

## Stearns 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 Stearns Soil and Water Conservation District worked together to select townships and implement the nitrate testing project. The following townships were selected: **Brockway, Crow Lake, Crow River, Fair Haven, Grove, Le Sauk, Lynden, Maine Prairie, Melrose, Millwood, Munson, North Fork, Oak, and Wakefield.** The initial sampling in Stearns County started in 2014 and follow-up sampling ended in 2015.

### Results

Two datasets are used to evaluate nitrate. The initial well dataset contains 1,883\* wells; the final dataset contains 1,788 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 95 wells (5%) were removed. The results from the initial and final well datasets are summarized in the table below.

In Grove Township, 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 0% to 11.4% percent. The Stearns County Final Report will be available on the MDA website in 2017:

[www.mda.state.mn.us/townshiptesting](http://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](http://www.mda.state.mn.us/nfmp).

### Funding Acknowledgement

*Funding for this project is provided by the Clean Water, Land and Legacy Amendment.*

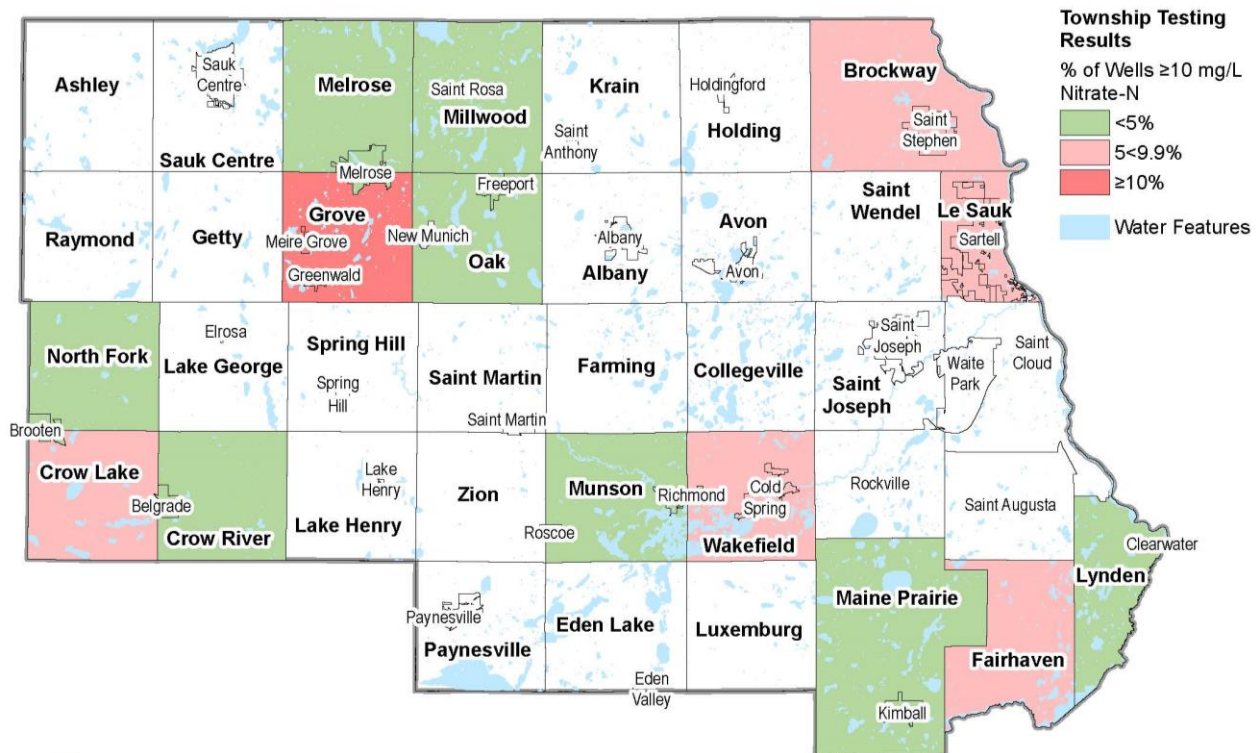


Table: Stearns County Private Well Nitrate Results, 2014-2015.

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
Brockway	263	10.3%	253	9.9%
Crow Lake	34	5.9%	34	5.9%
Crow River	46	2.2%	45	2.2%
Fair Haven	152	8.6%	146	6.8%
Grove	46	13.0%	44	11.4%
Le Sauk	164	7.9%	156	6.4%
Lynden	233	3.0%	223	1.8%
Maine Prairie	204	5.9%	194	3.6%
Melrose	67	6.0%	61	3.3%
Millwood	87	2.3%	84	1.2%
Munson	201	6.0%	197	4.6%
North Fork	20	0.0%	19	0.0%
Oak	52	1.9%	51	0.0%
Wakefield	314	11.8%	281	8.2%
Total	1,883	7.3%	1,788	6.9%

\* All well types included.

Figure: Stearns County Final Well Dataset Map, 2017.



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