Dodge County Environmental Services

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Annie Felix-Gerth
State Program Administrator Principal
Fertilizer Management Unit
Minnesota Department of Agriculture

Comments and Recommendations regarding Minnesota Department of Agriculture's draft Nitrogen Fertilizer Management Plan.

1. Comment: It appears that MDA's "preliminary assessment phase" and "Phase 1 assessment" will be redundant in areas of the state where there is already enough data to meet the goals of each phase.

   Dodge County is a good example. Drinking water protection has been the top priority of the Dodge County Water Management Plan since 1990. We have over 20 years of ground water quality data from over 1900 unique wells. This data is highly accurate: water analysis is completed by certified labs, well locations are field verified, and wells are matched with driller's construction logs when available.

   See attached Figure 1 for summary of nitrate concentrations in Dodge County. Our water quality testing data reveals that, in four (4) townships, >10% of all wells sampled have nitrate concentrations exceeding the Health Risk Limit (HRL) of 10 milligrams per liter. Our data also reveals that, in two (2) townships, between 5 - 10% of all wells sampled have nitrate levels exceeding 10 milligrams per liter.

   Recommendation: We feel that the NFMP should provide flexibility for MDA to advance areas of the state that have sufficient existing data, directly to Phase 2 and Phase 3 mitigation levels. This flexibility will reduce redundancy, lower costs, and allow us to deal with problems sooner.

2. Comment: It appears that threshold nitrate levels for each phase of the mitigation plan reflect the average concentration for all wells in the township regardless of the aquifer the water comes from. We feel that to meet the goal of the Groundwater Protection Act, threshold nitrate levels must apply to each drinking water aquifer.

The attached Figure 2 illustrates the how nitrate concentrations vary from a highly vulnerable aquifer in Dodge County (Galena Limestone) to lower, protected aquifers (St. Peter and Praire du Chien/Jordan).

As the draft NFMP stands today, in a preliminary assessment of a township with 150 homes using a vulnerable aquifer and 150 homes using protected aquifers, the average nitrate concentration for all wells may be diluted below the action level, leaving the high risk population unattended and a drinking water source contaminated.

Recommendation: We feel that the nitrate threshold level should apply to each aquifer; insuring that every impacted aquifer will be a part of the mitigation plan.

3. Comment: In the Minnesota Nitrogen Fertilizer Management Plan August 2013 Public Comment Draft document, reference is made on pp. 28-30 to the Nitrate Probability Map for Dodge County, developed by the MN Department of Health in 2011. The map utilizes geologic and soil data, cropland, and urban land use data to develop regions of hydrogeologic sensitivity and nitrate-loading capabilities.

   Based on our extensive well test results over the last 20 years, we find that the Dodge County map on p.30 does correctly illustrate certain areas of the county, such as the northeast and western edge, where some high nitrate wells are found. We have found, however, a simple map of the county depicting areas of less-than-50 ft. to bedrock, combined with high groundwater sensitivity areas (typically sandy soils), provides a layer which we can used, with high correlation, to predict the existence of high-nitrate wells. Note on the attached Figure 3 the consistency with which high-nitrate wells coincide with the shallow bedrock/high sensitivity layer.

   Recommendation: When appropriate, use the county map in Figure 3 as an accurate guide in predicting the location of high nitrate wells.

Thank you for opportunity to comment. Please contact me if you have any question

Sincerely

Mark Gamm

Mark Gamm
Dodge County Environmental Services Director

cc. Dean Schrandt, Dodge County Water Program Manager

Figure 1

Dodge County - Townships with Elevated Private Well Nitrate Levels

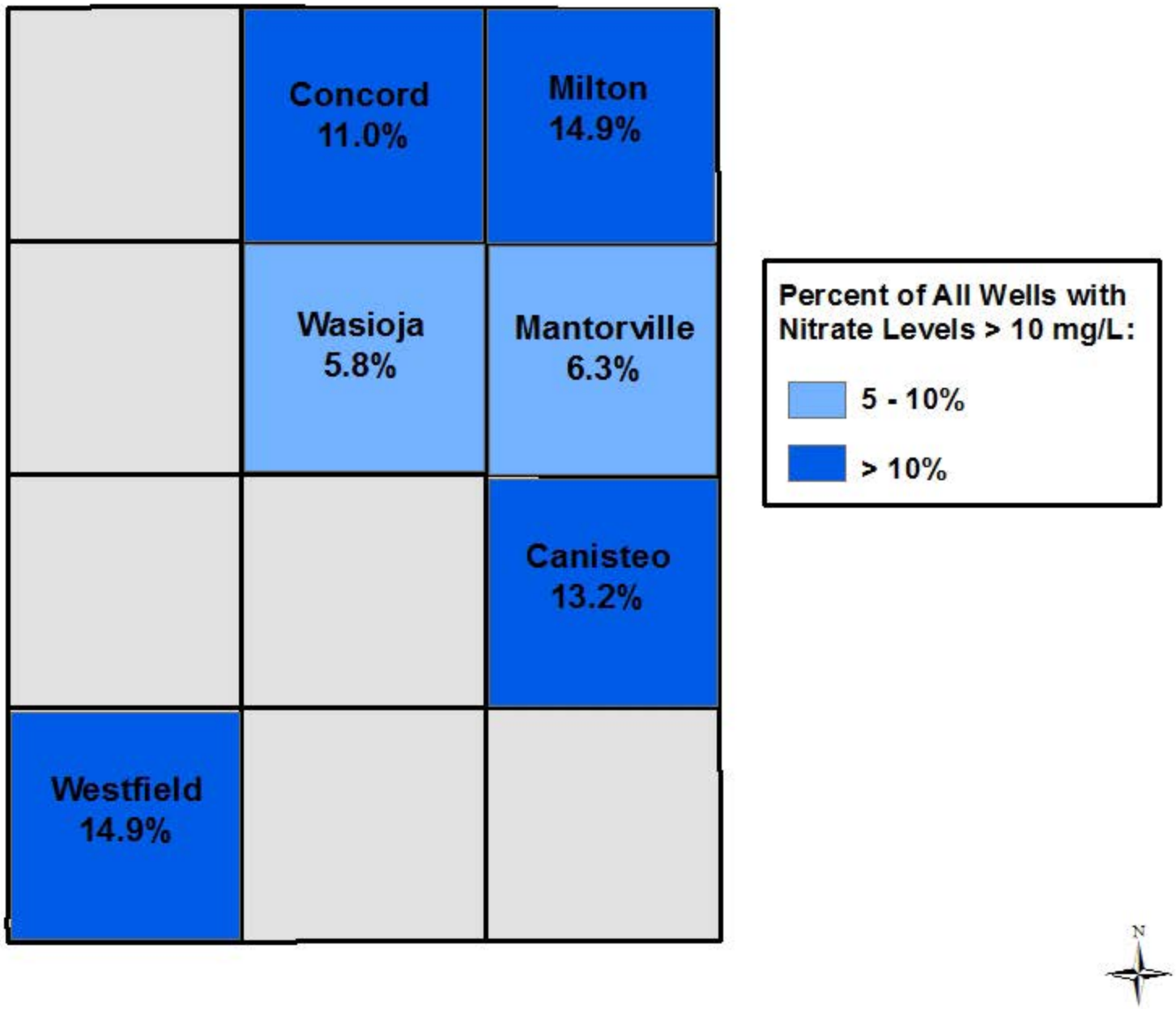
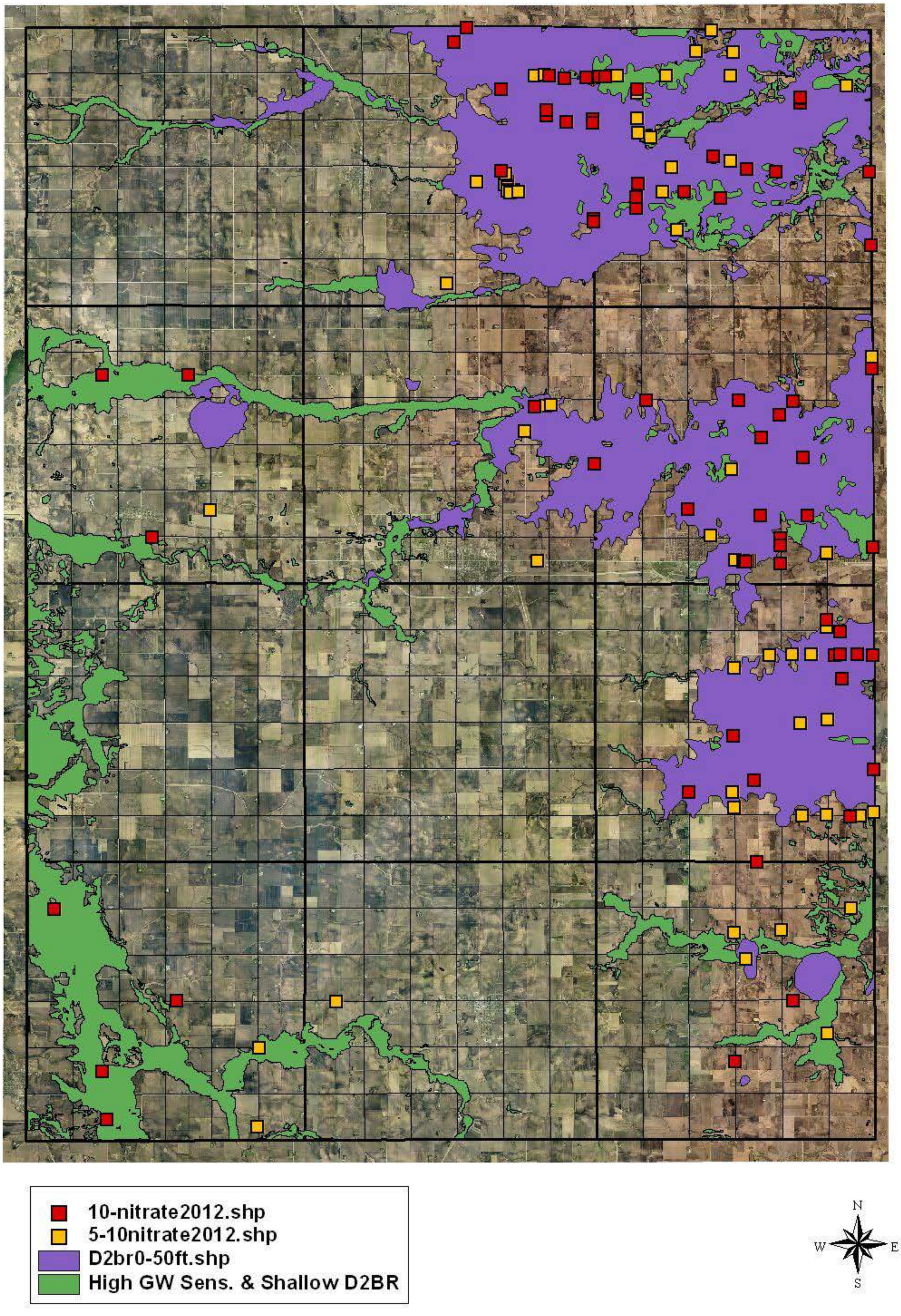


Figure 2

AQUIFER - NITRATE SUMMARY for WELLS TESTED 1996 – 2011 in DODGE COUNTY			
	NITRATE LEVEL		
AQUIFER	0-1 mg/l	1-10 mg/l	10+ mg/l
GALENA LIMESTONE	**75 %**	**17 %**	**8 %**
ST. PETER	**89 %**	**11 %**	**0 %**
PRAIRIE du CHIEN JORDAN	**100 %**	**0 %**	**0 %**

Figure 3

Updated High Nitrate/High GW Sensitivity Illustration