

As a retired Stearns County SWCD soil conservationist and soil scientist with 42 years of experience working with producers in the leading dairy and livestock county in the State, I would like to comment on proposed NPDES and SDS rule changes regarding manure application and management in sensitive areas.

### Broad Perspective

These proposed changes, I believe, will place additional, undo burden on these license holders, with minimal returns in the way of nitrate pollution reduction. The livestock producer in Minnesota operating under a NPES permit is already subject to extreme restrictions and regulations regarding manure application. These operators must develop and implement a Manure Management Plan (MMP) that ensures: manure is managed to prevent pollution of waters, maximum nutrient rate limits are followed, setbacks from sensitive features are maintained, manure is tested for nitrogen and phosphorus content, soils are tested for phosphorus, and application records are kept. They contain procedures to follow if a spill occurs. They also must document that they have enough acres available for manure application to utilize the nitrogen content of the manure based on crop N uptake values in the rotation used on these acres. The parameters for each of these items is very detailed and can vary greatly from field to field and farm to farm. Most rely on crop consultants and local resource professionals to help them with these lengthy and complicated plans. Also, if they are a Confined Animal Feedlot Operation (CAFO), the feedlot has been inspected and permitted to meet zero discharge of feedlot runoff to waters of the State. In many cases this entails expensive regrading and construction of manure containment structures. In the July 19, 2024 Outdoor News article by staff writer Tori J. McCormick entitled "MPCA seeks comment on plan to curb pollution", Jeff Broberg, Minnesota Well Owners Association, stated: "I'm pleased MPCA is finally starting this effort". Minnesota's "regulatory environment for feedlots is far too friendly". Jeff needs to get out and talk to a few of these producers and the resource professionals that are assisting them.

Federal cost sharing is available through the Environmental Quality Incentives Program (EQIP) for Comprehensive Nutrient Management Plans (CNMP) that verify that all nutrients are applied properly on a field by field basis. These fields must also meet erosion control standards set by USDA. This is a step up from an MMP and is an automatic contract item when the applicant is using Federal cost share dollars to fix a polluting feedlot. I can't imagine any producer not going this route in the Karst because of the cost involved. The public may not be aware that this level of planning is available.

We already have the tools and procedures in place to solve the problems in the karst region and in coarse textured soils in north central Minn. If problems are still occurring, I would first try to determine if the required practices are not being applied, and why, before adding more.

The proposed additional requirements burden the applicants with increased costs, time, and labor. We need to be careful not to push these producers out of business. If we loose the livestock producer, especially dairy, we loose contour strips, contour buffers, perennials in the rotation, soil health inputs, perennial cover in critical areas, nitrogen fixing legumes, managed grazing systems, and functional grass waterways. When the livestock producers move out the land is often rented on an annual cash basis to growers interested in quick profits with annual crops such as corn and soybeans. Water runoff and soil erosion almost doubles unless they spend time and money on conservation practices. Many renters won't do that and usually are not required to. Corn-soybean rotations are proven to be major sources of nitrates in ground water. Research done at Rosholt Water Quality Research Farm near Westport in central Minnesota by Dr. Fabian Fernandez, U of Minn. Nutrient Management Specialist, on irrigated sands revealed that nitrates leave the root zone at a rate of over 70 lbs. per acre annually in this rotation using nitrogen rate, method, and timing recommendations set by University of

Minnesota Extension and Irrigation Water Management (IWM). These numbers are proven in the north central sands, and in my opinion, will be similar in the karst region with its high rainfall erosivity factor, soil physical and biological properties, and shallow depth to bedrock. Do we have similar data for manure fertilized systems? If not, you have no research basis for assuming “anticipated effectiveness” for the specified additional nitrate leaching BMPs for these systems.

I understand the anguish that people have in the karst and irrigated sands regions when nitrate levels in streams and groundwater are rising higher and higher. As an avid trout fisherman and member of Trout Unlimited I get angry when I hear about massive fish kills in streams from toxic contaminants. I also understand how outside groups can pressure regulators to invoke new rules and pass laws that could have negative consequences unless everyone is on board. I have witnessed the power of getting local stakeholders, especially farmers, working together and guided by solid research, to solve resource problems with common sense solutions.

How do you get producers to work with you? Not with more regulations and threats of fines and litigation. It's done by proving to them that voluntary BMPs, that are tailored to their specific situation and fit perfectly into their farm business plan. This takes boots-on-the-ground work by highly trained resource professionals backed by cost share funds as necessary.

The following are my comments regarding proposed rule changes in MPCA Feedlot SDS and NPDES permit development guideline (June 2024, wq-f3-55).

1. Land application visual inspection

If the MMP or CNMP is properly followed there should be no need for these inspections except in the case of an unusual runoff event with severe erosion. In which case a the whole region would have some discharge. You will need to define what “discharge” means and it will need to be in line with current MPCA rules. If fines are possible, I suspect that permittees will hesitate to do any reporting. They will fear that it will become public knowledge and open them up to being sued. The State will need explicit proof of a violation which will be expensive and time consuming.

2. BMPs to to reduce runoff potential and mitigate nitrate impacts

June through September

Option 1: **Application to a growing perennial or row crop.** This is not an issue. Sometimes producers will apply manure following 1st cutting of poor hay then convert the land to corn for silage. This is the best time to plant cover crops.

October 1-14

The wording “**Unless the requirements for vulnerable ground water areas apply**” seems confusing. The existing requirements: soil temperature, cover crop, nitrification inhibitors, split application are mostly nitrate leaching BMPs. Why make groundwater BMPs required in non-vulnerable GW areas?

Some comments on the existing rules for this time period:

The only annual cover crop worth planting after October 1st is a winter small grain. Cereal rye is usually the best choice. Cereal rye will cost almost \$30 an acre to plant. If the crop is terminated in the spring the total cost will be about double that. This is a big expense unless someone is willing to pay for it. If the intent is runoff control this would be a good practice if there is at least 6 inches of growth before frost. There also would be good control until termination in the

spring, and extended control if residue is left until planting. If the intent is to reduce nitrate leaching, it is mostly a waste of time and money. According to Dr. Fernandez in his research at Rosholt Water Quality Research Farm, he found that 1/2 to 3/4 of the total annual drainage and nitrate leaching load happens during late April and mid to late June. By that time the rye is has been terminated and there is not very many active roots taking up large amounts of water or nitrates. "The benefit of rye in reducing nitrate leaching would be limited, which is what we observed in our measurements," according to Fabian.

Nitrogen inhibitors with manure need research to see if this has any "anticipated effectiveness" to reduce nitrate leaching in the fall. My opinion it would be mostly a waste of time and money with bovine manure. This manure is already slow release. At best only 55% of nitrogen in manure is converted to nitrates or ammonium and available to plant roots the first year, and most of that is in the spring, well past the couple weeks that the inhibitor buys you in the fall. There may be some effectiveness with swine or poultry manure but I would like to see some research.

Split application is a spring or early summer practice with nitrogen fertilizer. I don't believe it is applicable with manure. When these big operations hire a manure applicator it is always once and done.

October through November in VGW areas (new requirements)

Option 1: **application to growing perennial or row crop**. OK with hay but in reality most water uptake and nitrogen uptake is very low after October 1st.

Option 2: **cover crop planted prior to or within 14 days**. Cover crops of limited value for N uptake as stated above.

Option 3: **perennial crops in rotation and soil temp**. Remove the perennial crop in rotation requirement. This would exclude the row crop operator that is buying the manure under contract and places undue burden on the NPDES permit holder. Also nearly impossible to enforce. Fifty degree min. temp is ok but also hard to enforce.

December through February

Permit change: **no manure applied to VGWAs**. In Stearns Co. there was very little if any solid or liquid manure applied to frozen or snow covered fields from these large operations during this period unless there is some type of emergency where manure disposal was needed. In which case MMP setback rules are followed. This seems over-regulatory in all State VGWs. Concentrate on the karst area with this one. Remember the MMP is in place.

Comments on existing rule during this period:

300 foot setback to waters/tile intakes is already a permit requirement.

The slope requirement is hard to administer. Is this dominant slope, maximum slope, average slope? Who measured and how is it measured.

Under 50% chance of 1/4 inch rainfall within 24 hours if application. This would be impossible to enforce.

***If 2 or more inches of snow...really?*** Could you possibly make this more complicated?

**3. *Permittees must annually report more information about land application of transferred manure.*** This makes sense because this information is used to implement the MMP. This will probably be another cost to the permittee because their crop consultant will likely do this work.

Final comments

1. The rule seems to hop back and forth between groundwater BMPs and runoff BMPs. Try to separate the two better.
2. In the karst region runoff and infiltration to GW is almost the same. The karst region should have it's own separate set of rules. I think this would help MPCA customize BMPs to address the unique problems found there. It also might be easier for groups like Trout Unlimited to extend time and money to promote your efforts.  
It would also reduce the burden of enhanced regulations that apply better in the karst on producers in other parts of the State.
3. If MPCA is going to restrict fall application of manure by permittees in all groundwater sensitive areas of the State why don't you model this after the Minnesota Nitrogen Fertilizer Plan? Use well test data to identify critical areas before requiring fall application restrictions. Why does Minnesota Dept. of Agriculture have to be so different from MPCA in their management of nitrate pollution?
4. Consider the enrollment of a Core Discovery Farm in the karst. Find a producer with sinkholes and a trout stream on the studied parcel. The data obtained there would be invaluable and it may improve relations between producers and other stakeholders. Contact the Minnesota Agricultural Water Resource Center.
5. Producers are way more receptive to adopting new BMPs if they have met with a conservationist, walked their land, and developed options that fit their operation. Consider having the local SWCD or NRCS develop a conservation farm plan for each NPDES permit applicant, that incorporates their MMP, as an alternative to the blanket mandates proposed in the new rule. Alternative practice plans worked well with the Minnesota Buffer law.

Thank you for allowing me to comment and your patience.

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