

Sherburne County: Final Overview of Nitrate Levels in Private Wells (2014-2015)

The Minnesota Department of Agriculture (MDA) determines current nitrate-nitrogen concentrations in private wells, on a township scale, through the Township Testing Program. The MDA has identified townships throughout the state that are vulnerable to groundwater contamination and have significant row crop production. The MDA plans to offer nitrate testing to more than 70,000 private well owners in over 300 townships by 2019.

Each selected township is offered testing in two steps, the “initial” sampling and the “follow-up” sampling. In the initial sampling, all township homeowners using private wells are sent a nitrate test kit. If nitrate is detected in their initial sample, the homeowner is offered a follow-up nitrate test, pesticide test and well site visit. Trained MDA staff visit willing homeowners to resample the well and then conduct a site assessment. The assessment helps to identify possible non-fertilizer sources of nitrate and to see the condition of the well. A well with construction problems may be more susceptible to contamination.

The MDA and the Sherburne Soil and Water Conservation District worked together to select townships and implement the nitrate testing project. The following townships were selected: **Becker, Big Lake, Clear Lake, Haven, Palmer, and Santiago**. The initial sampling in Sherburne County started in 2014 and follow-up sampling for all but one township ended in November 2015. Follow-up sampling in Big Lake Township ended in November 2016 as scheduled.

Results

Two datasets are used to evaluate nitrate. The initial well dataset contains 2,070* wells; the final dataset contains 1,993 wells. Wells that had nitrate-nitrogen results over 5 mg/L were removed from the initial dataset if a non-fertilizer source or well problem was identified, to form the final well dataset. A total of 77 wells (4%) were removed. The results from the initial and final well datasets are summarized in the table below.

In Clear Lake and Haven Townships, more than 10% of the wells were over the Health Risk Limit of 10 mg/L of nitrate-nitrogen (map below). The percent of wells over the Health Risk Limit in each township ranged from 5.3% to 13.8% percent. The Sherburne County Final Report will be available on the MDA website: www.mda.state.mn.us/townshiptesting.

Next steps

The MDA uses the final well dataset to determine if additional action is needed, as described in the Minnesota Nitrogen Fertilizer Management Plan (NFMP). The MDA uses the assessment process and prioritization guidelines in the NFMP to determine next steps. Find more information about the NFMP on the MDA website at www.mda.state.mn.us/nfmp.

In 2017, the MDA will start a mitigation project in Clear Lake and Haven Townships. To learn more about this project in your area, contact Jennifer Gallus at Jennifer.Gallus@state.mn.us.

Sherburne County Final Highlights

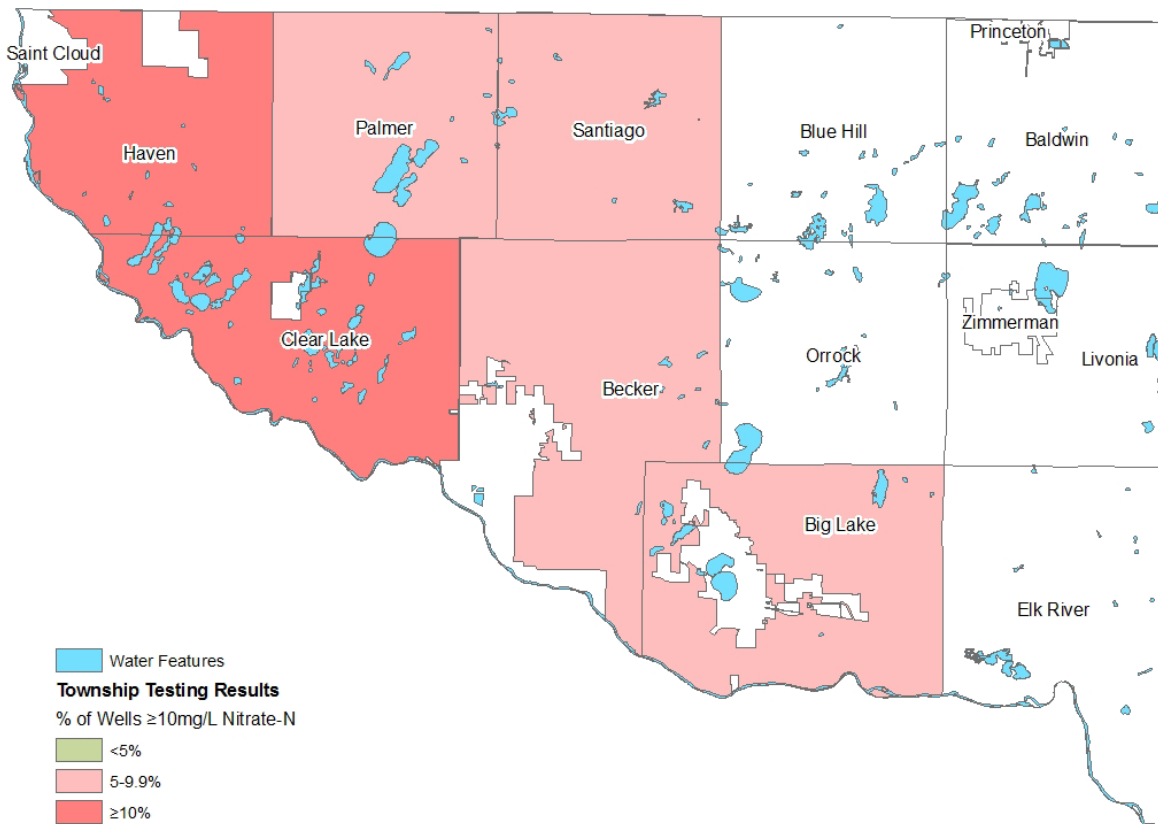
- Number of townships with 10% of wells over the HRL : **2**
- **77 (4%)** wells were removed from initial data set.

Table: Sherburne County Private Well Nitrate Results, 2014-2016.

Township	Initial Well Dataset		Final Well Dataset	
	Total Wells*	Percent of Wells \geq 10 mg/L Nitrate-Nitrogen	Total Wells	Percent of Wells \geq 10 mg/L Nitrate-Nitrogen
Becker	386	6.5%	379	5.3%
Big Lake	781	6.1%	775	5.5%
Clear Lake	207	14.5%	195	11.3%
Haven	254	20.1%	224	13.8%
Palmer	315	10.8%	302	8.6%
Santiago	127	8.7%	118	5.9%
Total	2,070	11.7%	1,993	7.5%

*All well types included.

Figure: Sherburne County Final Well Dataset Map.



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