



*Protecting, Maintaining and Improving the Health of All Minnesotans*

August 14, 2018

The Honorable Jessica Palmer-Denig  
Office of Administrative Hearings  
P.O. Box 64620  
600 Robert Street, North  
Saint Paul, Minnesota 55164-0620

Re: Proposed Minnesota Department of Agriculture Rules Governing Groundwater Protection, OAH  
Docket No.: 71-9024-35205

Dear Judge Palmer-Denig:

Thank you for the opportunity to comment on the Groundwater Protection Rule proposed by the Minnesota Department of Agriculture (MDA).

Nitrate-nitrogen contamination of drinking water supplies is a persistent problem in Minnesota, and its presence in drinking water can adversely affect people's health. Drinking water with nitrate levels above 10 mg/L can cause a potentially fatal disorder called methemoglobinemia. The core mission of the Minnesota Department of Health (MDH) is to protect, maintain, and improve the health of all Minnesotans. Accordingly, MDH supports MDA's proposed Groundwater Protection Rule, which aims to limit the adverse effects of nitrogen fertilizer use on groundwater, the source of drinking water for approximately 75 percent of the state's population. Comments on the proposed rule are included as Addendum 1.

We appreciate the collaboration we have had with MDA staff as they worked to develop the Nitrogen Fertilizer Management Plan and the proposed Groundwater Protection Rule. This productive relationship has already resulted in many worthwhile changes to the draft rule language. We commit to continuing this collaborative work so that future efforts are carried out with maximum clarity, efficiency and efficacy for all affected parties. While our agencies' priorities generally align around the need to protect groundwater from contamination, there are areas of emphasis regarding nitrogen fertilizer and its effects on drinking water that obligate MDH to submit formal comments on the proposed rule.

There is no doubt that the advent of commercial nitrogen fertilizers in modern agriculture has transformed crop productivity. Increasing yields have provided much value to society, primarily by boosting food supply and the economic value of agricultural products. It is hard to underestimate the importance of agriculture in many parts of rural Minnesota both as a source of livelihood and, more generally, as a way of life. At the same time, undesirable environmental outcomes of some agricultural practices continue to be evident. Preventing the negative side effects of large-scale application of commercial nitrogen fertilizer is a key objective of the proposed Groundwater Protection Rule.

We realize that implementation of the proposed Rule, along with the associated Nitrogen Fertilizer Management Plan, will primarily affect rural parts of the state, where the agricultural economy is vital to

community well-being. Attempts to control nitrogen fertilizer use to protect groundwater resources may shift cost burdens within rural communities. However, the approach laid out in the proposed rule is sufficiently targeted to areas where drinking water protection is most urgently needed that there is value to the state in pursuing its adoption. MDH believes the SONAR for this proposed rule successfully makes the case that the benefits to society outweigh the costs. The benefits accrue to small towns and municipalities, to small businesses, to private well owners, and generally to the people of Minnesota who rely on groundwater as a source of drinking water. Many such users have borne the inequitable cost of treating their drinking water source to remove nitrate nitrogen.

Addendum 1 details our concerns regarding the current content of the proposed rule in the following categories:


1. Elimination of mitigation for areas in which private wells are contaminated does not serve the public health needs of rural Minnesotans, many of whom already suffer inequities relative to public health outcomes;
2. Restrictions on fall application of nitrogen fertilizer are not sufficiently protective; and
3. Mitigation in Drinking Water Supply Management Areas (DWSMAs) will need to be coordinated with MDH staff and local partners to optimize implementation and minimize confusion.

Some of these specific comments identify what we feel are shortcomings in the proposed Rule or areas that should be strengthened.

Finally, for several decades MDH staff have been working with local public water systems -- especially those challenged by increasing nitrate nitrogen contamination -- to protect and improve drinking water quality. Our experience is that voluntary approaches regarding the adoption of nutrient management BMPs for traditional row crop production are not enough to arrest rising nitrate levels in many vulnerable groundwater settings. Evidence for this comes in part from looking at the increase in the number of community public water systems requiring nitrate treatment; from six systems serving 15,000 people in 2005 to eight systems serving 50,000 people today. This proposed Rule will provide meaningful mitigation measures to help protect some of these drinking water sources. Thus, we feel it is a good first step. However, we know that in other critical areas it will not be enough. Additional measures (i.e., alternative crops, perennial land cover, land retirement, etc.), developed in consultation with local landowners and public water systems, will be needed to adequately protect all groundwater drinking water sources.

Thank you for the opportunity to submit these comments.

Sincerely,



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Addendum 1:

**Minnesota Department of Health (MDH)**  
**Comments on Proposed Rules Governing Groundwater Protection, Minnesota Rules, 1573; Revisor's**  
**ID Number RD4337**  
**OAH Docket No. 71-9024-35205**

In the context of our public health mission, we have developed the following areas of general comment for consideration:

- A. ***Attachment 2 provide information about nitrogen as a health risk and the importance of addressing nitrogen fertilizer as a source of nitrate contamination of aquifers used as a source of drinking water by Minnesotans.***
  
- B. **Specific comments on the Proposed Permanent Rules Related to Groundwater Protection as follows:**
  - 1) ***The proposed groundwater protection rule does not equitably require mitigation and adoption of best management practices (BMP's) in agriculture areas where nitrogen fertilizer is determined to have impacted nitrate levels in private wells and non-community public water supply wells.***

Background / Summary: The proposed groundwater protection rule only protects private well owners and small non-community public water supplies (restaurants, churches, hotels, etc.) through fall restrictions of applied nitrogen fertilizer. (This is in contrast to the protections offered community public water systems, which benefit from the Rule's provisions regarding both fall nitrogen fertilizer restrictions and mitigation through mandated BMP adoption.) The 2017 version of the rule included a mitigation process for private well owners and small non-community public water supply wells if they were determined to be impacted by nitrogen fertilizer by MDA.

In MDA's *Township Testing Program (TTP) Update-March 2018 Report*, the report states: "as of March 2018, 242 vulnerable townships from 24 counties participated in the TTP from 2013 to 2017. ***In the 242 townships tested, 113 (47%) have 10% or more of the wells over the HRL for Nitrate-N.***" The map produced by MDA shows the need in various areas in the State for better nitrogen management and practices in vulnerable groundwater areas of the State. See attached *MDA Township Testing Program Update – March 2018 Report*. June, 2018 (Attachment 2).

MDH suggests the proposed rule is not equitable in addressing nitrate as a known public health contaminant found in a significant number of private wells and non-community public water supply wells in rural agricultural areas where the known impact is nitrogen fertilizer.

The proposed rule falls short of the anti-degradation goal of minimizing the impacts of nitrogen fertilizer Statewide for all Minnesotans described in the Minnesota 1989 Groundwater Protection Act.

MDH Recommendation: Develop and maintain similar mitigation requirements for all types of public and private wells in the proposed rule that equitably protects the health of all Minnesotans.

- 2) ***Fall applied nitrogen is restricted in public water supply drinking water supply management areas with nitrate levels equal or greater than 5.4 mg/l. Several exclusions to the restrictions of Fall applied nitrogen in a MDH approved public water supply well Drinking Water Supply Management Area (DWSMA) are identified in the rule that are a concern to MDH. These exclusions also start with the “commissioner may exclude” leaving a level of ambiguity as to how and when these exemptions apply. (1573.00300 Statewide Water Resource Protection Requirements)***

Background / Summary: The MDH Wellhead Protection program for public water supply well(s) is based on the principle of preventing contaminants from entering a groundwater aquifer used as a source of drinking water. Restricting fall-applied nitrogen in public water supply DWSMA starting at the time a public water supply well reaches 5.4 mg/l may be too late to prevent exceedance of the federal safe drinking water standard of 10mg/l.

1573.0030 Subpart F and G describe exclusions for growers to the fall applied nitrogen restrictions in a DWSMA. No methodology or process is provided that describes how the “commissioner may exclude responsible parties” or how a “point source” for nitrogen will be determined in the rule. MDH’s concern is that there could be too many opportunities and exemptions that the fall applied N restrictions will not protect or reduce nitrogen impacts on public water supply wells from fall applied commercial nitrogen fertilizer.

MDH Recommendation: MDH advises MDA to consider broader restrictions on fall applied N in MDH approved highly vulnerable DWSMAs. MDH can annually provide MDA a map and list of all high vulnerable public water supply drinking water supply management areas. This would simplify implementation of Fall N restrictions in DWSMAs statewide.

MDH also advises that clarity be provided in the rule as to how the “commissioner may” exclude responsible parties from the fall applied N restrictions. If exclusions are made as proposed in the rule, MDH suggests that our agencies work together to clearly define the methodology needed to fairly and equitably determine the exclusions described above.

- 3) ***The determination, assessment and potential exemptions by the commissioner for assigning mitigation levels and criteria for grower adoption of nitrogen BMP’s in an MDH approved Drinking Water Supply Management Area (DWSMA) presents challenges for State / local implementation of the rule and the existing MDH Wellhead Protection Program. (1573.0040 – 1573.0050)***

MDH General Comments on Sections 1573.0040 – 1573.0050:

This section of the rule has significant implications for the State Wellhead Protection Program where row crop agriculture and nitrogen use is present (see attached map *2015-2016 Community Water Supply Map of Systems with elevated nitrates*). Wellhead protection is defined by the MN Wellhead Protection Rule (4720.5100) Subp. 43) as “a method of preventing well contamination by effectively managing potential contaminant sources in all or a portion of a wells recharge area.”

More specific concerns and suggestions related to this section of the rule include:

**MDH comments and recommendations under this section of the rule include:**

- a. **1573.0040 Subp. 2.** More clarification is needed that describes how nitrate – nitrogen concentration data from the commissioner of health from a public water supply well or group of public water supply wells in a DWSMA will be evaluated to determine mitigation levels 1 and 2. While these mitigation levels are voluntary, it would be useful to provide that context in the rule.

MDH Recommendation: MDH advises that the rule include the methodology MDA will use to determine mitigation levels 1 and 2 based on a well or group of public water supply wells included in a DWSMA. MDH also proposes clarifying that steps 1 and 2 are voluntary and that there be a reference back to the approved Minnesota Nitrogen Fertilizer Plan (NFMP) in the rule. MDH suggests adding the NFMP under the definition section and provide reference as needed to voluntary actions and items as needed in the rule for clarification.

- b. **1573.0040 Subp. 3. (2) a.** References are made to statistical analysis of nitrate from the previous ten years and the concentration is projected to exceed the HRL in the next ten years.

MDH Recommendation: Methodology used to complete the statistical analysis should be described in publically available guidance if this method is to be used to determine a mitigation level for a public water system well or wells within a DWSMA.

- c. **1573.0040 Subp. 5.** Monitoring done in a DWSMA and use of public well information.

MDH Recommendation: MDH conducts a significant amount of investigative and compliance monitoring in DWSMAs to help public water systems meet federal Safe Drinking Water Act requirements. The intent of this portion of the proposed rule seems to be to demonstrate compliance and efficacy of voluntary and mandatory BMPs. While the goals and objectives of the monitoring in DWSMAs are different for MDA and MDH, agency staff should coordinate to avoid redundancy and confusion.

- d. **1573.0400 Subp. 7.** Use and definition of lag time. Lag time is referred to in other areas of the rule as well. Part 1573.0010, Subp. 12 defines ‘lag time’ to be the transport time

through the unsaturated zone between the land surface and the water table. Transport of nitrate through the unsaturated zone is rarely immediate; however, 'vulnerable groundwater areas' (cf., 1573.0010, Subp. 23) are areas in which other state groundwater protection programs (e.g., MDH's wellhead protection program, MPCA's stormwater management, DNR geologic mapping) have recognized that the travel time is sufficiently fast that land uses can affect groundwater in time frames as short as days, weeks or months. Accordingly, groundwater resource managers in Minnesota generally consider standard characterizations of vulnerable groundwater areas sufficient justification for active land use management without introducing the extra complexity of defining a lag time.

MDH Recommendation: MDH uses water quality indicators to confirm vulnerability assessments in drinking water supply management areas (DWSMAs) . These include the use of isotope geochemistry to help to define the age of groundwater. MDH can make this information available to MDA as needed to bolster the defensibility of mitigation measures in DWSMAs.

- 4) **1573.0090 Alternative Management Tools** Use and applicability of Alternative Management Tools. The ultimate solution to restore or improve drinking water in some geologic areas of the State requires State and local government to go beyond the BMPs and use of nitrogen fertilizer.

MDH Recommendation. MDH commends the MDA for the recognition and use of alternative management tools (AMTs) both in the rule and as outlined in the NFMP. MDH would request more emphasis and resources be placed on prevention and use of AMT's through the implementation of the NFMP.