nitrogen run-off from farm fields and CAFOs continues, Iowans will be responsible for up to \$333 million over the next five years to remove nitrates from drinking water.¹² Removing these nitrates through water treatment, rather than preventing them from entering waters at the source of pollution, is costly and often unaffordable for public water systems and unaffordable for some private well owners.¹³ Rural Iowans can pay as much as \$1,200 per person per year for nitrate treatment of drinking water.¹⁴ Cities struggle to cope with the cost of nitrate removal as well, facing high treatment costs for removal. High concentrations of nitrate have forced cities like Pierson, Iowa, to issue a bottled water advisory.¹⁵

Harmful algal blooms produce toxins and have led Des Moines Water Works to consider spending \$30 million to drill new wells in order to provide safe water to more than 500,000 people.¹⁶ Bacteria contamination is widespread in surface waters around the state, leading to high rates of contamination of private wells. Iowans cannot afford the continued pollution of their groundwater and drinking water sources.

⁸ “Nitrate in Drinking Water: A Public Health Concern For All Iowans,” Iowa Environmental Council (Sept. 2016), available at https://www.iaenvironment.org/webres/File/Nitrate_in_Drinking_Water_Report_ES_Web.pdf (citing Brender, Jean D; Weyer, Peter J; Romitti, Paul A; et al. 2013. Prenatal Nitrate Intake from Drinking Water and Selected Birth Defects in Offspring of Participants in the National Birth Defects Prevention Study. *Environmental Health Perspectives*, Vol. 121(9):1083-1089. <http://ehp.niehs.nih.gov/1206249/>).

⁹ *Id.*

¹⁰ *Id.*

¹¹ “Recreational Water Quality Criteria,” U.S. EPA (2012), at 12, available at <https://www.epa.gov/sites/default/files/2015-10/documents/rwqc2012.pdf>.

¹² “Rural Iowans Bear Brunt of Water Treatment Costs for Nitrate Pollution from Farms and CAFOs.” *Union of Concerned Scientists*, 14 Jan. 2021, www.ucsusa.org/about/news/rural-iowans-bear-brunt-water-treatment-costs-nitrate-pollution-farms-and-cafos.

¹³ *Id.*

¹⁴ *Id.*

¹⁵ “Pierson Iowa Officials Issue Bottled Water Advisory,” KTIV (Sept. 13, 2022), available at <https://www.ktiv.com/2022/09/13/pierson-iowa-officials-issue-bottled-water-advisory/>.

¹⁶ Merchant, James, and David Osterberg. “The Explosion of CAFOs in Iowa and Its Impact on Water Quality and Public Health.” *Iowa Policy Project*, Iowa Policy Project, Jan. 2018, www.iowapolicyproject.org/2018docs/180125-CAFO.pdf.

Rather than continuing to externalize the costs of manure pollution to downstream Iowans, DNR should adopt rules that reduce losses of nitrogen and phosphorus from manure. This rulemaking presents an opportunity to correct a longstanding imbalance between the convenience of livestock operations and the statewide interest in restoring our lakes, rivers, streams, and groundwater.

II. Legal Authority for Rule Making

The Environmental Protection Commission (EPC) is the only commission or department charged with adopting regulations to protect ambient water quality. It has broad statutory authority to “Develop comprehensive plans and programs for the prevention, control and abatement of water pollution.”¹⁷ DNR is charged by law with the responsibility “to prevent, abate, or control water pollution.”¹⁸ DNR recommends rules necessary to implement the programs assigned to the EPC, then implements the rules adopted by the EPC.¹⁹

The EPC is charged with adopting requirements regarding the construction of AFOs. Iowa Code section 459.103(1) states:

The commission shall establish by rule adopted pursuant to chapter 17A, requirements relating to the construction, including expansion, or operation of animal feeding operations, including related animal feeding operation structures. The requirements shall include but are not limited to minimum manure control, the issuance of permits, and departmental investigations, inspections, and testing.

This statute gives the EPC broad authority to regulate AFO siting and construction requirements.²⁰

In adopting rules regulating AFOs, the EPC must ensure that “Manure from an animal feeding operation shall be disposed of in a manner which will not cause surface water or groundwater pollution.”²¹ The rules DNR has proposed do not fulfill those statutory obligations.

III. Issues Raised in Petitions for Rule Making

On August 11, 2021, IEC and ELPC submitted a petition for rulemaking to the Environmental Protection Commission requesting greater protections for karst terrain and drinking water sources from AFO siting, including the ability for the DNR director to individually evaluate environmental concerns. The Environmental Protection Commission voted on February 15, 2022, to deny the petition and adopt DNR’s basis for denial. Part of DNR’s basis for denial was a promise to incorporate karst protections in a broader rule review.

¹⁷ IOWA CODE § 455B.173.

¹⁸ IOWA CODE § 455B.172.

¹⁹ IOWA CODE §§ 455B.103(2); 455B.174.

²⁰ *See also* IOWA CODE § 455B.173(12) (providing the EPC authority to “Adopt, modify, or repeal rules relating to the construction or operation of animal feeding operations, as provided in sections relating to animal feeding operations provided in chapter 459, subchapter III”).

²¹ IOWA CODE § 459.311(3).

IEC and ELPC submitted a second petition in May 2022 requesting adoption of a floodplain map. That petition is still pending and has not been addressed by the EPC.

As described below, the proposed rules would not protect against the water quality problems raised in the first petition for rulemaking. The proposed rules would resolve the second petition for rulemaking.

A. Proposed Karst Protections in Section 65.7 Are Inadequate.

Karst is a landscape formation created by dissolving bedrock that may contain sinkholes, sinking streams, caves, springs, and other features.²² Karst is associated with soluble rock types such as limestone, marble, dolomite, and gypsum.²³ A typical karst landscape forms when much of the water falling on the surface interacts with and enters the subsurface through cracks, fractures, and holes that have been dissolved into the bedrock.²⁴

1. Risks of Constructing on Karst

Iowa Code prohibits unformed concentrated animal feeding operation (CAFO) manure structures above karst terrain.²⁵ Formed concrete structures are allowed with certain protections in place.²⁶

Scholarship on karst shows that there is grave risk in building CAFOs on karst terrain²⁷ and the rules should address that risk. DNR has proposed to modify the definition of what qualifies as “karst terrain” in section 65.1 to delete the 25-foot vertical separation distance to soluble rock in the existing rule. The remaining definition therefore relies on rock that is “characterized by closed depressions, sinkholes, or caves.” This characterization ignores that many areas of karst in Iowa may not have those surface features today. In other words, while a sinkhole is a strong indicator of karst, the absence of a sinkhole does not prove the absence of karst. The key concern is whether karst bedrock poses a threat upon construction of AFO structures, which may not be evident from surface features alone. The revised definition could allow facilities to ignore the requirements in rule for karst terrain because no surface features exist. DNR should retain the existing definition in section 65.1.

The rules should require greater vertical separation distance from karst terrain and the recommendations in existing rules should be transformed into requirements. The petition for

²² NATIONAL PARK SERVICE, *Karst Landscapes*, <https://www.nps.gov/subjects/caves/karst-landscapes.htm> (last visited July 9, 2021).

²³ *Id.*

²⁴ *Id.*

²⁵ IOWA CODE § 459.308(3).

²⁶ IOWA CODE § 459.307(4).

²⁷ See Van Brahana et al., *CAFOs on Karst—Meaningful Data Collection to Adequately Define Environmental Risk, with a Specific Application from the Southern Ozarks of Northern Arkansas*, US GEOL. SURVEY SCI. INVEST. REP. 5035, 97.

rulemaking sought to increase the vertical separation between formed manure storage structures and soluble rock from five feet to 25 feet at rule section 65.15(14)(c)(2): “A minimum ~~5~~25-foot layer of low permeability soil (1×10^{-6} cm/sec) or rock between the bottom of a formed manure storage structure and limestone, dolomite, or other soluble rock is required....”²⁸

Increasing the vertical separation distance will reduce the risk of leaking and failure of manure storage structures through sinkholes. Minnesota has concluded that karst greater than 50 feet below the ground surface will not typically lead to surface features:²⁹

In Minnesota surface karst features primarily occur where 50 feet or less of unconsolidated sediment overlies Paleozoic carbonate bedrock, the St. Peter Sandstone, or the Hinckley Sandstone. This coverage outlines areas where karst features can form on the land surface and where karst conditions are present in the subsurface (Figure 1). Subsurface karst conditions also occur in carbonate rock in areas where there is more than 50 feet of unconsolidated material over bedrock, but those conditions rarely lead to surficial karst feature development in Minnesota.

Karst in Minnesota is largely in the southeastern part of the state, adjacent to Iowa.³⁰ Because it is part of the same geologic formation, it would behave similarly to karst in Iowa.

Numerous manure storage structures and wastewater storage structures have leaked or failed when constructed above karst terrain. In Iowa, the city of Garnavillo built a wastewater pond over karst bedrock. During a test of the liner seal, the pond completely drained over one weekend through a sinkhole that formed in the bottom of the pond.³¹

²⁸ Petition at 4.

²⁹ Adams, R., et al. “Minnesota Regions Prone to Surface Karst Feature Development.” Minnesota Department of Natural Resources (2016), at 4, available at http://files.dnr.state.mn.us/waters/groundwater_section/mapping/gw/gw01_report.pdf.

³⁰ *Id.* at 1.

³¹ Libra, R.D. “Living in Karst.” Iowa Geological Survey Guidebook Series No. 25 (Oct. 2005). Available at <https://s-iihr34.iihr.uiowa.edu/publications/uploads/GB-25.pdf>.

Figure 1. Sinkhole in Garnavillo Lagoon.



Sinkholes have formed under numerous earthen basins in other states.³² Failures due to karst include a manure storage basin in Southeast Minnesota that leaked so quickly it never needed to be pumped.³³ Other municipal wastewater ponds lost millions of gallons of wastewater through sinkholes that formed after many years of use.³⁴ Wastewater storage sites in Missouri have resulted in sinkhole collapses that drained millions of gallons.³⁵ These include the collapse of the West Plains lagoon in 1978 that allowed 50 million gallons of sewage to enter groundwater, which led to hundreds of cases of flu-like illness attributed to the pollution.³⁶ We recommend DNR adopt a 25-foot vertical separation distance requirement, which is the degree of protection allowed by Iowa Code.³⁷

2. *Soil Borings and Soil Reports*

In proposed section 65.7(1)(b), a professional engineer or NRCS staff must submit a soil report based on two soil borings or test pits for a formed manure storage structure. This number of samples for a manure storage structure is grossly inadequate. This approach incorrectly presumes

³² “Recommendations of the Technical Workgroup Liquid Manure Storage in the Karst Region,” Report to the Minnesota Senate and House Agriculture and Rural Development Committees (Dec. 20, 2000), at 7, available at <https://www.pca.state.mn.us/sites/default/files/karst.pdf>.

³³ *Id.*

³⁴ *Id.*

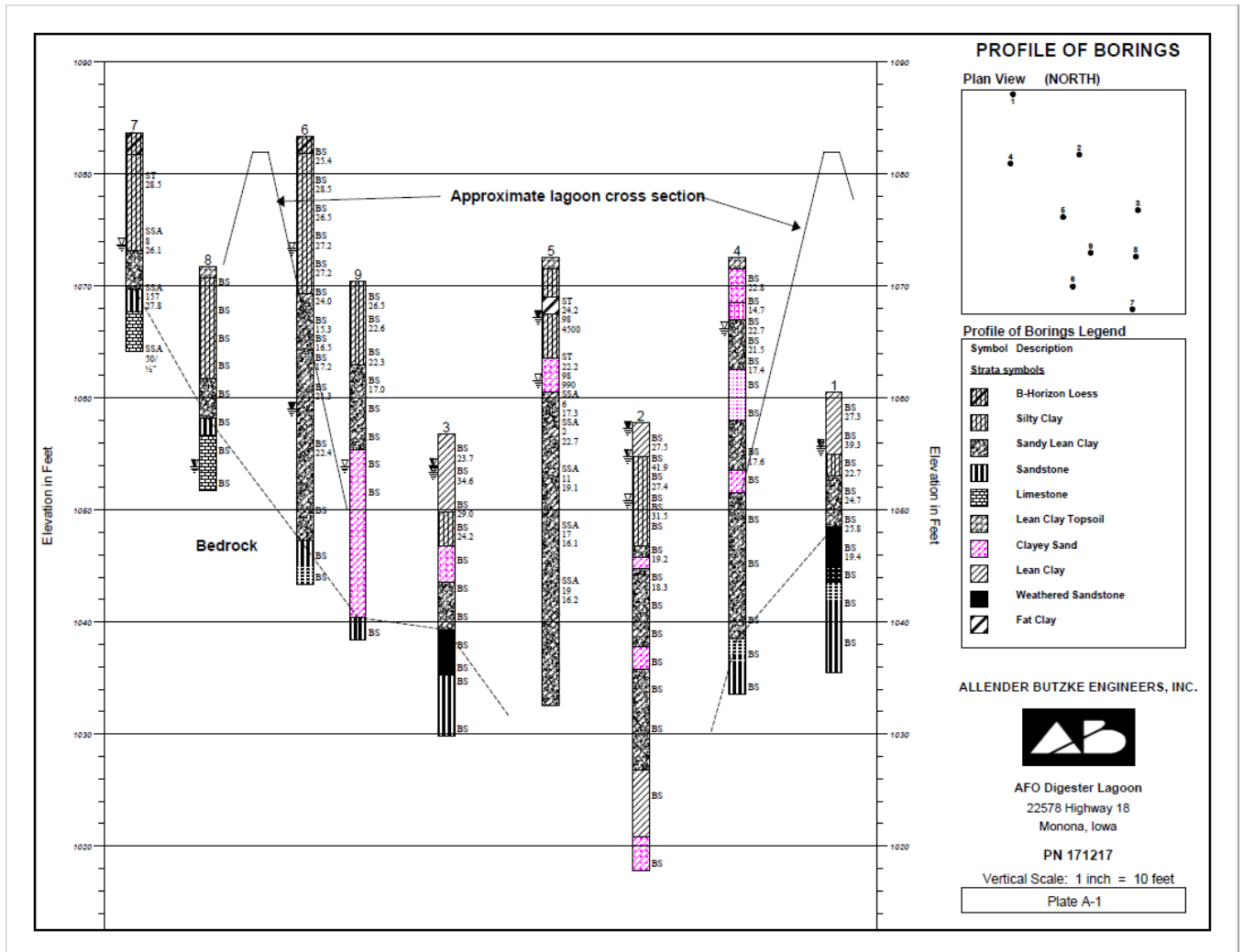
³⁵ Aley, T. “The Karst Setting.” *Journal of the Missouri Speleological Survey* 65 (2022) at 119-120.

³⁶ *Id.* at 119.

³⁷ IOWA CODE § 459.308(3).

that the karst topography follows a smooth plane, and two samples will accurately demonstrate the depth to the soluble bedrock. As shown in Attachment A, karst bedrock is highly variable. Another example of this is the documentation of bedrock sampling for the Supreme Beef facility. Borings under and near the manure storage structure at Supreme Beef showed that the bedrock elevations varied by 35 feet, as shown in Figure 2 and at a larger scale in Appendix A. Supreme Beef Soil Borings.³⁸

Figure 2. Supreme Beef Manure Basin Borings.



The rules should require more than two borings and the borings should represent a cross-section of the area under the manure storage structure. Test pits outside the structure are not adequate because the karst directly under the structure may be at a significantly different elevation. Similarly, well logs from other locations do not demonstrate that karst is at the same elevation

³⁸ “Geotechnical Exploration, AFO Digester Lagoon, 22578 Highway 18, Monona, Iowa,” Allender Butzke Engineers Inc., June 8, 2017, at 5 (summarizing bedrock depth as ranging from 1035’ to 1070’).

below the storage structure. If any boring shows inadequate separation distance, the structure should be prohibited above that location. Additional test pits would reduce this risk. We recommend the following change to section 65.7(1)(b):³⁹

b. If the proposed formed structure is located in potential karst terrain, a PE licensed in Iowa, NRCS qualified staff or a qualified organization shall submit a soil report, based on the results from soil borings, ~~or test pits or acceptable well log data,~~ describing the subsurface materials and vertical separation distance from the proposed bottom of the structure to the underlying limestone, dolomite or soluble rock. A minimum of ~~2~~ 6 soil borings spaced equally within the structure ~~or 2 test pits located within 5 feet of the outside of the structure are required if acceptable well log data is not available.~~ Any limestone, dolomite, or soluble bedrock in the borings ~~or test pits~~ shall be considered the bedrock surface rather than augur refusal. After the soil exploration is complete, each boring ~~or test pit~~ shall be properly plugged with concrete grout, bentonite or similar materials and completion of this activity shall be documented in the soil report.

Similarly, section 65.7(4) requires only one boring to establish whether a site with potential karst can maintain the 25-foot separation that allows construction of unformed manure storage structures. Because the karst has variable depth, we recommend more than one boring.

65.7(4) Unformed structures. The construction of unformed structures is prohibited in karst terrain or an area that drains into a known sinkhole. In potential karst, at least ~~one~~ four borings at least 25 feet apart shall be taken to a minimum depth of 25 feet below the bottom elevation of the proposed unformed storage structure or into bedrock, whichever is shallower. If a 25 feet vertical separation distance can be maintained between the bottom of the unformed structure and limestone, dolomite, or other soluble rock then the structure is not considered to be in karst terrain. No intact bedrock, including sandstone, shale, limestone, dolomite, or soluble rock, shall be removed or excavated during the construction of a storage structure.

The additional borings decrease the risk of vertical separation distances of less than 25 feet from karst. Maintaining adequate separation fulfills the prohibition in statute against unformed manure structures within 25 feet of karst terrain.⁴⁰

3. *Removal of Bedrock*

Proposed section 65.7(2) would prohibit removal or excavation of soluble types of intact bedrock during construction. The rules do not define “intact bedrock,” but this term is important for understanding whether a structure maintains the required separation distances. Removing the epikarst (i.e., the uppermost, weathered layer of karstified rock) exposes the soluble rock below to further and more direct weathering. This increases the risk of developing new sinkholes or other

³⁹ In this and following recommendations, Environmental Organizations’ recommended changes are in red text.

⁴⁰ IOWA CODE § 459.308(3).

failures in a structure above the site. The rule should more clearly state that removal of karst bedrock is strictly prohibited during construction of a manure storage structure. We recommend the following modification to 65.7(2):

No ~~intact~~ bedrock, including sandstone, shale, limestone, dolomite, or soluble rock, shall be removed or excavated during the construction of a storage structure.
Removal of karst bedrock, including weathered karst rock, is prohibited.

4. *Vertical Separation Requirements*

Existing rule allows less than five feet of separation for manure storage structures “designed and sealed by a PE or NRCS qualified staff person.”⁴¹ IEC and ELPC’s petition sought to increase the separation distance for AFO structures to 25 feet. The proposed rules at 65.7(3)(a) would increase the default separation from five feet to 15 feet and would require either five feet of non-porous material or a two-foot compacted clay liner.⁴² Alternatively, the facility may use a two-foot compacted clay liner. This approach will not prevent failures of manure storage structures for several reasons.

First, fifteen feet of vertical separation does not adequately prevent formation of sinkholes and failure of manure storage structures. Minnesota DNR concluded that sinkholes can form with less than 50 feet of vertical separation between karst and the surface.⁴³

The low level of soil permeability assumed in the rule (1×10^{-6} cm/sec, equal to $0.01 \mu\text{m}/\text{sec}$) is unrealistic. This rate translates to 0.0864 cm/day. Iowa has class I and II soils, which have a typical permeability of greater than the rate in the rule.⁴⁴ As shown in Figure 3, the natural soil permeability in the karst region of Iowa ranges from 4 to 10 micrometers at 6-8 feet of depth – the depth of the soil below a manure storage structure.

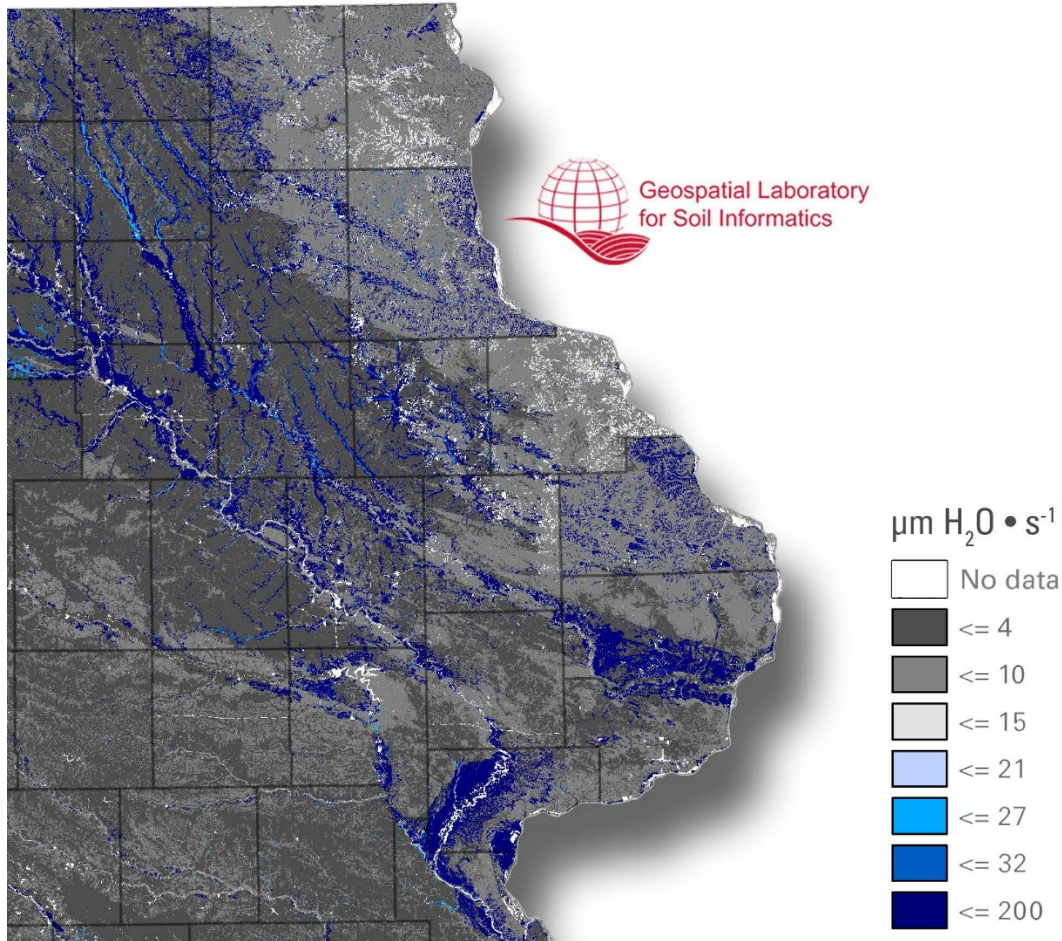
⁴¹ 65.15(14)(c).

⁴² Draft Rule at § 65.7(3).

⁴³ Adams, R., et al. “Minnesota Regions Prone to Surface Karst Feature Development.” Minnesota Department of Natural Resources (2016), at 4, available at http://files.dnr.state.mn.us/waters/groundwater_section/mapping/gw/gw01_report.pdf.

⁴⁴ “Agricultural Waste Management Field Handbook,” USDA NRCS, Appendix 10D (Mar. 2008), at 10D-6, available at <https://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17767.wba>.

Figure 3. Soil Conductivity in Northeast Iowa.⁴⁵



If such low-permeability soil does exist in the area, it would slow the flow into shallow groundwater. However, mere presence of low-permeability soil would not protect against sinkholes and other karstic formations that result from soluble rock near the ground surface.

Second, clay liners have a long history of leaking. NRCS has specifically noted that clay liners can leak in karst terrain and that alternatives provide greater protection:⁴⁶

Many rural domestic and stock water wells are developed in fractured rock at a depth of less than 300 feet. Some rock types, such as limestone and gypsum, may have wide, open solution channels caused by chemical action of the ground water. Soil liners may not be adequate to protect against excessive leakage in these bedrock types. Concrete or geomembrane liners may be appropriate for these sites. However, even hairline openings in rock can provide avenues for seepage to move

⁴⁵ Meyer Bohn, Joshua McDaniel, and Bradley Miller, Geospatial Laboratory for Soil Informatics (Jan. 2019), available at <https://glsi.agron.iastate.edu/2019/06/19/saturated-hydraulic-conductivity-gssurgo/>.

⁴⁶ "Agricultural Waste Management Field Handbook," USDA NRCS, Appendix 10D (Mar. 2008), at 10D-10, available at <https://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17767.wba>.

downward and contaminate subsurface water supplies. Thus, a site that is shallow to bedrock can pose a potential problem and merits the consideration of a liner.

Iowa's climate exacerbates the risk of clay-lined manure storage because they "are subject to desiccation and/or they may be affected by freeze and thaw cycles after the ponds have been pumped out and have not yet completely refilled with manure and water."⁴⁷ To address the proposed rule's inadequate protection against catastrophic failure of manure storage structures in karst, we recommend the following language for section 65.7(3):

Except as provided for in 65.7(5) related to the construction of a dry bedded confinement feeding operation structure, a person constructing a formed structure on karst terrain shall comply with one of the following:

a. A minimum ~~15~~ 25 feet vertical separation distance between the bottom of the formed structure and underlying limestone, dolomite, or other soluble rock is required. Within the ~~15~~ 25 feet separation distance, a minimum 5 feet continuous layer of low permeability soil (1 x 10⁻⁶ cm/sec) or non-soluble bedrock is required.

b. If no 5 feet continuous low permeability soil layer or non-soluble bedrock exists within the ~~15~~ 25 foot vertical separation distance a ~~geomembrane or geosynthetic liner must be installed 2 feet thick compacted clay liner may~~ must be constructed ~~directly~~ beneath the floor of the structure. The design of the formed structure must be prepared and sealed by a PE or an NRCS engineer.

The 25-foot separation is the maximum allowable by statute, which expressly authorizes construction of unformed manure storage structures with 25 feet of separation.⁴⁸ If DNR is unwilling to increase the separation distance to a degree that will prevent water quality from being degraded, we recommend that unformed manure basins in karst terrain be required to install an impermeable membrane to prevent leakage. This is consistent with the NRCS recommendations for impoundments in karst terrain.⁴⁹

B. DNR Should Not Delete the Departmental Evaluation Rule in Sections 65.3 and 65.201.

IEC and ELPC's petition for rulemaking requested a revision to rules 65.5(3) and 65.103(5), which allow DNR to evaluate environmental impacts of proposed facilities and are colloquially known as the "Director's Discretion rule." Under the existing rule, the DNR may deny a construction permit, disapprove a nutrient management plan, prohibit construction, or impose permit conditions to avoid or minimize the adverse impacts. The petition sought to make the DNR evaluation mandatory, rather than optional.

⁴⁷ Aley, T. "The Karst Setting," Journal of the Missouri Speleological Survey (2022) at 120.

⁴⁸ IOWA CODE § 459.308(3).

⁴⁹ "Agricultural Waste Management Field Handbook," USDA NRCS, Appendix 10D (Mar. 2008), at 10D-10, available at <https://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17767.wba>.

The EPC declined to adopt the petition's recommended changes and adopted DNR's recommendation, which took the position that the DNR lacks authority to implement the Departmental Evaluation rule.⁵⁰ In the proposed rule changes, the Departmental Evaluation rule has been removed entirely.

The Administrative Rules Review Committee of the Iowa Legislature objected to the rule.⁵¹ The ARRC stated that:

It is the opinion of the Committee that Code chapters 459 and 459A establish the procedures and standards relating to the issuance of construction permits and the approval of manure management plans, and that the Department does not have authority to create additional procedures and standards by rule. The master matrix was created by Code section 459.305 in order "...to provide a comprehensive [emphasis added] assessment mechanism in order to produce a statistically verifiable basis for determining whether to approve or disapprove an application for the construction, including expansion, of a confinement feeding operation structure..."

The ARRC objection goes on to explain its position that the master matrix is the exclusive method of siting confinement operations.

There are several problems with DNR's position and the proposal to remove the rule entirely.

First, an objection by the ARRC does not invalidate a rule.⁵² An objection allows the rule to remain in place, but shifts the burden of proof upon enforcement of the rule.⁵³ DNR has never used the Director's Discretion rule in practice, perhaps because of the objection, and therefore a court has never ruled on the legality of the rule. It remains in effect.

DNR has stated that it lacks legal authority to enforce the rule and has referred to advice provided by the Office of the Attorney General.⁵⁴ The broad authority of the EPC to undertake rulemaking directly contradicts this position. DNR must consider site-specific impacts to water quality and natural resources to ensure the regulatory structure for CAFOs appropriately prevents and abates pollution, fulfilling the EPC's mandate in Iowa Code section 455B.173. Iowa Code expressly allows DNR to consider site-specific environmental impacts in the master matrix.⁵⁵ Adopting the language as a requirement in rule is necessary to ensure AFOs do not cause undue environmental

⁵⁰ Iowa Environmental Protection Commission, "Denial of Petition for Rule Making" (Feb. 15, 2022) at 8.

⁵¹ See objection to rules 65.5(3) and 65.103(5) in 567 Iowa Admin. Code ch. 65.

⁵² IOWA CODE § 17A.4(3)(c). In addition, commentators have questioned the constitutional validity of the ARRC's role and implications of ARRC objections. See Jerry Anderson and Christopher Poynor, "A Constitutional and Empirical Analysis of Iowa's Administrative Rules Review Committee Procedure," 61 DRAKE L. REV. 1 (2013).

⁵³ *Id.*

⁵⁴ Iowa Environmental Protection Commission, "Denial of Petition for Rule Making" (Feb. 15, 2022) at 8.

⁵⁵ IOWA CODE § 459.305(2).

harm to drinking water sources or groundwater. This is necessary to fulfill the EPC's duty to prevent and abate water pollution and to prevent disposal manure from causing water pollution.⁵⁶

Iowa Code also contains more specific authorization for DNR to impose site-specific conditions. Section 459.308 authorizes DNR to require, "As a condition to approving an application for a construction permit...The installation of a related pollution control device or practice" for an unformed manure structure at a confinement.⁵⁷ This provision expressly allows DNR to impose the types of site-specific or case-specific conditions in construction permits provided in existing rule 65.5(3).

With respect to open feedlots, the ARRC's objection references chapter 459A generally, but relies entirely on the master matrix as the basis for the objection. Open feedlots are not subject to the master matrix.⁵⁸ Even if the objection were valid, it should apply only to confinement operations subject to the "comprehensive" regulation provided by the matrix. In contrast, open feedlots have no scoring system for siting and, under existing rules, can often avoid submitting construction permits and nutrient management plans. Sites that can comply with existing rules also create a substantial risk of water quality pollution, and in fact are causing pollution today.

Because the master matrix does not apply to open feedlots, Chapter 459A gives the DNR broad authority to regulate open feedlots to ensure discharges meet water quality standards. Section 459A.104 allows regulation by rule of all open feedlot structures, with the intent to control open feedlot operations and effluent from the facilities. Discharges that cause violations of water quality standards are a method of establishing noncompliance with the rules.⁵⁹ Thus, DNR must regulate facilities to ensure discharges will not cause a violation of water quality standards. If DNR determines that a particular facility's discharge will cause a violation of water quality standards, it must prevent the discharge. Rule section 65.201 implements that obligation and DNR should not delete it.

C. DNR Inappropriately Reduced Monitoring Requirements in Section 65.109.

Water quality monitoring has shown increasing concentrations of nitrate and bacteria in groundwater, particularly in areas with substantial presence of AFOs. Earthen manure containment systems have a potential to leach nitrate into groundwater⁶⁰ and those who use them should be responsible for ensuring that there is no downgradient contamination.

⁵⁶ IOWA CODE §§ 455.173, 459.311(3).

⁵⁷ Iowa Code § 459.303(6).

⁵⁸ IOWA CODE § 459.305 (implementing the master matrix and referring only to confinement operations).

⁵⁹ IOWA CODE § 459A.401(3).

⁶⁰ Iowa Admin. Code r. 567-65.3(5)(a) (referencing actions to minimize leaching); *see, e.g.*, "Effects of Liquid Manure Storage Systems on Ground Water Quality," Minnesota Pollution Control Agency (Apr. 2001), available at <https://www.pca.state.mn.us/sites/default/files/rpt-liquidmanurestorage.pdf> (finding increased nitrate and phosphorus downgradient of unlined and earthen basins).

Iowa Code expressly allows DNR to require water quality monitoring for unformed manure structures.⁶¹ This monitoring is necessary to address the high frequency of nitrate contamination in private wells. In the rulemaking petition filed in 2021, IEC and ELPC proposed to increase groundwater monitoring requirements at confinements and open lots with earthen manure structures to reduce the risk of unremediated groundwater contamination. We proposed:

Amend 65.15(21) by adding the following subsection:

Groundwater monitoring. The department shall require that the owner of a confinement feeding operation install and operate a water pollution monitoring system as part of an unformed manure storage structure.

Amend 65.109(10) by adding the following subsection:

Groundwater monitoring. The department shall require that the owner of an open feedlot install and operate a water pollution monitoring system as part of an unformed manure storage structure.

The proposed rule does not add groundwater quality monitoring requirements at any unformed manure structures. This ignores DNR's statutory authority and increases the likelihood of major leaks to shallow groundwater going undetected. Because the Safe Drinking Water Act does not apply to private wells and the state does not require private well testing, DNR should ensure facilities identify and stop pollution at the source of contamination. This requirement is similar to requirements imposed in Wisconsin, which already requires monitoring around manure storage structures.⁶² We recommend the following addition to proposed rule 65.109:

65.109(13) Groundwater monitoring. The owner of an AFO with an unformed manure storage structure must install and operate a groundwater water pollution monitoring system. Two or more groundwater sampling wells 25 or more feet apart must be installed between 5 feet and 25 feet outside the toe of the berm on the downgradient side, or on opposite sides if the site has no slope. The operator must submit samples from the monitoring device to a certified laboratory at least once per year and electronically provide to DNR the results for total phosphorus, nitrate-nitrogen, and E. coli within 30 days after receipt.

DNR should include the data in the AFO database to inform the public, including nearby residents, of the quality of shallow groundwater in the area. DNR should also evaluate this information to flag threats to surface water and groundwater from these high-risk facilities and to determine appropriate thresholds for response actions such as a remediation plan.

When drainage tile lowers the water table at a facility, the drainage tile should also be monitored to ensure no lateral leakage into the drainage tile. Existing and proposed rules require installation of a monitoring device in some circumstances, but do not require monitoring to commence. As a condition of building an AFO in the natural groundwater table, DNR should require ongoing monitoring. We recommend the following changes to 65.109(6)(b):

⁶¹ IOWA CODE § 459.303(6).

⁶² *Clean Wisconsin, Inc., v. Wisconsin Department of Natural Resources*, 2021 WI 71 (Case No.: 2016AP1688, decided July 8, 2021).

(1) Unformed structures. The groundwater table around an unformed manure storage structure or earthen egg washwater storage structure may be artificially lowered to levels required in paragraph ~~65.15(7)“a”~~ 65.109(6)“a” by using a gravity flow tile drainage system or other permanent nonmechanical system for artificial lowering of the groundwater table. Detailed engineering and soil drainage information shall be provided with a construction permit application for an unformed manure storage structure or earthen egg washwater storage structure if a drainage system for artificially lowering the groundwater table will be installed. The level to which the groundwater table will be lowered will be considered to represent the seasonal high-water table. If a drainage tile around the perimeter of the basin is installed a minimum of two feet below the top of the basin liner to artificially lower the seasonal high-water table, the top of the basin’s liner may be a maximum of four feet below the seasonal high-water table which existed prior to installation of the perimeter tile system. Drainage tile lines shall be installed between the outside of the proposed toe of the berm and within 25 feet of the outside of the toe of the berm. Drainage tile lines shall be placed in a vertical trench and encased in granular material which extends upward to the level of the seasonal high-water table which existed prior to installation of the perimeter tile system. A device to allow monitoring of the water in the drainage tile lines installed to lower the groundwater table and a device to allow shutoff of the drainage tile lines shall be installed ~~if the drainage tile lines do not have a surface outlet accessible on the property where the unformed manure storage structure is located.~~ The operator must submit samples from the monitoring device to a certified laboratory at least once per year and electronically provide to DNR the results for total phosphorus, nitrate-nitrogen, and E. coli within 30 days after receipt.

For alternative treatment (AT) systems, the draft rule reduces monitoring and reporting. Proposed section 65.202 reduces both monitoring frequency and the range of parameters to measure at vegetative treatment areas used by AT systems. The reduction in frequency may reflect the seasonal flow. For example, nitrogen sampling will no longer be required, despite being a primary pollutant of concern in manure. We recommend retaining the existing language in section 65.202(d)(2) shown below:

(2) Discharge monitoring—tile lines. If the AT system includes a perforated tile system installed under any VTA berms to enhance infiltration within the VTA ~~in accordance with 65.110(6)“h” or 65.110(7)“h,”~~ water samples shall be collected from a sampling point located downgradient of the VTA on each individual tile line or combination of tile lines on the following schedule: ~~Quarterly~~ Annual ~~sampling~~ One ~~one~~ sample shall be taken from each sampling point ~~once each quarter (January—March, April—June, July—September, October—December),~~ in March or April and again in the fall (September through November) of each year and the level of flow in the tile system recorded at the time of sampling.

The sample shall be collected ~~at least ten days after a rainfall event of one inch or greater; and samples must be taken at least two, but not more than four, months apart when the tile(s) are flowing.~~ If there is no discharge from the tile line at a time that meets these requirements, documentation on appropriate department forms can be substituted for the sample and analysis. Collected samples shall be submitted to a certified laboratory and analyzed for: **total Kjeldahl N, NH4 N, total P, COD, total suspended solids, and chloride, and Ortho-phosphate as P.**

Ensuring samples reflect actual flow and maintaining the range of parameters will provide a better assessment of whether the vegetative treatment area is operating properly.

D. DNR Must Adopt the Floodplain Map as Proposed in Section 65.9.

As noted in the Petition for Rule Making, the legislature directed the DNR to develop a floodplain map in 2002, and allowed interim procedures until its adoption. DNR has used the interim procedures for 20 years.

The proposed rules include adoption of a floodplain map by incorporating it into the AFO Siting Atlas on the DNR website.⁶³ The proposed rules make clear that applicants must provide the map layer for a proposed site as part of a construction application⁶⁴ and that confinements on the floodplain of a major water source are prohibited.⁶⁵ We support the adoption of the floodplain map and the requirement for its use.

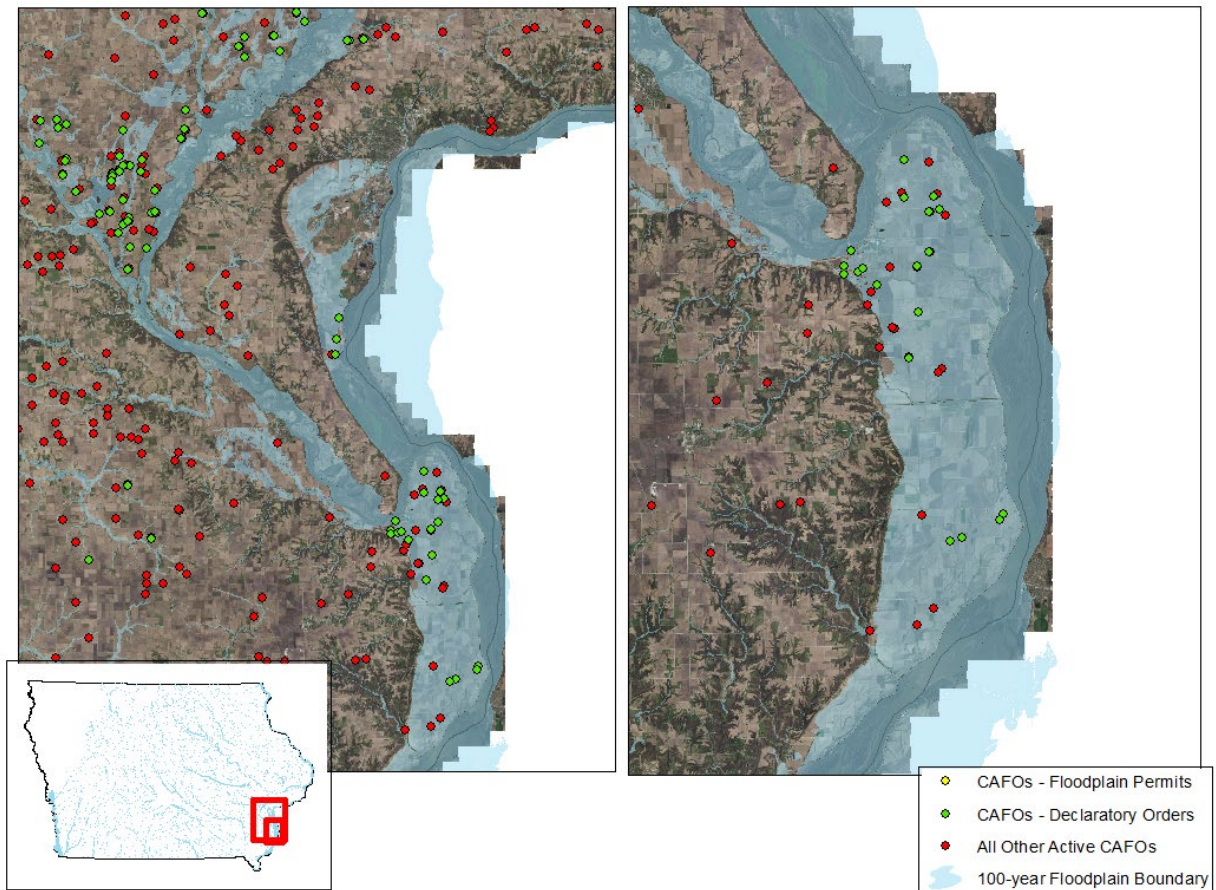
We remain concerned about the numerous AFOs that exist in the 100-year floodplain. For example, Louisa County has many floodplain AFOs that did not request a floodplain determination from DNR or received a determination they were not in the floodplain, as shown in Figure 4. These present an ongoing risk of flooding that will have significant costs and consequences. We request DNR evaluate AFOs in the floodplain for compliance with existing floodplain construction rules and take enforcement action against facilities that are out of compliance.

⁶³ Proposed rule at § 65.9.

⁶⁴ Proposed rule at 65.9(3).

⁶⁵ Proposed rule at § 65.9.

Figure 4. AFOs in 100-year Floodplain, Louisa County.



As explained in the Petition for Rule Making, climate change is expected to exacerbate the intensity and frequency of storms in Iowa, including rainfalls. Ensuring that DNR maintains and updates the floodplain map regularly will be important to ensure adequate protection for water quality in the future.

IV. Manure Management Changes Necessary to Protect Water Quality

Agriculture is the primary source of pollution in Iowa, including 92 percent of nitrate and 80 percent of phosphorus entering surface waters.⁶⁶ Much of that pollution originates as manure that is applied to cropland without prior treatment. To address that pollution source, statute requires plans to manage manure application. The proposed rules fail to address the fundamental problems of manure application and oversight by allowing facilities to avoid submitting plans entirely, allowing inappropriate application rates and locations, and failing to ensure compliance through permitting and enforcement.

⁶⁶ “Iowa Nutrient Reduction Strategy – A science and technology-based framework to assess and reduce nutrients to Iowa waters and the Gulf of Mexico.” Updated December 2017. Section 1.2 at 8.

A. Background

Confinement operations must submit manure management plans (MMPs) if they were built or expanded after May 31, 1985.⁶⁷ Most confinements in the state were built or expanded after 1985 and therefore must have an MMP.

Open feedlots, regulated under a different chapter of statute, do not have to meet the same requirements. An open feedlot must submit a Nutrient Management Plan (NMP) with a construction permit,⁶⁸ but only if they have at least 1,000 animal units.⁶⁹

The MMPs and NMPs must document the nutrient concentrations of manure, as well as the locations, timing, and rates where the operation will apply the manure.⁷⁰ The AFO “shall not apply manure in excess of the nitrogen use levels necessary to obtain optimum crop yields.”⁷¹ Nor shall the manure rates exceed the phosphorus index.⁷² These restrictions should act as a limitation on application rates and implement the EPC’s legal authority to adopt rules that mitigate water quality impacts from AFOs. The plans should also provide adequate information to enforce the requirements. In practice, the plans have failed to do either.

B. MMP and NMP Contents in 65.112 and 65.208(8) Must Expand to Protect Water Quality.

The information provided in MMPs and NMPS determines whether DNR can assess compliance with basic requirements to protect water quality. Inaccurate or insufficient information will lead to water quality problems.

While statute and rules impose overlapping requirements for MMPs and NMPs, the requirements are not identical. Statute imposes certain requirements for MMPs, but does not specify the contents of NMPs. Even where both types of plans address the same issue, the rule language differs for the contents of MMPs and NMPs. Despite those discrepancies, DNR has proposed to maintain existing requirements for MMPs and NMPs in new sections of rule with very minor changes.

Rules require both MMPs and NMPs to include:⁷³

- Calculations to determine the land area for manure application;
- A phosphorus index for each field and supporting documentation;
- Manure nutrient concentrations;

⁶⁷ IOWA CODE § 459.312(1).

⁶⁸ IOWA CODE § 459A.205.

⁶⁹ IOWA CODE § 459A.208.

⁷⁰ Proposed rules 65.112; 65.208(8).

⁷¹ 567 IAC 65.17(1); proposed rule 65.112(1).

⁷² *Id.*

⁷³ Iowa Code § 459.312(10), 567 IAC 65.17, proposed rule 65.112 (MMPs); 65 IAC 65.112(8) (NMPs); proposed rule 65.208(8) (NMPs).

- Manure application methods;
- Written agreements for application on land owned by others;
- Estimated manure produced by the AFO;
- Site-specific conservation practices to prevent surface water pollution;

MMPs must also include:⁷⁴

- Land for emergency application of manure to frozen or snow-covered ground;
- Practices to minimize odors from spray irrigation

NMPs must also include:⁷⁵

- Demonstration of adequate manure storage;
- Proper plans for mortality management;
- Diversion of surface drainage;
- Exclusion of livestock from waters of the United States;
- Equipment for manure application;
- Manure testing protocols; and
- Recordkeeping methods.

Inaccurate information and calculations can undermine the foundation of a plan. For example, the Supreme Beef NMP assumed a nutrient concentration from a different type of facility; incorrectly classified soil types; miscalculated phosphorus indexes; and failed to identify conservation practices, while assuming conservation practices existed in calculating application rates. These faults demonstrate why DNR must do more than just move rules to new sections. We have several recommendations to improve the accuracy and effectiveness of the plans.

1. *Nutrient Concentrations in Manure and Process Wastewater*

When determining the nutrient concentration of manure, existing rules allow MMPs to use the values in Chapter 65, Table 3 or “other credible sources for standard table values or the actual nitrogen and phosphorus content of the manure determined by a laboratory analysis ... from a manure storage structure with design and management similar to the confinement feeding operation’s manure storage structure.”⁷⁶ The rules do not address how DNR verifies the sampling or the frequency at which manure is tested. We recommend the following addition to proposed rule section 65.112(5):

- a. If an actual sample is used to represent the nutrient content of manure, the sample shall be taken in accordance with Iowa State University ~~extension~~ Extension and Outreach publication PM 1558, “Management Practices: How to Sample Manure for Nutrient Analysis.” AE 3550, “How to Sample Manure for Nutrient Analysis.” The department ~~may~~ **shall** require documentation of the manure sampling protocol

⁷⁴ 567 IAC 65.17; proposed rule 65.112.

⁷⁵ 65 IAC 65.112(8); proposed rule 65.208(8).

⁷⁶ 567 IAC 65.17(5); proposed rule 65.112(5).

~~or~~ and take a split sample to verify the nutrient content of the operation's manure.

...

c. After the first year of operation, the manure must be tested at least once per year using protocol in paragraph "b" for total nitrogen and total phosphorus and the MMP must be revised to reflect the results of the actual nutrient concentration.

The rules also fail to give adequate guidance for calculating manure concentrations in NMPs. The rules require the applicant to submit "[n]utrient concentration of the manure, process wastewater and open feedlot effluent" without further explanation.⁷⁷ The NMP requirements should similarly limit manure to samples from facilities with "design and management similar to" the proposed facility. Relying on concentrations from a different type of facility introduces significant risk of inaccuracy. We recommend the following change to 65.208(8)(b)(1):

Nutrient concentration of the manure, process wastewater and open feedlot effluent, as shown by laboratory analysis from the facility or from a manure storage structure with design and management similar to the open feedlot's manure storage structure.

NMPs should require annual manure testing for nutrient concentrations, consistent with our recommendation above for MMPs. We recommend the following addition to section 65.208(8)(b):

(3) After the first year of operation, the manure must be tested at least once per year using protocol in paragraph "b" for total nitrogen and total phosphorus and the MMP must be revised to reflect the results of the actual nutrient concentration.

This testing regimen will prevent MMPs from relying on long-outdated or inaccurate assumptions during operation.

2. *Manure Application Rate Calculations*

The rate of manure application determines whether excess nitrogen and phosphorus remain unused by the crop. Besides manure, Iowa has substantial synthetic fertilizer sales that provide nitrogen and phosphorus. MMPs and NMPs do not have to account for these inputs. The plans should reflect actual nutrient application rates, not only those from manure.

The application rates should also reflect current science and policy regarding the efficiency of crop responses to additional nitrogen. Universities such as Iowa State University have studied this approach and for decades have suggested using a "maximum return to nitrogen" approach to replace the "optimum yield" method. Iowa's Nutrient Reduction Strategy (NRS) included the maximum return to nitrogen calculation method in its science assessment and in every scenario.⁷⁸ The NRS science assessment found that adopting this recommendation would reduce nutrient

⁷⁷ 567 IAC 65.112(8)(b)(1); proposed rule 65.208(8)(b)(1).

⁷⁸ NRS §2.1 at 9.

inputs and would also *save* \$32 million.⁷⁹ Since DNR’s last comprehensive rule revision, the Iowa legislature has adopted the NRS as official state policy.⁸⁰ DNR must implement the policy through this rulemaking. We recommend incorporating this change by amending section 65.112(18)(c) as follows:

c. Nitrogen-based application rates for corn shall be based on current recommendations from an Iowa-based state university for the maximum return to nitrogen. Nitrogen-based application rates for other crops shall be based on the optimum crop yields as determined in ~~65.17(6)~~ 65.112(6) and crop nitrogen usage rate factor values in Table 4 at the end of this chapter or other credible sources. The calculation of manure applied from the facility must account for fertilizer from all other manure and non-manure sources. However, ~~subject to the prohibition in 65.17(20);~~ liquid manure applied to land that is currently planted to soybeans or to land where the current crop has been harvested and that will be planted to soybeans the next crop season shall not exceed 100 pounds of available nitrogen per acre. Further, the 100 pounds per acre application limitation in the previous sentence does not apply on or after June 1 of each year; in that event ~~65.17(6)~~ 65.112(6) and Table 4 would apply as provided in the first sentence of this paragraph.

Adoption of the “maximum return to nitrogen” approach also affects section 65.112(17), which refers to the optimum yield method for nitrogen-limited fields:

g. Additional commercial fertilizer may be applied as follows on fields receiving manure:
(1) Phosphorus fertilizer may be applied in addition to phosphorus provided by the manure up to amounts recommended by soil tests and Iowa State University ~~extension~~ Extension and Outreach publication PM 1688, “A General Guide for Crop Nutrient and Limestone Recommendations in Iowa.”
(2) Nitrogen fertilizer may be applied in addition to nitrogen provided by the manure to meet the remaining nitrogen need of the crop as calculated in the current ~~manure management plan~~ MMP. Additional nitrogen fertilizer may be applied up to the amounts indicated by ~~section 65.112(18) soil test nitrogen results or crop nitrogen test results as necessary to obtain the optimum crop yield.~~

Like the existing rules, the proposed rules for NMPs refer to the MMP calculation requirements to determine appropriate manure application rates. We support consistency between the types of plans. To clarify that the optimum crop yield method no longer applies to nitrogen-limited fields, DNR should implement clarifying changes for NMPs in section 65.208(8)(a)(2) to specify that the nitrogen calculation applies the maximum return to nitrogen approach s in section 65.112(18):

(2) Calculations necessary to determine the land area required for the application of manure, process wastewater and open feedlot effluent from an open feedlot

⁷⁹ NRS §2.2 at 27.

⁸⁰ IOWA CODE § 455B.177.

operation based on nitrogen according to section 65.112(18) or phosphorus use levels (as determined by phosphorus index) in order to obtain optimum crop yields according to a crop schedule specified in the ~~nutrient management plan~~-NMP, and according to requirements specified in subrule ~~65.17(4)~~65.112(4). The 100 pounds of available nitrogen per acre limitation specified in paragraph ~~65.17(18)“e”~~65.112(18)“c”(applicable to open feedlot operations and combined open feedlot and confinement operations with an NPDES permit because of requirements in subrule ~~65.17(4)~~ 65.112(4)) pertaining to liquid manure applied to land currently planted to soybeans or to land where a soybean crop is planned applies only to liquid manure, process wastewater or settled open feedlot effluent.

The existing manure application calculations for MMPs and NMPs allow a calculation method that will result in over-application of manure, even before accounting for any synthetic fertilizer inputs.

3. *Phosphorus Index Calculations*

In the same vein, calculating the phosphorus index depends on accurate identification of the soil type and accurate soil tests. The rules rely on the same phosphorus index procedures for NMPs and MMPs.⁸¹ The soil phosphorus index requires calculating the rate of erosion from the field. Existing rules require using “the most erosive soil map unit that is at least 10 percent of the total field area.”⁸² The proposed rules delete this requirement and list only “the soil map unit consistent with NRCS. [sic] guidelines.”⁸³ This change will allow users to underestimate the erosiveness of fields and overestimate the phosphorus inputs necessary to meet crop needs. We recommend retaining the existing rule language in section 65.112(17)(b):

b. When sheet and rill erosion is calculated for the phosphorus index, the soil ~~type~~ map unit used for the calculation shall be the **most erosive soil map unit that is at least 10 percent of the total field area. In all manure management plans submitted to the department for approval, the dominant critical soil map unit consistent with NRCS. Conservation planning guidelines shall be used to calculate sheet and rill erosion for the phosphorus index. (See NRCS Technical Note No. 29.)**

4. *Approval Criteria*

The phosphorus index calculation accounts for conservation practices that reduce nutrient losses. Statute requires these practices as a component of the MMP, and rule requires them in an NMP.⁸⁴ Proposed section 65.112(10) further describes the methods for reducing soil loss, requiring MMPs (and NMPs by reference) to include field-specific data for the practices used to calculate the

⁸¹ See proposed rule 65.208(8)(a)(1) (referencing 65.112(16) for phosphorus index procedures).

⁸² 567 IAC 65.17(17)(b).

⁸³ Proposed Rule 65.112(17)(b).

⁸⁴ Iowa Code § 459.312(10)(f); 567 IAC 65.112(8)(e)(7), proposed rule 65.208(8)(e)(7).

phosphorus index.⁸⁵

DNR, however, has approved MMPs even when facilities have submitted incomplete plans that fail to identify field-specific data and practices. This was the case for Supreme Beef. To ensure compliance with section 65.112(10), we recommend the following modifications to section 65.111(4) regarding approval of MMPs:

65.111(4) The department shall review and approve or disapprove all complete ~~manure management plans~~ MMPs within 60 days of the date they are received. The department shall deny an incomplete MMP within 60 days.

The above change also makes clear that the options presented to DNR are approval and denial. Rather than deny the Supreme NMP entirely for failing to contain required content, DNR partially approved the application without any rules allowing for such a process. Our recommended change above makes clear that DNR cannot modify an application to achieve approval.

C. DNR Should Require Online Submission of MMPs and NMPs in Sections 65.111 and 65.208.

MMPs and NMPs provide the regulatory tools by which DNR seeks to prevent manure from causing water pollution. To achieve this goal, the plans must be accurate and enforceable. The proposed rules largely maintain the existing language, which has led to the water quality problems described in Section I. DNR has proposed not to require online submission of MMPs and NMPs including geospatial information for fields.⁸⁶ Continuing to allow paper submissions reduces transparency and decreases efficiency. DNR must revise the rules to require online documentation, including geospatial mapping.

DNR has records of more than 9,000 AFOs in Iowa.⁸⁷ The records show that 6,663 facilities have an MMP or NMP.⁸⁸ Each of these plans contains a list of individual fields on which it will apply manure, resulting in tens of thousands of individual fields subject to enforcement by DNR.⁸⁹ Public review of MMPs has shown fields being listed in multiple plans.⁹⁰ Recordkeeping requirements in proposed section 65.112(13)(e) (existing rule section 65.17(13)(e)) exempt manure applicators from enforcement actions if they are not aware of other fertilizer applied to land they do not own or lease for crop production. DNR is the only party in a position to track the manure application

⁸⁵ Proposed rule 65.112(10) in the DNR's draft deletes the initials "MMP" rather than adding them. We assume this was inadvertent on DNR's part.

⁸⁶ Proposed rule 65.111(3).

⁸⁷ Iowa DNR Animal Feeding Operation Database, available at <https://programs.iowadnr.gov/animalfeedingoperations/FacilitySearch.aspx> (last accessed Sept. 20, 2022).

⁸⁸ *Id.*

⁸⁹ For example, the Supreme Beef NMP requested approval to apply manure to 45 fields.

⁹⁰ See comments of Jefferson County Farmers and Neighbors, Inc., on proposed revisions to chapter 65 rules (Oct. 2022).

rate restrictions. Failure to properly track can preclude enforcement actions, and paper copies functionally prevent the department from fulfilling its oversight obligations.

This inefficiency has practical effects. Paper copies increase costs for DNR, which must review, approve, and maintain these submissions on an ongoing basis. IEC requested MMPs and NMPs through an Open Records Act request in 2020, seeking fields that overlap with fields proposed by Supreme Beef. DNR staff responded that “there is no electronic query method in place to determine fields shared among multiple MMPs/NMPs.”⁹¹ DNR’s method to identify potential overlap with a new NMP is to review the plans from every nearby facility one at a time based on paper plat maps.⁹² DNR is either taking substantial staff time to do this for every new plan or failing to do so at the risk of Iowa’s water quality. Requiring electronic geospatial information as part of the MMP/NMP submission would vastly accelerate and improve the accuracy of the review process.

Paper copies also reduce public access and transparency. Physical documents are stored at field offices, which can be difficult to reach for those with limited time and transportation options. To retrieve MMP documents, which are public records, DNR charges the public for the staff time to review plans and scan paper copies, which can total hundreds of dollars.⁹³ Citizen review of the paper documents is time-consuming and technically challenging, resulting in a cumbersome process that actively and unnecessarily discourages public access and participation in the review process.

DNR already has an online form to submit electronic MMPs. The proposed rules require using an online database, the AFO Siting Atlas, to submit a complete MMP or NMP, so a person submitting an MMP or NMP must have access to the internet to submit the plan. But the rules would still allow printed submissions of information from the atlas, rather than online submissions with geospatial information. The rules should reflect that agriculture now requires use of electronics and the internet to operate efficiently.

Requiring geospatial information in applications is already required in Iowa for other purposes. The Iowa Utilities Board requires geospatial files for pipelines and provides an example of submission requirements. The Board requires pipeline applicants to “provide the board with a KMZ file showing the proposed route of the pipeline. Data files necessary to provide mapping of the route through the use of a geographic information system application shall be provided upon the request of the board.”⁹⁴ Board rules also define the minimum fields of information included on the map.⁹⁵

One of the steps in DNR’s review should be to ensure that the proposed fields will not receive excess manure by receiving manure from more than one AFO. Two AFOs cannot separately count

⁹¹ Email from DNR Records (dnr.records@dnr.iowa.gov) to Michael Schmidt (Dec. 17, 2020).

⁹² *Id.*

⁹³ Email from DNR Records (dnr.records@dnr.iowa.gov) to Michael Schmidt (January 5, 2021).

⁹⁴ 199 IAC 13.3(1)“b”.

⁹⁵ *Id.*

the same cropland. Electronic geospatial submissions will facilitate review by DNR to prevent more than one AFO applying manure on a field. DNR should also require consistent naming conventions for fields, such as the USDA Farm Services Agency field number. This efficiency is critical for a department facing staff reductions of more than 125 employees since 2007 and flat AFO funding from 2014 through 2024.⁹⁶

We recommend the following change to proposed rule 65.111(3)(a), paragraphs 1 and 2:

a. The owner of a confinement feeding operation who is required to submit a ~~manure management plan MMP~~ under this rule shall submit an updated ~~manure management plan MMP~~ on an annual basis to the department. The updated ~~manure management plan MMP~~ ~~may~~ must be submitted by ~~hard copy or by~~ online, electronic submittal. The updated plan must reflect all amendments made during the period of time since the previous ~~manure management plan MMP~~ submission.

~~(1) If the plan is submitted by hard copy, the submittal process shall be as follows: The owner of the animal feeding operation AFO shall also submit the updated manure management plan MMP on an annual basis to the board of supervisors of each county where the confinement feeding operation is located and to the board of supervisors of each county where manure from the confinement feeding operation is land-applied. If the owner of the animal feeding operation AFO has not previously submitted a manure management plan MMP to the board of supervisors of each county where the confinement feeding operation is located and each county where manure is land-applied, the owner must submit a complete manure management plan MMP to each required county. The county auditor or other county official or employee designated by the county board of supervisors may accept the updated plan on behalf of the board. The updated plan shall include documentation that the county board of supervisors or other designated county official or employee received the manure management plan MMP update.~~

~~(2) If the plan is submitted electronically, t~~The submittal process shall be as follows: The owner of the animal feeding operation AFO shall submit the updated manure management plan MMP to the department through the department's electronic web application. Once the submittal has been completed, the department shall provide electronic access of the updated manure management plan MMP to the public through the online AFO Siting Atlas and database~~board of supervisors of each county where the confinement feeding operation is located and each county where manure is land-applied.~~

Electronic forms, along with proper software, would significantly decrease the DNR staff time necessary to review MMPs and NMPs. It would increase transparency and accountability. It would also save costs for public records requests. DNR must make use of the online submissions by populating a database with the information and creating a geospatial layer.

⁹⁶ IEC analysis of legislative appropriations and requested funding, 2006-2024.

DNR should also specify the electronic geospatial component of manure application locations in proposed rule 65.112(8):

a. The ~~manure management plan-MMP~~ shall identify each farm where the manure will be applied, the number of acres that will be available for the application of manure from the confinement feeding operation, and the basis under which the land is available. The locations shall be submitted to DNR in an electronic geospatial format. DNR shall add the geospatial data to the online AFO Siting Atlas and AFO database for public access.

If DNR has preferred file formats, it could specify those formats in the rule.

Consistent with these changes, DNR should not make the current state of affairs even worse, which is what it proposes in section 65.112(12) by expressly allowing hard copies of current MMPs. We ask the DNR to delete that change as shown below:

65.112(12) ~~Current manure management plan-MMP.~~ The owner of a confinement feeding operation who is required to submit a ~~manure management plan-MMP~~ shall maintain a current electronic manure management plan-MMP at the site of the confinement feeding operation or a hard copy of the current MMP at the site of the confinement feeding operation or at a residence or office of the owner or operator of the operation within 30 miles of the site. The plan shall include completed manure sales forms for a confinement feeding operation from which manure is sold. If manure management practices change, a person required to submit a ~~manure management plan-MMP~~ shall make appropriate changes consistent with this rule. If values other than the standard table values are used for ~~manure management plan-MMP~~ calculations, the source of the values used shall be identified.

DNR has allowed electronic MMPs for years. The benefits to DNR of this approach and the limited resources available to the agency justify online submissions.

D. Exemptions to Manure Application Separation Distances in sections 65.107 and 65.108 Undermine the Purpose of the Rules.

Statute and rule require separation distances from AFOs and AFO structures for the benefit of the public and nearby property owners. The proposed rules do not strike the proper balance between private benefits of AFO owners and other property uses.

Proposed rule section 65.107(9)(4) addresses separation distances from designated wetlands. Statute expressly provides that “a confinement feeding operation structure shall not be constructed” within 2,500 feet of a designated wetland.⁹⁷ The proposed rule would allow construction if an application has already been submitted or (if no construction permit is required)

⁹⁷ IOWA CODE § 459.310(1).

an MMP has been submitted to DNR. These exceptions do not exist in statute. DNR should revise section 65.107(4) to apply the statutory prohibition as follows:

65.107(4) *Separation distance from designated wetlands.* Separation distances specified in this subrule shall apply to any confinement feeding operation structure, including a ~~small-animal feeding operation SAFO~~. A confinement feeding operation structure shall not be constructed closer than 2,500 feet away from a “designated wetland” as defined and referenced in rule 567—65.1(459,459B). This requirement shall not apply to a confinement feeding operation structure if any of the following occur before the wetland is included in “Designated Wetlands in Iowa,” effective August 23, 2006:

a. The confinement feeding operation structure already exists. ~~This exemption also applies to additional confinement feeding operation structures constructed at the site of such an existing confinement feeding operation structure after a wetland is included in “Designated Wetlands in Iowa,” effective August 23, 2006.~~

b. Construction of a confinement feeding operation structure has begun as provided in subrule 65.8(1).

~~c. An application for a permit to construct a confinement feeding operation structure has been submitted to the department.~~

~~d. A manure management plan MMP concerning a proposed confinement feeding operation structure for which a construction permit is not required has been submitted to the department.~~

DNR must make this change to fulfill the statutory prohibition on construction near wetlands.

E. Confinement Land Application Requirements in Section 65.101 Must Reflect Actual Crop Needs.

The proposed rules should incorporate proper nitrogen application rates as a requirement, as recommended above. We are disappointed that DNR has proposed to delete existing language specifying best practices for manure application.

To implement our recommended change to nitrogen-based manure application rates based on university recommendations in section IV.B. above, we recommend that proposed section 65.101(1) be revised as follows:

~~65.3(4)~~ **65.101(1)** *Application rate based on crop nitrogen use.* A confinement feeding operation that is required to submit a ~~manure management plan MMP~~ to the department under rule ~~567—65.16~~ 567—65.111(459,459B) shall not apply manure in excess of current recommendations from an Iowa-based state university for the maximum return to nitrogen-use levels necessary to obtain optimum crop yields. Calculations to determine the maximum manure application rate allowed under this subrule shall be performed pursuant to rule ~~567—65.17~~ 567—65.112(459,459B).

Land application of manure to tile-drained land can rapidly lead to water pollution if the manure is liquid or is quickly followed by precipitation. We recommend adding a provision to test tile drainage following land application of liquid manure or precipitation following manure application by adding the following paragraph to section 65.101(2):

- e. For liquid manure applied to land with subsurface drainage, the manure applicator shall sample water quality from any tile monitoring points or outlets on the property downgradient of the manure application. The applicator must submit samples from each monitoring sample to a certified laboratory at least once per year and electronically provide to DNR the results for total phosphorus, nitrate-nitrogen, and E. coli within 30 days after receipt.

The proposed rules delete a section of recommendations (existing rule 65.3(5)) that contain best practices for manure application.⁹⁸ While some of these recommendations relate to application rates that should be mandatory, including our recommended nitrate application rate changes to rule section 65.112(18)(c), other recommendations are not otherwise incorporated into rule. For example, existing rules advise on best practices for emergency application to frozen or snow-covered ground. DNR should adopt those as enforceable requirements. If DNR does not believe it has legal authority to adopt a particular recommendation as an enforceable standard, it should retain the provisions as recommendations. Including the recommendations in rule would demonstrate prudent and generally accepted management practices. While they may not be enforceable, they provide important information to manure applicators about how to minimize risks to water quality.

F. Use of Manure as a Soil Conditioner

The proposed rules reference manure sales for soil conditioners at proposed section 65.112(2). But section 65.1 does not define “soil conditioner” and the proposed rules do not address the widespread and dangerous use of soil conditioners derived from byproducts of AFOs.⁹⁹ The rules do not define the “processing” of manure that would reclassify it as a soil conditioner regulated under Iowa Code chapter 200, rather than rule chapter 65.¹⁰⁰ Allowing soil conditioners to be regulated separately, without defining what processing is required to qualify as a soil conditioner rather than manure, creates loopholes for manure application requirements. The proposed rules also fail to address or restrict manure from open feedlots sold for use as a soil conditioner. DNR must amend the rules to prevent AFOs from evading manure management regulations by reclassifying the manure as a soil conditioner.

⁹⁸ See existing rule 567 IAC 65.3(5); proposed rules at 31-32.

⁹⁹ Donnelle Eller, “Unbearably foul-smelling Iowa pit prompted complaints for weeks; state didn’t act until worker died,” Des Moines Register (Oct. 5, 2021), available at <https://www.desmoinesregister.com/story/money/agriculture/2021/10/05/algona-iowa-pit-fumes-no-violations-before-worker-death-pork-production-peptones/5826240001/>.

¹⁰⁰ See Iowa Code § 200.3(29) (defining unmanipulated manure to be manure that has “not been processed in any manner.”)

G. NPDES Permitting Requirements in Sections 65.3 and 65.202 Must Prevent Exceedances of Water Quality Standards.

As a state with delegated authority for National Pollutant Discharge Elimination System permitting, DNR must ensure that chapter 65 rules meet requirements under Clean Water Act section 402. DNR must also ensure facilities do not continue to discharge pollutants to surface water without a National Pollutant Discharge Elimination (NPDES) permit. Very few facilities – less than 2 percent – have obtained discharge permits under the Clean Water Act.¹⁰¹ In contrast, U.S. EPA estimates that 75 percent of CAFOs discharge as a result of their “standard operational profiles.”¹⁰² We have identified several issues regarding NPDES Permit compliance in proposed rule section 65.202:

- *Existing AFOs not holding a NPDES permit.* The April 14, 2003 date by which non-NPDES-permitted CAFOs needed to apply for a NPDES permit under proposed rule section 65.202(1) was nearly twenty years ago. We expect that at this juncture, Iowa has *no* CAFOs that fit in this category. However, the conspicuous lack of NPDES permits in effect for Iowa CAFOs indicates that CAFOs with obligations to apply for permit coverage have consistently failed to do so, and DNR has failed to adequately identify non-compliant facilities. If DNR has not done so, it must provide a specific plan with deadlines to address unpermitted, discharging CAFOs before the end of this Chapter 65 review process.
- *Expansion of existing AFOs.* Section 65.202(2) only applies to expansion of existing AFOs. DNR should modify this section to apply to expansion *and modification* of existing AFOs that meet the definition of a CAFO and discharge to waters of the United States.
- *Application forms and requirements.* A basic component of accountability for Iowans and the DNR should be to know who, or what, owns and influences Iowa’s agriculture. We suggest that the DNR’s application form under proposed rule 65.202(5) for a NPDES permit include disclosure of ownership interests, including the entities, their locations, their percentage ownership interest(s), and the beneficial owners of any entity owners.
- *Permit Conditions.* Subsection (c) of proposed rule 65.202(7) limits certain manure transfer requirements to “large” AFOs only. These manure transfer requirements should be applied to all CAFOs, regardless of size, in order to prevent point source pollution across the industry and across the state. We also suggest that DNR develop a robust waste transfer reporting form, which includes reporting of where the waste goes and is applied, not only who the waste is transferred to.

¹⁰¹ Iowa Code § 459.311(2) (requiring compliance with the Clean Water Act requirements for permits); IEC analysis of DNR AFO database, available at <https://programs.iowadnr.gov/animalfeedingoperations/>.

¹⁰² EPA, National Pollutant Discharge Elimination System (NPDES) Information Collection Rulemaking and CAFOs 1 (Sept. 2010).

- *Discharge Monitoring.* DNR should modify Section 65.202(7) to clarify that CAFO NPDES permits shall also contain monitoring conditions required by 40 CFR Section 122.48. CAFO NPDES permits that lack representative discharge monitoring from all discharge points, including production areas, hydrologic discharges via lagoons and pits, and land application areas, violate EPA’s regulations applicable to all NPDES permits.¹⁰³ We propose the following amendment to section 65.202(7):

65.202(7) Permit conditions. NPDES permits shall contain conditions required by 40 CFR Section 122.41, monitoring conditions required by 40 CFR Section 122.48, and conditions considered necessary by the department to ensure compliance with all applicable rules of the department, to ensure that the production area and land application areas are operated and maintained as required by Iowa law, to protect the public health and beneficial uses of waters of the United States, and to prevent water pollution from manure storage or application operations. Any more stringent conditions of Iowa Code chapter 459A, 567–subrule 62.4(12), and this chapter that apply to animal feeding operations AFOs shall govern. For CAFOs that maintain cattle, swine, or poultry, the following conditions shall be included...

- *Alternative Technology Systems.* We appreciate the addition of requiring monitoring for the entire operational life of AT systems under section 65.202(7). However, we do not believe that the option to reduce or revise monitoring requirements after the first five years is justified, and providing this option simply undercuts the lifetime monitoring in the first part of this provision. What is the expected operational life of an AT system? What is the basis behind a five year timeframe for reducing or revising monitoring? DNR should delete the rule language that ends monitoring requirements.

Furthermore, the proposed revisions to 65.202(7) in subsection (d) would eliminate and reduce significant monitoring provisions for AT systems, both in scope (e.g. tile lines) and timing (by reducing frequency). The rule already contains inadequate monitoring AT requirements and the proposed revisions would allow DNR to revise or reduce them further after 5 years. This renders AT monitoring requirements functionally meaningless. Monitoring is fundamental to understanding the operation of the system. Removing the monitoring prevents DNR from fulfilling its duty to regulate the facility and protect against water quality impacts. We urge DNR to not remove these monitoring provisions and to make the revisions proposed in these comments at section III.C.

Ensuring proper oversight of facilities as they expand and operate requires ongoing reporting and monitoring. We encourage DNR to develop a form for waste transfers, provide transparency for AFO ownership, and require ongoing water quality monitoring at AT systems.

¹⁰³ See *Food & Water Watch v. EPA*, 20 F.4th 506 (9th Cir. 2021) (finding EPA-issued Idaho CAFO General Permit unlawful for omitting required discharge monitoring provisions applicable to all NPDES permits).

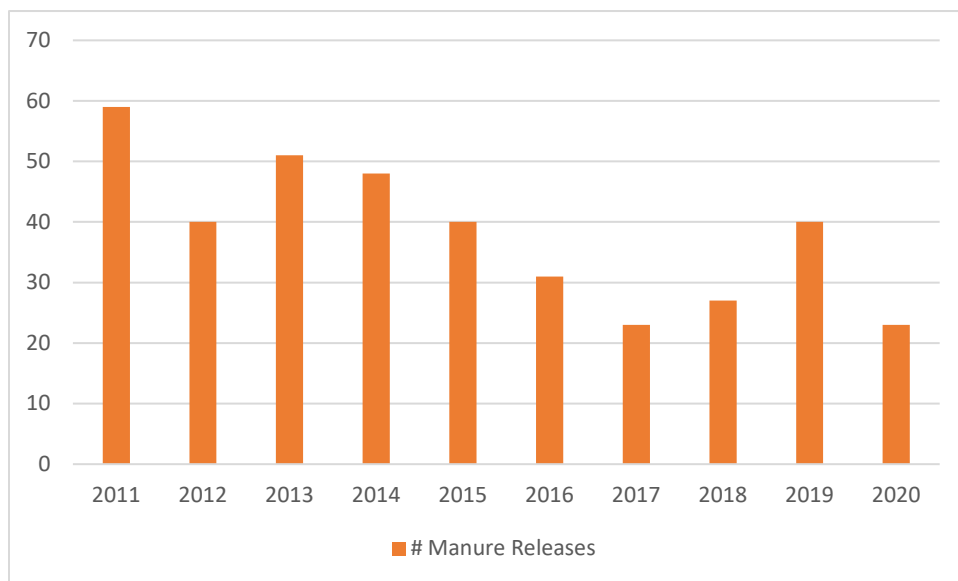
H. Noncompliance and Enforcement Regulations in Sections 65.2 and 65.4 Must Expand to Ensure Compliance.

DNR must also have the capacity to enforce the MMPs and prevent over-application of manure, which will require greater resources than it has today.

1. Release Reporting Requirements

Rule section 65.2 requires anyone aware of a manure release to report to DNR. DNR catalogs the releases in its Hazardous Spill Inventory database.¹⁰⁴ Over the last ten years, the total number of manure releases per year has somewhat declined,¹⁰⁵ but the number remains consistently above 20 releases per year.

Figure 5. Number of manure releases by year.



Although the release reporting rules apply only to manure, the definition of “release” includes various forms of manure with different likelihoods of reaching water.¹⁰⁶ A release of some type of process waste may have a different potential impact from settleable solids. The rule does not suggest or require identifying the form of manure. We recommend the following change to section 65.2(1)(c):

- (6) The source of the ~~manure allegedly released (e.g., formed storage, earthen storage)-release~~ **and the form of the manure or process waste released.**

¹⁰⁴ Available at <https://programs.iowadnr.gov/hazardousspills/introductory.aspx>.

¹⁰⁵ Calculated by IEC using information obtained through an Open Records Act request in December 2021.

¹⁰⁶ Proposed rule 65.1.

A substantial fraction of manure releases result from human error, which is the second most common cause, as shown in Figure 6. This frequency is troubling considering that DNR has a certification program for manure applicators. Pit overflows and surface runoff, which resulted in 38 releases, should also be avoidable.

Figure 6. Causes of Manure Releases, 2011-2020.¹⁰⁷

Cause of release	Releases	Subject to Manure Plan
Equipment Failure	147	75
Human Error	84	41
Transportation/Applicator Accident	64	20
Hose/Line Blockage	40	28
Pit Overflow/Surface Runoff	38	13
Rain/Flood Event	8	5
Other	2	0
Total	383	182

Despite many avoidable releases subject to MMPs or NMPs, no rule requires parties responsible for manure releases to undertake training or continuing education after a release. DNR may discipline certified manure applicators for violating rules,¹⁰⁸ including probation and education. DNR should require training and education for repeat violators, subject to increasing fines and probation for repeated releases and rule violations.

We support DNR’s proposed deletion of waiver language in part “e” of the rule. Iowa Code chapters 459, 459A, and 459B do not provide for waivers of reporting releases. We also support deletion of the word “alleged” throughout part “c” of the rule.

2. *Complaint Investigations and Enforcement*

DNR has adopted enforcement priorities for AFOs, including violations that lead to acute or serious water quality degradation, discharges that are not authorized by an NPDES permit, and unauthorized construction.¹⁰⁹ Of the 389 manure spill events identified by DNR in the last ten years, DNR has tracked just over half for enforcement purposes. Several parties have repeatedly reported manure releases. The repeated violations show that enforcement responses have not been sufficient to bring the responsible parties into compliance.

¹⁰⁷ Calculated by IEC using information obtained through an Open Records Act request in December 2021.

¹⁰⁸ 567 IAC 65.19(9); proposed rule 65.113(9).

¹⁰⁹ “Enforcement Management System,” Iowa DNR (rev. 2019), at 14, available at <https://www.iowadnr.gov/Portals/idnr/uploads/Enforcement%20Actions/EMS.pdf>.

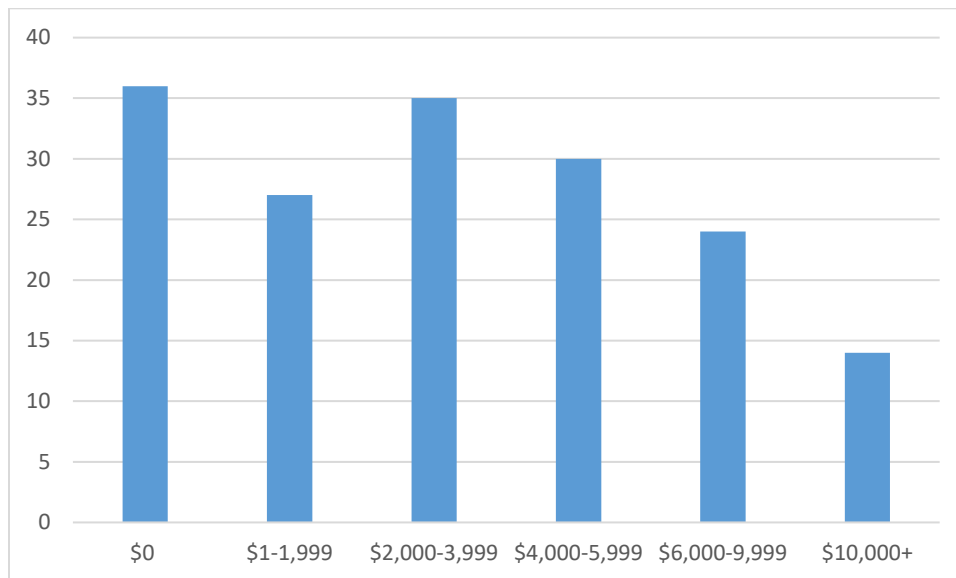
Figure 7. Most frequent responsible parties for manure releases, 2011-2020.

Responsible Party	Number of Releases	Total Manure Released (gal)
Maschhoffs Inc.	8	>12,527*
Iowa Select Farms	8	>24,201*
Cyclone Cattle	8	
Unknown	7	>4,053*
Catnip Ridge Manure	5	>781*
Neese Inc.	5	9,100
Tres M	4	7,500
Prestage Farms of Iowa	4	59,000
Precision Pumping LLC	4	15,500

* Some releases did not have estimated volumes.

The lack of compliance may result from penalties that do not incentivize changes to practices. IEC analysis of DNR enforcement data found that many releases had no penalty associated. Among cases with a penalty, the median was \$4,000, which is not likely sufficient to substantially change practices. Making matters worse, state law prevents DNR from taking enforcement action other than a penalty for violations of a manure management plan.¹¹⁰ Historically, DNR penalties have tended toward the lower end of the penalty range for manure releases, as shown in Figure 8 below.¹¹¹

Figure 8. Histogram of DNR enforcement penalties for manure releases, 2011-2020.



Several examples show that these modest penalties are not adequately deterring future violations.

¹¹⁰ IOWA CODE § 459.312; *see* IOWA CODE § 459.603 (allowing civil penalties).

¹¹¹ IEC analysis of DNR manure discharge and enforcement data (retrieved Aug. 2021).

DNR imposed two enforcement actions for the maximum administrative penalty of \$10,000 on Supreme Beef. Similarly, Cyclone Cattle (with eight total releases) had enforcement in 2011 due to manure releases. It then had multiple releases that reached surface water in 2016, followed by administrative penalties. Cyclone Cattle then had two more releases in 2019 that reached surface water. DNR should pursue higher penalties or more serious enforcement action, such as more frequent referrals to the Attorney General for civil action, in order to improve conduct and operations of regulated parties.

The proposed rules at section 65.4 consolidate several complaint procedures from existing rule sections.¹¹² The rules would prevent county boards from investigating complaints of violations of Iowa Code and administrative rules.¹¹³ It is unclear how a county board should proceed if it expects violations of local ordinances that may, at the same time, reflect on compliance with state law or rules. For example, an open feedlot constructed in a location zoned for other land uses may violate local ordinances. In determining whether the AFO complies with local ordinances, it may become clear that the AFO also violates state rules. To address such situations, we recommend the following change to section 65.4(a):

If after evaluating a complaint to determine whether the allegation may constitute a violation, without investigating whether the facts supporting the allegation related to violations of Iowa Code or this chapter are true or untrue, the county board of supervisors shall forward its finding to the department director.

Iowa Code limits public access to records of compliance with MMPs, making them exempt from the Open Records Act in Iowa Code chapter 22.¹¹⁴ MMPs themselves are publicly available documents and are not exempt from the requirements of chapter 22. The proposed rules at 65.4(g) nonetheless restrict access to MMPs when county officials participate in a DNR investigation: “The county shall not have access to records required in subrule ~~65.17(12)~~–65.112(12) or the current manure management plan-MMP maintained at the facility.” This wording unduly restricts access to the MMPs, not just the records of compliance.

DNR may have intended to exclude documents related to the “current” MMP because modifications to the MMP only have to be submitted to DNR annually; updates since the last annual submission are not yet in DNR’s possession. But the MMPs and updates are not protected as confidential under section 459.312(12), will have to be submitted to DNR anyway, and serve an important public purpose when they are the subject of a complaint investigation. DNR does not have a basis to prevent county officials from accessing the current MMP, and public policy weighs in favor of giving access. We recommend the following changes to section 65.4(g):

¹¹² Proposed section 65.4 incorporates procedures in existing sections 65.10, 65.113, and 65.209.

¹¹³ Proposed section 65.4(a) (requiring county boards to forward complaints “without investigating whether the facts supporting the allegation are true or untrue”).

¹¹⁴ IOWA CODE § 459.312(12).

g. A county employee accompanying the department on a site investigation has the same right of access to the site as the department official conducting the investigation during the period that the county designee accompanies the department official. The county shall not have access to records required in subrule 65.17(12)-65.112(12) or the current manure management plan-MMP maintained at the facility.

The continued releases of manure and noncompliance subject to complaints are important sources of water quality pollution in the state. DNR should strengthen the provisions of sections 65.2 and 65.4 to minimize the likelihood and impact of future releases.

V. DNR Must Adopt Stronger Construction Requirements to Protect Water Quality

State law requires new large confinement operations to complete a “master matrix” scoring system, which overrides any local objection to the facility.¹¹⁵ A passing score will allow the confinement CAFO to be built. Open feedlots often need no permit at all, except perhaps for a manure lagoon, and are subject to different requirements from confinements.¹¹⁶ The legal distinction between confinements and open feedlots does not necessarily reflect the practices at the facilities, because “open feedlots” may be almost completely roofed and handle manure like a confinement operation.¹¹⁷ Very few facilities – less than 2 percent – have obtained discharge permits under the Clean Water Act.¹¹⁸ For both confinements and open lots, construction requirements provide important protections against releases to Iowa’s public waters.

DNR must revise the rules to address several aspects of construction requirements to protect water quality. First, the proposed revision to the definition of anaerobic digesters has broad implications that the proposed rules fail to address. Second, DNR needs to close loopholes in the triggers for construction permits to prevent unregulated expansions. Finally, DNR must strengthen manure storage standards to prevent highly concentrated discharges from manure storage structures.

A. Anaerobic Digester Systems as Defined in Section 65.1 Require Additional Regulation.

The proposed changes to Section 65.1 alter the definition of “anaerobic digester system” to characterize anaerobic digester systems as “manure storage structure that is covered”, which is a step in the right direction. However, the rules would require the anaerobic system to be covered only “if the primary function of the manure storage structure is to process manure by employing environmental conditions including bacteria to break down organic matter in the absence of oxygen, and is used for producing, collecting, and utilizing a biogas.” First, *all* anaerobic systems, regardless of purpose and function, should be covered to protect the system from weather impacts

¹¹⁵ IOWA CODE § 459.305.

¹¹⁶ IOWA CODE § 459A.205; *see* § 459A.202 (requiring operating permits but repealed by its own terms per 2006 Acts, ch 1088, §2).

¹¹⁷ *Cf.* IOWA CODE §§ 459.102 (defining “confined feeding operation” as being totally roofed); 459A.102 (defining “open feedlot operation” as an “unroofed or partially roofed animal feeding operation”).

¹¹⁸ IOWA CODE § 459.311(2) (requiring compliance with the Clean Water Act requirements for permits); IEC analysis of DNR AFO database, available at <https://programs.iowadnr.gov/animalfeedingoperations/>.

and to protect local communities from odors and overflows. Second, Iowa DNR’s proposed Rule 65.1 has expanded the definition of what constitutes an anaerobic digester system from one that just “produces” methane gas (also called biomethane, or factory farm gas) to one that also collects and utilizes a biogas, which raises several concerns and questions. We recognize the DNR simply adopted the definition in statute, but the incorporation of anaerobic digesters in chapter 65 highlights the need for industry-specific regulation.

Iowa DNR has not clarified how biomethane production at AFOs or CAFOs is regulated in the state, nor has DNR provided any legal justification for how the production of biomethane is a permissible activity at livestock operations regulated under chapter 65. The DNR has regulated anaerobic digesters under industrial wastewater regulations.¹¹⁹ The Clean Water Act NPDES CAFO permit structure is designed to provide terms and conditions to address the impacts of livestock operations and livestock waste on water; it is not designed to regulate an entirely separate industrial product. Nor do AFOs producing biomethane reduce the quantity of manure animals produce, so it is not a manure reduction or manure storage “solution” that ties into waste and nutrient management governed by the Clean Water Act NPDES CAFO Permit framework. Every step of the biomethane production process actually increases pollution and risks to water quality.

Any biomethane production activities should be subject to separate, industry-specific rules and regulations and permitting; they should not be shoehorned into livestock production regulations. Other laws do not directly apply, leaving an enormous regulatory gap that exposes Iowa’s waters and public to pollution. For example, Iowa Code includes anaerobic digestion systems in its definition of “waste conversion technologies” in the state’s Solid Waste Disposal laws,¹²⁰ but this statute only covers the *disposal* of solid wastes. It does not address the production, collection, or utilization of biomethane.¹²¹ And, similarly, Iowa’s oil and gas statutes focus on “prevent[ing] waste”; while Iowa Code does say that “underground and surface water” is to “be protected from pollution and conserved in the best interests of the people of the state” (Iowa Code § 458A.1), this is not the same as the more stringent “no discharge” requirement for CAFOs under the Clean Water Act and rule Chapter 65.¹²²

Further, DNR is now proposing through these revisions to Chapter 65 to expand allowed activities from production to also include collection and utilization of biomethane. If DNR is determined to proceed down this route, then DNR must do the work to develop a full-fledged regulatory program, including specific rules and guidance documents, which are supported by program staff and enforcement staff, and include technical training requirements for AFO staff in the maintenance and operation of biomethane system management. Biomethane production, collection, and utilization is too operationally complex, too complicated from an engineering standpoint, and too dangerous, to simply allow livestock operations and private companies to “figure it out” without

¹¹⁹ An earlier iteration of Supreme Beef, then known as Walz Energy, received approval for its manure storage as an industrial wastewater facility.

¹²⁰ IOWA CODE § 455B.301(30).

¹²¹ See IOWA CODE § 455B.301A(1).

¹²² See, e.g., Rule 65.100(1), (4).

state oversight and enforcement.¹²³ Seven years ago, the American Biogas Council estimated that Iowa biomethane would skyrocket from 63 to 1,040 new agriculture-based projects, most of which were swine biomethane systems.¹²⁴ That expansion did not materialize. EPA’s AgStar database shows only four digesters in the state, but that does not reflect all digesters permitted by DNR.¹²⁵ At this point, if numerous facilities are using anaerobic digestion to produce biomethane in Iowa, the DNR can no longer ignore the activity, or its risks, and a thorough regulatory, permitting, and programmatic support is required from the agency.

The biomethane process produces methane gas, but the digested solid and liquid manure waste must still be disposed of afterwards. Some facilities use the leftover liquid manure and solid manure in farm management activities, e.g., land application, bedding, and compost. However, anaerobic digesters do not eliminate nitrogen and phosphorus loads in digested manure; on the contrary, according to NRCS they make nutrients in CAFO waste more soluble and therefore more susceptible to runoff to surface waters and leaching into groundwater.¹²⁶ Iowa AFOs employing anaerobic digesters, or digested waste, cannot control pollution from their facilities if the rules and permits themselves do not account for the difference in waste streams under their control at their operation.

Additionally, just as feed influences the kind and nature of manure available for land application at an AFO, and how and when it can be land applied, the feed given to livestock influences the kind of manure available for use in an anaerobic digester. Are AFO operators required to feed their cattle with Clean Water Act and Chapter 65 land application requirements in mind, or the economic efficiency of their expensive anaerobic digester? And, creating the proper consistency of digestate waste may require adding even more water to the gas production process; in parts of Iowa that are experiencing drought, the use of water for this biomethane production process should be addressed through regulatory oversight and reporting mechanisms. We encourage DNR to use this Chapter 65 review process as an opportunity to keep AFO operators’ focus on water protection.

Once a facility produces biomethane, significant additional problems arise as the methane gas is difficult to store, requires special equipment to be compressed, and can be explosive if exposed to

¹²³ See, e.g., Agricultural Anaerobic Digesters: Design and Operation, PennState Extension (Dec. 1, 2016), <https://extension.psu.edu/agricultural-anaerobic-digesters-design-and-operation> (listing disadvantages of digesters including: complex equipment, the need for strict explosion-proof standards, precise temperature controls, and high standards of maintenance and management required); 40 C.F.R. § 412.4.

¹²⁴ See https://americanbiogascouncil.org/wp-content/uploads/2019/03/ABCBiogasStateProfile_IA-2.pdf

¹²⁵ Cf. U.S. EPA, “Livestock Anaerobic Digester Database,” available at <https://www.epa.gov/agstar/livestock-anaerobic-digester-database> (last visited October 3, 2022) (showing four facilities in Iowa); Erin Jordan, “Nine Iowa dairies get digester permits since new law, seven plan expansion,” *The Gazette* (Dec. 3, 2021), available at <https://www.thegazette.com/agriculture/nine-iowa-dairies-get-digester-permits-since-new-law-seven-plan-expansion/>.

¹²⁶ See NRCS, 366-CPS-1, Conservation Practice Standard No. 366: Anaerobic Digester, at page 6 (Oct. 2017) (“Land application of digester effluent, compared with fresh manure, may have a higher risk for both ground and surface water quality problems. Compounds such as nitrogen, phosphorus, and other elements become more soluble due to anaerobic digestion and therefore have higher potential to move with water.”).

air.¹²⁷ Transportation or conveyance of the manure to the digester can cause discharges, leaks, and spills. For example, earlier this year, a brand new cattle digester in Iowa leaked 376,000 gallons of manure mixed with water directly into the ground over the course of three weeks.¹²⁸ Operators noticed the liquid levels dropped in the digester, but did not investigate, and continued to add waste to the digester. Eventually someone saw manure flowing into a nearby creek. Other examples include:

- In 2008, a large dairy in Wisconsin promised the community that “a manure digester would keep their neighborhood footprint small.” However, a decade later, the groundwater is contaminated with nitrates. A lawsuit was filed and the Wisconsin dairy has had to supply the community with bottled water.¹²⁹
- In 2016, a digester spilled in the United Kingdom, causing the deaths of livestock and wildlife for miles around.¹³⁰
- In 2014, a manure digester near Waunakee, Wisconsin malfunctioned, causing a gas explosion and fire. Subsequent disclosures exposed a string of challenges at the facility.¹³¹
- In early 2019, a Michigan prized trout stream turned “ink black” after at least 10,000 gallons of digested waste were applied on snow-covered and frozen ground.¹³²
- In July 2019, a manure digester tank in Tillamook, Oregon spilled 300,000 gallons of waste into Anderson Creek, a tributary of the Tillamook River.¹³³

¹²⁷ See, e.g., See Agricultural Anaerobic Digesters: Design and Operation, PennState Extension (Dec. 1, 2016), <https://extension.psu.edu/agricultural-anaerobic-digesters-design-and-operation> (listing disadvantages of digesters including: complex equipment, the need for strict explosion-proof standards, precise temperature controls, and high standards of maintenance and management required); 40 C.F.R. § 412.4.

¹²⁸ See, e.g., Strong, J. “Company Filled Massive Manure Container Despite Signs of A Leak, DNR Says.” *Iowa Capital Dispatch* (July 6, 2022), <https://iowacapitaldispatch.com/2022/07/06/company-filled-massive-manure-container-despite-signs-of-a-leak-dnr-says/> (Notably, this CAFO had 2,400 head but needed to find access to another 17,600 cows’ manure to even make the digester an option).

¹²⁹ See, e.g., Madden, K., “Juneau County Lawsuit: Dairy Companies Knew They Were Contaminating Groundwater, Wells,” *Wisconsin Rapids Daily Tribune* (Jan. 7, 2019), available at <https://www.wisconsinrapidsdailytribune.com/story/news/2019/01/07/nitrate-pollution-juneau-county-residents-sue-central-sands-wysocki/2435677002/>

¹³⁰ Rose, D. “The Great Green Guzzler.” *Daily Mail* (Dec. 31, 2016), available at <https://www.dailymail.co.uk/news/article-4078820/The-great-green-guzzler-Monster-digesters-meant-guzzler-wastechurn-eco-friendly-energy-fed-CROPS-produce-pitiful-levels-power-cost-216m-subsidies-HARMenvironment.html>

¹³¹ Verburg, S. “Blast Destroys Roof of Troubled Biogdigester Near Waunakee.” *Wisc. State J.* (Aug. 6, 2014), available at https://madison.com/news/local/environment/blast-destroys-roof-of-troubled-biogdigester-near-waunakee/article_4e5a7c0a-3a39-5b90-a225-b99dabfd37d1.html

¹³² Kransz, M. “Manure Spill Turns Portions of West Michigan Trout Stream ‘Ink Black’,” *MLive* (Mar. 21, 2019), available at <https://www.mlive.com/news/grand-rapids/2019/03/manure-spill-turns-portions-of-west-michigan-trout-stream-ink-black.html>

¹³³ Dixon Kavanaugh, S, Manure Spill Splashes 300,000 Gallons Near Tillamook Bay, *Oregonian* (July 23, 2019), available at <https://www.oregonlive.com/news/2019/07/manure-spill-splashes-300000-gallons-near-tillamook-bay.html>

- In the spring and summer of 2022, a hog CAFO with an anaerobic digester discharged at least 3 million gallons of a “gelatinous gray foam” which spread across the farm and at least 37,000 gallons reached nearby wetlands. The spill went unreported for weeks, even while the state issued the facility for a permit renewal, and was only made public after citizens conducted a fly-over.¹³⁴

All of these consequences of the biomethane production process must be regulated more stringently, and Iowa’s Chapter 65 review is the *minimum* ground-level place to begin to manage the production, collection, and utilization of anaerobic digestion systems in this manner.

Other states have already acknowledged the problems anaerobic digester systems pose at CAFOs, have incorporated provisions into their CAFO rules and permits, and established entirely separate permits required for digester systems to prohibit unpermitted discharges from digesters. North Carolina, for example, developed permits for cattle, dairy, swine, and (liquid waste) poultry operations.¹³⁵ Other states, e.g., Michigan, are requiring CAFOs with anaerobic digesters to obtain individual permits and do not allow them to be covered under the CAFO general permit.¹³⁶ While we believe biomethane production, collection, and utilization speaks to a completely different industrial process cycle than raising livestock and requires a wholly separate regulatory structure, at a minimum, Iowa should consider establishing baseline rules as part of the Chapter 65 review process.

For several reasons, biomethane facilities should be separately regulated, and we request that Iowa amend the draft rules to begin to regulate biomethane and develop programmatic and enforcement support. Through the commenters’ work with communities in Iowa, we are aware of an increasing number of operations that are producing, or considering producing, collecting, or using, biomethane. We are also aware that for biomethane production to be economically viable, most farmers and CAFO operators need to increase their herd size for the sole purpose of producing more manure to pay for a fancy piece of equipment; this does not correlate to traditional reasons a farmer may elect to change herd size (e.g., agricultural market changes or animal husbandry concerns). Failure of the DNR to regulate biomethane is to allow a regulated activity to occur without a permit; the proposed Chapter 65 review process is an opportunity for the DNR to close this loophole.

¹³⁴ Wagner, A. “Really terrible science experiment leads to weeks-long spill from NC hog-waste lagoon.” *News Observer* (Sept. 6, 2022), available at <https://www.newsobserver.com/news/state/north-carolina/article264779224.html>

¹³⁵ See North Carolina Department of Environmental Quality, 2022 Digester System General Permits at <https://deq.nc.gov/digesterpermits>. Although North Carolina developed industry-specific regulations, those regulations do not adequately protect people and natural resources. See Southern Environmental Law Center, “Challenge says N.C. permit for hog waste methane gas operations entrenches pollution and harms to communities” (July 29, 2022), available at <https://www.southernenvironment.org/press-release/challenge-says-n-c-permit-for-hog-waste-methane-gas-operations-entrenches-pollution-and-harms-to-communities/>.

¹³⁶ See, e.g., Michigan Dept. of Env. Quality, Great Lakes, and Energy, “Anaerobic Digesters – FAQs,” available at https://www.michigan.gov/egle/-/media/Project/Websites/egle/Documents/Programs/WRD/CAFO/An_aerobic-Digesters-Part31-CAFO-NPDES-Permit.pdf?rev=03a34efcc2c447a8bfd2f7b26daec36a&hash=90444FE54266B262E5F2F5389A6B7CDD

As a final point on this issue, methane produced by CAFOs is also characterized as a “biogas” or a “clean” or “renewable” source of energy. None of these terms mean that production processes to create this energy have low emissions, that the processes themselves are “clean” or “green”, or that there are minimal to no emissions, air quality concerns, greenhouse gas, or climate concerns related to the production and use of this energy.¹³⁷ The process of producing and using the gas emits the same greenhouse gasses and other air pollutants as other fossil fuels, e.g., CO₂, NO_x, ammonia, hydrogen sulfide, and formaldehyde. While these can be regulated under air permitting frameworks, the on-site equipment and use of digestate leftovers is within the realm of Clean Water Act permitting and Chapter 65, as is the aerial deposition of these air emissions into waters of the state.

To correct the gaps in oversight identified above, DNR can use the Chapter 65 review process to begin to address anaerobic digestion systems’ regulation, and not simply expand the definition of the process without accompanying supportive regulation. Some of the examples above show that DNR can establish a new permit system for anaerobic digesters, require individual permits for anaerobic digesters and digested waste use, and DNR can simply prohibit the land application of digested CAFO waste as too risky. Alternatively, and at a minimum, Chapter 65 must clearly instruct CAFOs how to account for digested waste’s unique nutrient content before permitting land applications of this waste, and in nitrogen and phosphorus calculations—and require that they do so, along with other permit reporting requirements. Chapter 65 must also require digester inspections and sampling (whether or not the waste is land applied) and require specific operational safety requirements to minimize the risks of accidents and spills. DNR must additionally outline criteria and processes for digester siting, design, approval, and operation procedures. These, along with BMPs and effluent limitations, are necessary to protect Iowa’s waters.

B. Construction Permit Triggers in Proposed Section 65.103 and 65.203 Allow Evasion of the Rules.

Construction permits serve as the primary trigger for DNR oversight of new AFOs. Many requirements in the existing and proposed rules rely on a construction permit, either for construction requirements or for ongoing oversight of the facility. Unfortunately, AFOs that can substantially affect water quality can avoid construction permit triggers.

Proposed rule 65.103(1) defines the types of confinement operations that must obtain a construction permit before initiating construction or purchase of AFO structures. Most of the requirements align with the statutory requirements in section 459.303, which limits application of construction permits.¹³⁸

Proposed rule 65.103(2) lists exceptions to the general requirement to obtain a construction permit. One of the exceptions is for a small AFO (SAFO) with a formed manure storage structure. We

¹³⁷ See, e.g., “Anaerobic Digesters,” Vermont Department of Environmental Conservation, available at <https://dec.vermont.gov/air-quality/permits/source-categories/anaerobic-digesters>

¹³⁸ Proposed rule 65.103(1)(a)(2).

recommend modifying the language of this section to avoid an ambiguous interpretation and to ensure that SAFOs operating in conjunction with other AFOs acquire a permit:

a. A construction permit shall not be required for a SAFO that uses a formed manure storage structure or for a confinement building that uses a formed manure storage structure in conjunction with a ~~small animal feeding operation SAFO~~. However, this paragraph shall not apply to a ~~small animal feeding operation SAFO~~ that uses an unformed manure storage structure. A SAFO under common ownership or operating in conjunction with another AFO must obtain a permit if the total animal unit capacity exceeds 1000.

Supreme Beef provides an example of a different evasion of construction permit triggers. Supreme Beef initially proposed to install an anaerobic digester that would capture methane. DNR issued the facility a wastewater construction permit rather than a feedlot construction permit. Years later, Supreme Beef changed its approach, removed the anaerobic digester, and proposed to use the manure storage structure as an open basin. But DNR did not require an additional approval to ensure the site met the AFO construction requirements and Supreme Beef never applied for an AFO construction permit. This loophole results from the statute only requiring construction permits for open lots that must obtain an NPDES permit.¹³⁹

Unfortunately, the statutory provisions in chapter 459A preclude DNR oversight for thousands of open feedlots. Combined with the statutory threshold of 1,000 animal units for manure planning, facilities have an incentive to build just below the threshold to avoid construction permitting and manure planning regulations. We recommend DNR undertake efforts to remove the statutory thresholds, which limit DNR's oversight to only 41 percent of documented AFOs in the state.¹⁴⁰ The lack of regulation led DNR to discover that thousands of AFOs below this threshold existed without DNR's knowledge.¹⁴¹ Failure to follow construction permitting requirements can have serious consequences, as shown by the 376,000 gallon release from Winding Meadows Dairy earlier this year.¹⁴² These types of violations occur even when developers know about the permitting requirements.¹⁴³

¹³⁹ Iowa Code § 459A.205(4).

¹⁴⁰ IEC analysis of data from DNR's AFO database (July 2021), available at <https://programs.iowadnr.gov/animalfeedingoperations/>.

¹⁴¹ Donnelle Eller, "Iowa uses satellites to uncover 5,000 previously undetected animal confinements," Des Moines Register (Sept. 15, 2017), available at <https://www.desmoinesregister.com/story/money/agriculture/2017/09/15/iowa-discovers-thousands-more-hog-cattle-operations-state-says-most-likely-too-small-require-oversig/665956001/>.

¹⁴² Erin Jordan, "Northwest Iowa dairy fined \$10K for 376,000-gallon manure spill," The Gazette (Jul. 8, 2022), available at <https://www.thegazette.com/agriculture/northwest-iowa-dairy-fined-10k-for-376000-gallon-manure-spill-from-digester-into-paddling-creek/> (citing failure to comply with construction certification requirements).

¹⁴³ Jared Strong, "Company with major manure leak didn't get permit to build other facility, DNR says," Iowa Capital Dispatch (July 22, 2022), available at <https://iowacapitaldispatch.com/2022/07/22/company-with-major-manure-leak-didnt-get-permits-to-build-two-facilities-dnr-says/> (citing failure to obtain a permit by the same owner as Winding Meadows Dairy).

C. DNR Must Strengthen Storage Design Requirements and Monitoring in Proposed Section 65.109.

DNR proposed to change manure storage structure design requirements related to inspection trenches for tile lines, core trenches, tile lines lowering groundwater, earthen basin storage capacity, berm requirements for unformed manure storage structures, and concrete standards. Although several changes appear to increase the safety of these large structures, many will reduce protection for water quality.

The proposed rules at section 65.109(1)(c) would allow tiles located under the manure storage structure to remain in place during operation of the facility, provided that they are tied into the perimeter drain tile. This requirement would directly connect any leaks from the facility to the drain tile that lowers the groundwater. As proposed by DNR, this is a recipe for disaster because it ensures that any leak quickly reaches surface water. This system could act as a leak detection system, but the rules do not require frequent monitoring. Moreover, tying the tiles under the facility to the perimeter tiles will make it more difficult to isolate the source of a leak. DNR should not adopt such an egregious change. We recommend the following change to 65.109(1)(c):

The applicant for a construction permit for a formed manure storage structure shall investigate for tile lines during excavation for the structure. Drainage tile lines discovered upgrade from the structure shall be rerouted around the formed manure storage structure to continue the flow of drainage. All other drainage tile lines discovered shall be rerouted, capped, plugged with concrete, Portland cement concrete grout or similar materials. Drainage tile lines installed at the time of construction to lower a groundwater table may remain where located even if located under the floor; however, the tile lines must be plugged with concrete or grout-tied into the perimeter drain tile.

DNR proposes to specify a minimum storage capacity for earthen manure storage basins in an addition to section 65.109(4). Although the basins must only be emptied once per year, the minimum required capacity is only eight months. While this makes sense for basins emptied semiannually, the rule does not specify that basins with eight months of capacity must be emptied twice per year. This invites a self-created emergency in which the operator must land-apply manure in winter months on frozen or snow-covered ground. DNR should specify that the eight month minimum only applies when the facility has a written plan for semiannual land application under section 65.112 or 65.208. We propose the following modification to section 65.109(4):

65.109(4) *Earthen manure storage basins.* An earthen manure storage basin shall have accumulated manure removed at least once each year. An earthen manure storage basin must have enough manure storage capacity for 8 months if the MMP or NMP for the facility includes semiannual manure application and may have enough manure storage capacity to contain the manure from the confinement

feeding operation for up to 14 months and maintain freeboard as determined pursuant to ~~65.2(3)“b.”~~ 65.100(1)”b.”

Unformed manure storage structures must have berms to contain manure and ensure adequate freeboard that prevents overtopping.¹⁴⁴ Manure releases have resulted from breached basins at both confinements and open lots in Iowa.¹⁴⁵ DNR has proposed additional criteria for the berms that will ensure the berms do not erode and do not have steep slopes. We support these criteria in proposed rule 65.109(7) because they reduce the risk of overtopping or breaches of earthen berms. We also support the language proposed in rule section 65.206(7) setting minimum standards for settled open feedlot effluent basins.

In section 65.206(2), DNR has proposed changes to the soil drilling methods that determine the soil profile. The intent appears to be to create a continuous sediment core to bedrock, which allows the driller to evaluate intact (or at least unmixed) soil layers. DNR should specify that when using hollow stem augers, the driller must use a core barrel to actually get a continuous core. Merely using the specified auger and pulling up the cuttings will not produce a continuous sediment core for the driller to examine, and instead will mix the soil layers. We recommend the following change to section 65.206(2)(c)(3):

(3) By methods which identify the continuous soil profile and do not result in mixing of soil layers. Soil ~~corings~~ borings using hollow stem augers with a core barrel and other suitable methods that do not result in soil layer mixing may be used.

DNR should make the same change to sections 65.207(4)(c)(3) and 65.304(2)(c)(3), which contain the same language for AT systems.

VI. DNR Should Improve Public Process and Transparency

A. DNR Must Close Loopholes in Common Ownership Under Section 65.1 and 65.104 (LLC loophole).

Under statute, common ownership of adjacent AFOs allows the facilities to be treated as a single unit, because that is likely how they are operated in fact.¹⁴⁶ Treatment as a single, larger operation can trigger regulatory oversight not applicable to small AFOs. As described in comments submitted by Jefferson County Farmers and Neighbors, Inc., many CAFOs in Jefferson County should be treated as a single site, but are owned by separate limited liability corporations. Even if these LLCs have common ownership, the AFOs avoid regulatory oversight. To close the LLC loophole for adjacent CAFOs, we recommend the rule specify that an owner’s interest in an LLC or other corporation falls within the definition of “owner”:

¹⁴⁴ Proposed rule 65.109(7).

¹⁴⁵ See, e.g., DNR HSI spill nos. 053019-WSW-1300, 110415-JFP-0900.

¹⁴⁶ See IOWA CODE § 459.301(1).

“Owner” means the person who has legal or equitable title to the property where the confinement AFO is located or the person who has legal or equitable title to the confinement AFO structures. “Owner” does not include a person who has a lease to use the land where the confinement AFO is located or to use the confinement AFO structures. “Owner” includes a person’s ownership interest in a partnership or corporation with legal or equitable title to the property.

In addition, the name of the corporation that owns the livestock (integrator) should be included in order to ascertain if there is common management. We recommend the following language for section 65.104(1):

~~65.9(1)~~ **65.104(1)** *Construction permit application.* Application for a construction permit for a confinement feeding operation shall be made on a form provided by the department. The application shall include all of the information required in the form. At the time the department receives a complete application, the department shall make a determination regarding the approval or denial of the permit in accordance with subrule ~~65.10(5)~~ 65.106(5). A construction permit application for a confinement feeding operation shall be filed as instructed on the form and shall include the following:

a. The name of the applicant and the name of the confinement feeding operation, including mailing address and telephone number.

b. The name of the current landowner or the proposed landowner of the land where the confinement feeding operation will be located. For a corporate landowner, provide the names of all parties with an interest or controlling interest in the corporation.

~~b.c.~~ The contact person for the confinement feeding operation, including mailing address and telephone number.

d. The name of the corporation that owns the livestock (integrator).

...

~~k.l.~~ The names of all parties with an interest or controlling interest in the confinement feeding operation who also have an interest or controlling interest in at least one other confinement feeding operation in Iowa, and the names and locations of such other operations along with the official legal business documents for the LLC listing each owner and their percent of ownership along with the signature page.

DNR could also require a signed affidavit from the applicant regarding the ownership interest. In the alternative, DNR should make clear that statements made to DNR in a construction permit application are required under Iowa Code chapter 455B, subchapter 3, part 1, and that the penalties in Iowa Code section 455B.191 apply. Providing the additional information and clarifying that common ownership interests in multiple LLCs owning otherwise adjacent AFOs is shared ownership and renders the adjacent facilities a single AFO for purposes of Chapter 65 will close this longstanding loophole.

B. DNR Should Clarify Transfer of Title Notification in Section 65.5.

Proposed section 65.5 addresses transfers and the notifications required. We recommend clarifying the notification to DNR must be in writing, not a phone call, and to provide notice to the public. We also recommend specifying that the master matrix must be completed by the transferee and provided to the county, if applicable. We recommend retaining the existing language limiting transfers during a pending enforcement action, but specifying it applies to civil enforcement actions, to implement Iowa Code section 459.317(2)(a). We recommend the following changes to the language of proposed rule 65.5:

567—65.5(459, 459A, 459B) Transfer of legal responsibilities or title. If title or legal responsibility for a permitted animal feeding operation-AFO or an animal truck wash is transferred, the person to whom title or legal responsibility is transferred shall be subject to all terms and conditions of the construction permit and these rules. The person to whom the construction permit was issued and the person to whom title or legal responsibility is transferred shall notify the department in writing of the transfer of legal responsibility or title of the operation within 30 days of the transfer. The person to whom responsibility is transferred shall publish a public notice containing the information in section 65.106(2)(a) in a newspaper having general circulation in the county. The director shall post notice of the transfer on the department's website. Within 30 days of receiving a written request from the department, the person to whom legal responsibility is transferred shall submit to the department all information needed to modify the construction permit to reflect the transfer of legal responsibility. If the transfer results in a facility under common ownership exceeding 1000 animal units, the transferee shall complete the master matrix and present the results to the county according to the procedures in section 65.106. A person who has been classified as a habitual violator under Iowa Code section 459.604 shall not acquire legal responsibility or a controlling interest to any additional permitted confinement feeding operations for the period that the person is classified as a habitual violator. A person who has an interest in a confinement feeding operation and who is the subject of a pending civil enforcement action shall not acquire legal responsibility or an interest to any additional permitted confinement feeding operations for the period that the enforcement action is pending.

The proposed changes ensure DNR and the county will have a record of the transfer and that the owner cannot bypass the obligation to complete a master matrix.

C. DNR Must Enforce Master Matrix Obligations in Section 65.106.

The Master Matrix is a scoring system to site confinement operations in the state. Several pieces of the matrix provide additional points for approval based on operational practices, such as

increasing setbacks for manure application beyond the legal minimum.¹⁴⁷ These commitments create an ongoing obligation for the facility. The proposed rules provide no method for reporting to DNR, demonstrating compliance to the public, or enforcing the requirements. We propose the following addition at section 65.106(10):

65.106(10) Ongoing master matrix obligations. A confinement that receives points for its score on the master matrix based on operational practices must submit records of compliance with those practices to DNR at least annually.

Without this component, DNR and the public have no assurance that the AFO fulfills its commitments for the duration of its operations.

D. DNR Should Ensure Adequate Public Notice of NMPs in Section 65.208(7).

Proposed rule section 65.208(7) retains existing procedures for public notice of NMPs. Applicants submitting an NMP only need to publish notice in a newspaper in the county,¹⁴⁸ though circulation of newspapers has been declining for decades.¹⁴⁹ Statute also requires DNR to maintain a website with information “relevant to making public comments,” and DNR may post the NMP on its website.¹⁵⁰ DNR does maintain a web page with information about NMPs, but it contains little information to aid the public in making comments about an NMP.¹⁵¹ The page directs the public to the department’s regional field offices to view NMPs and does not list NMPs open for comment.¹⁵² DNR does not distribute notices of NMPs open for public comment by email or generally post the documents on its website. We encourage DNR to increase the transparency of public notices to allow people who do not subscribe to newspapers to access notices by posting the NMPs on its Open Feedlots webpage and including NMPs open for public comment in emailed newsletters.

VII. Conclusion

This rulemaking could address issues raised in IEC and ELPC’s petitions for rulemaking filed in 2021 and 2022. Adopting the proposed changes for vertical separation for karst will prevent the catastrophic failure of manure storage structures that would result in widespread water pollution. Adding monitoring requirements would alert AFO owners and DNR of problems before they become catastrophic. Retaining and strengthening the Director’s Discretion rule would fulfill DNR’s statutory obligations to protect water quality and could prevent the most egregious

¹⁴⁷ The “Proposed Site Operation and Manure Management Practices” category of the matrix, addressing items 26 through 44, address many obligations that apply during facility operations.

¹⁴⁸ IOWA CODE § 459A.208(5)(a).

¹⁴⁹ “Newspaper Fact Sheet,” Pew Research Center, available at <https://www.pewresearch.org/journalism/fact-sheet/newspapers/> (last visited Sept. 20, 2022) (finding a decline of greater than 50 percent since 1990).

¹⁵⁰ IOWA CODE § 459A.208(5)(c).

¹⁵¹ “Open Feedlots, Iowa DNR,” Iowa DNR, available at <https://www.iowadnr.gov/Environmental-Protection/Animal-Feeding-Operations/Open-Feedlots#16333358-nutrient-management-plans> (last accessed Sept. 20, 2022).

¹⁵² *Id.*

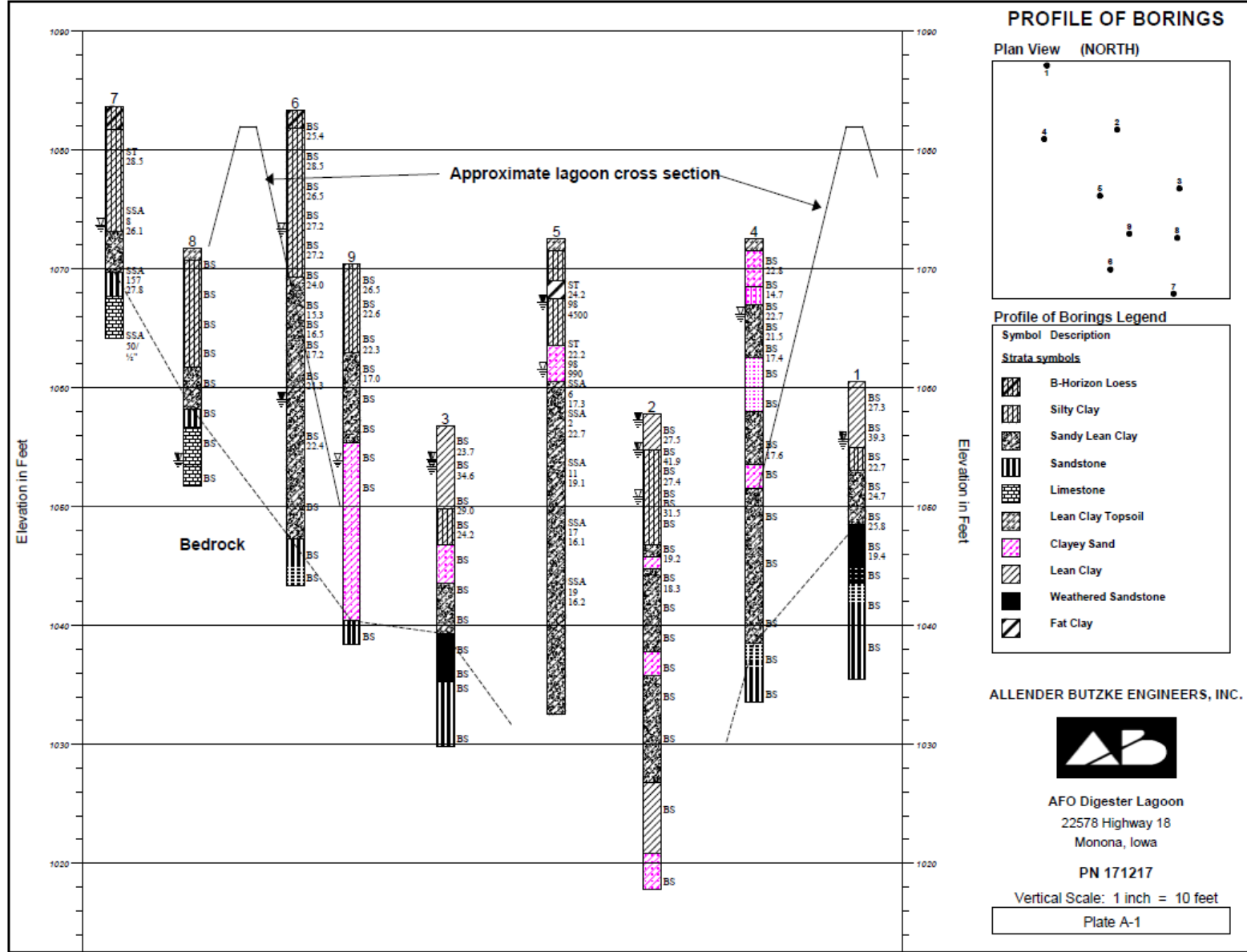
examples of AFOs built in ecologically sensitive locations. Adopting DNR's proposed language for a floodplain map would resolve the pending rulemaking petition. Environmental Organizations encourage DNR to adopt the changes proposed in our comments to provide protections for drinking water, groundwater, and floodplains as proposed in Section III.

Manure is a primary source of pollution to Iowa's streams, rivers, lakes, and groundwater. Ensuring that MMPs and NMPs contain accurate information, propose proper manure application rates, and have proper approval criteria will lead to immediate and long-term water quality improvements. Requiring electronic submission of manure plans will save agency resources, increase transparency, and facilitate compliance and enforcement efforts. In the same way, ensuring compliance with federal and state NPDES requirements in statute will reduce water quality problems while ensuring future compliance. These changes also have statutory support and DNR should adopt these changes to implement Iowa's Nutrient Reduction Strategy.

DNR must also ensure construction of future manure storage structures will not contribute to water quality problems through leaks to surface water or groundwater. Clearer and stronger triggers for construction permits will ensure appropriate DNR oversight. Stronger construction standards will reduce the risk of future failures. Reducing water quality pollution from storage structures will require adoption of the proposed changes in Section V of these comments.

Finally, DNR should adopt a range of changes to other pieces of the rule chapter to close loopholes and ensure the public can properly engage on nutrient management plans. Ensuring that facilities cannot evade regulation by creating affiliated corporations and partnerships will level the playing field for other facilities and ensure adequate oversight by DNR. Public engagement on NMPs will improve the plans, as shown by the Supreme Beef comment process.

Appendix A. Supreme Beef Soil Borings



Appendix B. Requested Changes to Rules

This appendix lists the requested amendments to the proposed rules in the order they would appear in DNR's proposed rules.

Amend section 65.1:

“Karst terrain” means land having karst formations that exhibit surface and subterranean features of a type produced by the dissolution of limestone, dolomite, or other soluble rock and characterized by closed depressions, sinkholes, or caves. If a 25-foot vertical separation distance can be maintained between the bottom of an unformed manure storage structure and limestone, dolomite, or other soluble rock, then the structure is not considered to be in karst terrain.

...

“Owner” means the person who has legal or equitable title to the property where the ~~confinement~~ AFO is located or the person who has legal or equitable title to the ~~confinement~~ AFO structures. “Owner” does not include a person who has a lease to use the land where the ~~confinement~~ AFO is located or to use the ~~confinement~~ AFO structures. “Owner” includes a person’s ownership interest in a partnership or corporation with legal or equitable title to the property.

Amend section 65.2(1)(c):

(6) The source of the ~~manure allegedly released (e.g., formed storage, earthen storage)-release~~ and the form of the manure or process waste released.

Amend section 65.3(5):

Retain existing rule language proposed for deletion.

Amend section 65.4:

a. If after evaluating a complaint to determine whether the allegation may constitute a violation, without investigating whether the facts supporting the allegation ~~related to violations of Iowa Code or this chapter~~ are true or untrue, the county board of supervisors shall forward its finding to the department director.

...

g. A county employee accompanying the department on a site investigation has the same right of access to the site as the department official conducting the investigation during the period that the county designee accompanies the department official. The county shall not have access to records required in subrule ~~65.17(12)-65.112(12)~~ ~~or the current manure management plan-MMP maintained at the facility.~~

Amend section 65.5:

Transfer of legal responsibilities or title. If title or legal responsibility for a permitted ~~animal feeding operation~~-AFO or an animal truck wash is transferred, the person to whom title or legal responsibility is transferred shall be subject to all

terms and conditions of the construction permit and these rules. The person to whom the construction permit was issued and the person to whom title or legal responsibility is transferred shall notify the department in writing of the transfer of legal responsibility or title of the operation within 30 days of the transfer. The person to whom responsibility is transferred shall publish a public notice containing the information in section 65.106(2)(a) in a newspaper having general circulation in the county. The director shall post notice of the transfer on the department's website. Within 30 days of receiving a written request from the department, the person to whom legal responsibility is transferred shall submit to the department all information needed to modify the construction permit to reflect the transfer of legal responsibility. If the transfer results in a facility under common ownership exceeding 1000 animal units, the transferee shall complete the master matrix and present the results to the county according to the procedures in section 65.106. A person who has been classified as a habitual violator under Iowa Code section 459.604 shall not acquire legal responsibility or a controlling interest to any additional permitted confinement feeding operations for the period that the person is classified as a habitual violator. A person who has an interest in a confinement feeding operation and who is the subject of a pending civil enforcement action shall not acquire legal responsibility or an interest to any additional permitted confinement feeding operations for the period that the enforcement action is pending.

Amend section 65.5(3): Retain existing rule language proposed for deletion or strengthen as proposed in IEC-ELPC's 2021 rulemaking petition.

Amend section 65.7(1):

b. If the proposed formed structure is located in potential karst terrain, a PE licensed in Iowa, NRCS qualified staff or a qualified organization shall submit a soil report, based on the results from soil borings; ~~or test pits or acceptable well log data,~~ describing the subsurface materials and vertical separation distance from the proposed bottom of the structure to the underlying limestone, dolomite or soluble rock. A minimum of ~~2~~ 6 soil borings spaced equally within the structure ~~or 2 test pits located within 5 feet of the outside of the structure are required if acceptable well log data is not available.~~ Any limestone, dolomite, or soluble bedrock in the borings ~~or test pits~~ shall be considered the bedrock surface rather than augur refusal. After the soil exploration is complete, each boring ~~or test pit~~ shall be properly plugged with concrete grout, bentonite or similar materials and completion of this activity shall be documented in the soil report.

Amend section 65.7(2):

No ~~intact~~ bedrock, including sandstone, shale, limestone, dolomite, or soluble rock, shall be removed or excavated during the construction of a storage structure. ~~Removal of karst bedrock, including weathered karst rock, is prohibited.~~

Amend section 65.7(3):

Except as provided for in 65.7(5) related to the construction of a dry bedded confinement feeding operation structure, a person constructing a formed structure on karst terrain shall comply with one of the following:

a. A minimum ~~15~~ 25 feet vertical separation distance between the bottom of the formed structure and underlying limestone, dolomite, or other soluble rock is required. Within the ~~15~~ 25 feet separation distance, a minimum 5 feet continuous layer of low permeability soil (1 x 10⁻⁶ cm/sec) or non-soluble bedrock is required.

b. If no 5 feet continuous low permeability soil layer or non-soluble bedrock exists within the ~~15~~ 25 foot vertical separation distance a ~~geomembrane or geosynthetic liner must be installed 2 feet thick compacted clay liner may~~ must be constructed ~~directly~~ beneath the floor of the structure. The design of the formed structure must be prepared and sealed by a PE or an NRCS engineer.

Amend section 65.7(4):

65.7(4) Unformed structures. The construction of unformed structures is prohibited in karst terrain or an area that drains into a known sinkhole. In potential karst, at least ~~one~~ four borings at least 25 feet apart shall be taken to a minimum depth of 25 feet below the bottom elevation of the proposed unformed storage structure or into bedrock, whichever is shallower. If a 25 feet vertical separation distance can be maintained between the bottom of the unformed structure and limestone, dolomite, or other soluble rock then the structure is not considered to be in karst terrain. No intact bedrock, including sandstone, shale, limestone, dolomite, or soluble rock, shall be removed or excavated during the construction of a storage structure.

Amend section 65.101(1):

Application rate based on crop nitrogen use. A confinement feeding operation that is required to submit a ~~manure management plan~~ MMP to the department under rule ~~567—65.16~~ ~~567—65.111~~(459,459B) shall not apply manure in excess of current recommendations from an Iowa-based state university for the maximum return to nitrogen-use levels necessary to obtain optimum crop yields. Calculations to determine the maximum manure application rate allowed under this subrule shall be performed pursuant to rule ~~567—65.17~~ ~~567—65.112~~(459,459B).

Amend section 65.101(2):

e. For liquid manure applied to land with subsurface drainage, the manure applicator shall sample water quality from any tile monitoring points or outlets on the property downgradient of the manure application. The applicator must submit samples from each monitoring sample to a certified laboratory at least once per year and electronically provide to DNR the results for total phosphorus, nitrate-nitrogen, and E. coli within 30 days after receipt.

Amend section 65.103(2):

a. A construction permit shall not be required for a SAFO that uses a formed manure storage structure or for a confinement building that uses a formed manure storage

structure in conjunction with a ~~small animal feeding operation~~ SAFO. However, this paragraph shall not apply to a ~~small animal feeding operation~~ SAFO that uses an unformed manure storage structure. A SAFO under common ownership or operating in conjunction with another AFO must obtain a permit if the total animal unit capacity exceeds 1000.

Amend section 65.104(1):

Construction permit application. Application for a construction permit for a confinement feeding operation shall be made on a form provided by the department. The application shall include all of the information required in the form. At the time the department receives a complete application, the department shall make a determination regarding the approval or denial of the permit in accordance with subrule ~~65.10(5)~~ 65.106(5). A construction permit application for a confinement feeding operation shall be filed as instructed on the form and shall include the following:

a. The name of the applicant and the name of the confinement feeding operation, including mailing address and telephone number.

b. The name of the current landowner or the proposed landowner of the land where the confinement feeding operation will be located. For a corporate landowner, provide the names of all parties with an interest or controlling interest in the corporation.

~~b.c.~~ The contact person for the confinement feeding operation, including mailing address and telephone number.

d. The name of the corporation that owns the livestock (integrator).

...

~~k.l.~~ The names of all parties with an interest or controlling interest in the confinement feeding operation who also have an interest or controlling interest in at least one other confinement feeding operation in Iowa, and the names and locations of such other operations along with the official legal business documents for the LLC listing each owner and their percent of ownership along with the signature page.

Add subsection 65.106(10):

Ongoing master matrix obligations. A confinement that receives points for its score on the master matrix based on operational practices must submit records of compliance with those practices to DNR at least annually.

Amend section 65.107(4):

Separation distance from designated wetlands. Separation distances specified in this subrule shall apply to any confinement feeding operation structure, including a ~~small animal feeding operation~~ SAFO. A confinement feeding operation structure shall not be constructed closer than 2,500 feet away from a “designated wetland” as defined and referenced in rule 567— 65.1(459,459B). This requirement shall not apply to a confinement feeding operation structure if any of the following occur before the wetland is included in “Designated Wetlands in Iowa,” ~~effective August 23, 2006:~~

a. The confinement feeding operation structure already exists. ~~This exemption also applies to additional confinement feeding operation structures constructed at the site of such an existing confinement feeding operation structure after a wetland is included in “Designated Wetlands in Iowa,” effective August 23, 2006.~~

b. Construction of a confinement feeding operation structure has begun as provided in subrule 65.8(1).

~~c. An application for a permit to construct a confinement feeding operation structure has been submitted to the department.~~

~~d. A manure management plan MMP concerning a proposed confinement feeding operation structure for which a construction permit is not required has been submitted to the department.~~

Amend section 65.109(1):

The applicant for a construction permit for a formed manure storage structure shall investigate for tile lines during excavation for the structure. Drainage tile lines discovered upgrade from the structure shall be rerouted around the formed manure storage structure to continue the flow of drainage. All other drainage tile lines discovered shall be rerouted, capped, plugged with concrete, Portland cement concrete grout or similar materials. Drainage tile lines installed at the time of construction to lower a groundwater table may remain where located even if located under the floor; however, the tile lines must be plugged with concrete or grout-tied into the perimeter drain tile.

Amend section 65.109(4):

Earthen manure storage basins. An earthen manure storage basin shall have accumulated manure removed at least once each year. An earthen manure storage basin must have enough manure storage capacity for 8 months if the MMP or NMP for the facility includes semiannual manure application and may have enough manure storage capacity to contain the manure from the confinement feeding operation for up to 14 months and maintain freeboard as determined pursuant to ~~65.2(3)“b.”~~ 65.100(1)“b.”

Amend section 65.109(6):

(b)(1) Unformed structures. The groundwater table around an unformed manure storage structure or earthen egg washwater storage structure may be artificially lowered to levels required in paragraph ~~65.15(7)“a”~~ 65.109(6)“a” by using a gravity flow tile drainage system or other permanent nonmechanical system for artificial lowering of the groundwater table. Detailed engineering and soil drainage information shall be provided with a construction permit application for an unformed manure storage structure or earthen egg washwater storage structure if a drainage system for artificially lowering the groundwater table will be installed. The level to which the groundwater table will be lowered will be considered to represent the seasonal high-water table. If a drainage tile around the perimeter of

the basin is installed a minimum of two feet below the top of the basin liner to artificially lower the seasonal high-water table, the top of the basin's liner may be a maximum of four feet below the seasonal high-water table which existed prior to installation of the perimeter tile system. Drainage tile lines shall be installed between the outside of the proposed toe of the berm and within 25 feet of the outside of the toe of the berm. Drainage tile lines shall be placed in a vertical trench and encased in granular material which extends upward to the level of the seasonal high-water table which existed prior to installation of the perimeter tile system. A device to allow monitoring of the water in the drainage tile lines installed to lower the groundwater table and a device to allow shutoff of the drainage tile lines shall be installed ~~if the drainage tile lines do not have a surface outlet accessible on the property where the unformed manure storage structure is located.~~ The operator must submit samples from the monitoring device to a certified laboratory at least once per year and electronically provide to DNR the results for total phosphorus, nitrate-nitrogen, and E. coli within 30 days after receipt.

Add section 65.109(13):

65.109(13) Groundwater monitoring. The owner of an AFO with an unformed manure storage structure must install and operate a groundwater water pollution monitoring system. Two or more groundwater sampling wells 25 or more feet apart must be installed between 5 feet and 25 feet outside the toe of the berm on the downgradient side, or on opposite sides if the site has no slope. The operator must submit samples from the monitoring device to a certified laboratory at least once per year and electronically provide to DNR the results for total phosphorus, nitrate-nitrogen, and E. coli within 30 days after receipt.

Amend section 65.111(3):

a. The owner of a confinement feeding operation who is required to submit a ~~manure management plan MMP~~ under this rule shall submit an updated ~~manure management plan MMP~~ on an annual basis to the department. The updated ~~manure management plan MMP~~ ~~may~~ must be submitted by ~~hard copy or by~~ online, electronic submittal. The updated plan must reflect all amendments made during the period of time since the previous ~~manure management plan MMP~~ submission.

~~(1) If the plan is submitted by hard copy, the submittal process shall be as follows: The owner of the animal feeding operation AFO shall also submit the updated manure management plan MMP on an annual basis to the board of supervisors of each county where the confinement feeding operation is located and to the board of supervisors of each county where manure from the confinement feeding operation is land applied. If the owner of the animal feeding operation AFO has not previously submitted a manure management plan MMP to the board of supervisors of each county where the confinement feeding operation is located and each county where manure is land applied, the owner must submit a complete manure management plan MMP to each required county. The county auditor or other county official or employee designated by the county board of supervisors may~~

~~accept the updated plan on behalf of the board. The updated plan shall include documentation that the county board of supervisors or other designated county official or employee received the manure management plan MMP update.~~

~~(2) If the plan is submitted electronically, the submittal process shall be as follows: The owner of the animal feeding operation AFO shall submit the updated manure management plan MMP to the department through the department's electronic web application. Once the submittal has been completed, the department shall provide electronic access of the updated manure management plan MMP to the public through the online AFO Siting Atlas and database board of supervisors of each county where the confinement feeding operation is located and each county where manure is land applied.~~

Amend section 65.111(4):

The department shall review and approve or disapprove all complete manure management plans MMPs within 60 days of the date they are received. The department shall deny an incomplete MMP within 60 days.

Amend section 65.112(5):

a. If an actual sample is used to represent the nutrient content of manure, the sample shall be taken in accordance with Iowa State University ~~extension~~ Extension and Outreach publication PM 1558, "Management Practices: How to Sample Manure for Nutrient Analysis." AE 3550, "How to Sample Manure for Nutrient Analysis." The department ~~may~~ shall require documentation of the manure sampling protocol ~~or and~~ take a split sample to verify the nutrient content of the operation's manure.

...

c. After the first year of operation, the manure must be tested at least once per year using protocol in paragraph "b" for total nitrogen and total phosphorus and the MMP must be revised to reflect the results of the actual nutrient concentration.

Amend section 65.112(8):

a. The manure management plan MMP shall identify each farm where the manure will be applied, the number of acres that will be available for the application of manure from the confinement feeding operation, and the basis under which the land is available. The locations shall be submitted to DNR in an electronic geospatial format. DNR shall add the geospatial data to the online AFO Siting Atlas and AFO database for public access.

Amend section 65.112(12):

~~Current manure management plan MMP.~~ The owner of a confinement feeding operation who is required to submit a manure management plan MMP shall maintain a current electronic manure management plan MMP at the site of the confinement feeding operation or a hard copy of the current MMP at the site of the confinement feeding operation or at a residence or office of the owner or operator of the operation within 30 miles of the site. The plan shall include completed

manure sales forms for a confinement feeding operation from which manure is sold. If manure management practices change, a person required to submit a ~~manure management plan~~ MMP shall make appropriate changes consistent with this rule. If values other than the standard table values are used for ~~manure management plan~~ MMP calculations, the source of the values used shall be identified.

Amend section 65.112(17):

b. When sheet and rill erosion is calculated for the phosphorus index, the soil ~~type~~ map unit used for the calculation shall be the **most erosive soil map unit that is at least 10 percent of the total field area. In all manure management plans submitted to the department for approval, the dominant critical soil map unit consistent with NRCS. Conservation planning guidelines shall be used to calculate sheet and rill erosion for the phosphorus index. (See NRCS Technical Note No. 29.)**

...

g. Additional commercial fertilizer may be applied as follows on fields receiving manure:

(1) Phosphorus fertilizer may be applied in addition to phosphorus provided by the manure up to amounts recommended by soil tests and Iowa State University ~~extension~~ Extension and Outreach publication PM 1688, "A General Guide for Crop Nutrient and Limestone Recommendations in Iowa."

(2) Nitrogen fertilizer may be applied in addition to nitrogen provided by the manure to meet the remaining nitrogen need of the crop as calculated in the current ~~manure management plan~~ MMP. Additional nitrogen fertilizer may be applied up to the amounts indicated by ~~section 65.112(18) soil test nitrogen results or crop nitrogen test results as necessary to obtain the optimum crop yield.~~

Amend section 65.112(18):

c. Nitrogen-based application rates for corn shall be based on current recommendations from an Iowa-based state university for the maximum return to nitrogen. Nitrogen-based application rates for other crops shall be based on the optimum crop yields as determined in ~~65.17(6)~~ 65.112(6) and crop nitrogen usage rate factor values in Table 4 at the end of this chapter or other credible sources. The calculation of manure applied from the facility must account for fertilizer from all other manure and non-manure sources. However, ~~subject to the prohibition in 65.17(20),~~ liquid manure applied to land that is currently planted to soybeans or to land where the current crop has been harvested and that will be planted to soybeans the next crop season shall not exceed 100 pounds of available nitrogen per acre. Further, the 100 pounds per acre application limitation in the previous sentence does not apply on or after June 1 of each year; in that event ~~65.17(6)~~ 65.112(6) and Table 4 would apply as provided in the first sentence of this paragraph.

Amend section 65.103(5): Retain existing rule language proposed for deletion (and place it at 65.201(5)) or strengthen the language as proposed in IEC-ELPC's 2021 rulemaking petition.

Amend section 65.202(7):

Permit conditions. NPDES permits shall contain conditions required by 40 CFR Section 122.41, monitoring conditions required by 40 CFR Section 122.48, and conditions considered necessary by the department to ensure compliance with all applicable rules of the department, to ensure that the production area and land application areas are operated and maintained as required by Iowa law, to protect the public health and beneficial uses of waters of the United States, and to prevent water pollution from manure storage or application operations. Any more stringent conditions of Iowa Code chapter 459A, 567—subrule 62.4(12), and this chapter that apply to animal feeding operations AFOs shall govern. For CAFOs that maintain cattle, swine, or poultry, the following conditions shall be included

...

(d)...(2) Discharge monitoring—tile lines. If the AT system includes a perforated tile system installed under any VTA berms to enhance infiltration within the VTA ~~in accordance with 65.110(6) “h” or 65.110(7) “h,”~~ water samples shall be collected from a sampling point located downgradient of the VTA on each individual tile line or combination of tile lines on the following schedule: ~~±~~

~~Quarterly Annual sampling~~ One one sample shall be taken from each sampling point ~~once each quarter (January—March, April—June, July—September, October—December),~~ in March or April and again in the fall (September through November) of each year and the level of flow in the tile system recorded at the time of sampling. The sample shall be collected ~~at least ten days after a rainfall event of one inch or greater; and samples must be taken at least two, but not more than four, months apart~~ when the tile(s) are flowing. If there is no discharge from the tile line at a time that meets these requirements, documentation on appropriate department forms can be substituted for the sample and analysis. Collected samples shall be submitted to a certified laboratory and analyzed for: total Kjeldahl N, NH₄ N, total P, COD, total suspended solids, and chloride, and Ortho-phosphate as P.

Amend section 65.206(2):

(c)(3) By methods which identify the continuous soil profile and do not result in mixing of soil layers. Soil ~~corings~~ borings using hollow stem augers with a core barrel and other suitable methods that do not result in soil layer mixing may be used.

Amend section 65.207(4)(c):

(3) By methods which identify the continuous soil profile and do not result in mixing of soil layers. Soil ~~corings~~ borings using hollow stem augers with a core barrel and other suitable methods that do not result in soil layer mixing may be used.

Amend section 65.208(8)(a):

(2) Calculations necessary to determine the land area required for the application of manure, process wastewater and open feedlot effluent from an open feedlot operation based on nitrogen according to section 65.112(18) or phosphorus use levels (as determined by phosphorus index) in order to obtain optimum crop yields according to a crop schedule specified in the ~~nutrient management plan~~-NMP, and according to requirements specified in subrule ~~65.17(4)~~65.112(4). The 100 pounds of available nitrogen per acre limitation specified in paragraph ~~65.17(18)~~“e” 65.112(18)”c”(applicable to open feedlot operations and combined open feedlot and confinement operations with an NPDES permit because of requirements in subrule ~~65.17(4)~~ 65.112(4)) pertaining to liquid manure applied to land currently planted to soybeans or to land where a soybean crop is planned applies only to liquid manure, process wastewater or settled open feedlot effluent.

Amend section 65.208(8)(b):

(1) Nutrient concentration of the manure, process wastewater and open feedlot effluent, as shown by laboratory analysis from the facility or from a manure storage structure with design and management similar to the open feedlot’s manure storage structure.

...

(3) After the first year of operation, the manure must be tested at least once per year using protocol in paragraph “b” for total nitrogen and total phosphorus and the MMP must be revised to reflect the results of the actual nutrient concentration.

Amend section 65.204(2):

(c)(3) By methods which identify the continuous soil profile and do not result in mixing of soil layers. Soil ~~corings~~ borings using hollow stem augers with a core barrel and other suitable methods that do not result in soil layer mixing may be used.