

Wabasha County: Final Overview of Nitrate Levels in Private Wells (2017-2019)

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 site 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 Wabasha County Soil and Water Conservation District (SWCD) worked together to select townships and implement the nitrate testing project. The following townships were selected: **Chester, Elgin, Gillford, Glasgow, Greenfield, Highland, Hyde Park, Lake, Mazeppa, Mount Pleasant, Oakwood, Plainview, West Albany, and Zumbro**. The initial sampling in Wabasha County started in 2017 and follow-up sampling ended in 2019.

Results

Two datasets, “Initial” and “Final”, are used to evaluate nitrate in private wells. The initial dataset represents private well drinking water regardless of the potential source of nitrate. The final database was formed through an assessment process to evaluate wells. In the assessment, wells that had nitrate-nitrogen results over 5 mg/L were removed from the initial dataset to form the final dataset if a potential non-fertilizer source or well problem was identified, there was insufficient information on the construction or condition of the well, or for other reasons which are outlined in the full report (see Appendix E for details). The final dataset represents wells with nitrate attributed to the use of fertilizer. The initial dataset for Wabasha County contains 1,087 wells; the final dataset contains 827 wells. A total of 260 wells (24%) were removed.

The results from the initial and final well datasets are summarized in the following table and figures. In the initial dataset 13 of the townships tested had more than 10% of the wells over the Health Risk Limit of 10 mg/L of nitrate-nitrogen (see map). In the final dataset five of the townships had more than 10%. The final percent of wells over the Health Risk Limit in each township ranged from 0% to 15.4%. The Wabasha County Final Report will be available on the MDA website in 2019: www.mda.state.mn.us/townshiptesting.

Wabasha County Final Highlights

- Number of final township results with 10% of wells over the HRL : 5
- **260 (24%)** wells removed from initial dataset.

Next steps

The MDA uses the TTP data and assessment process and prioritization guidelines in the Minnesota Nitrogen Fertilizer Management Plan (NFMP) to determine next steps. It is the MDA's intent to implement the voluntary aspects of the NFMP in townships with elevated nitrate with the highest priority placed on areas with high sampling results. Find more information about the NFMP on the MDA website at

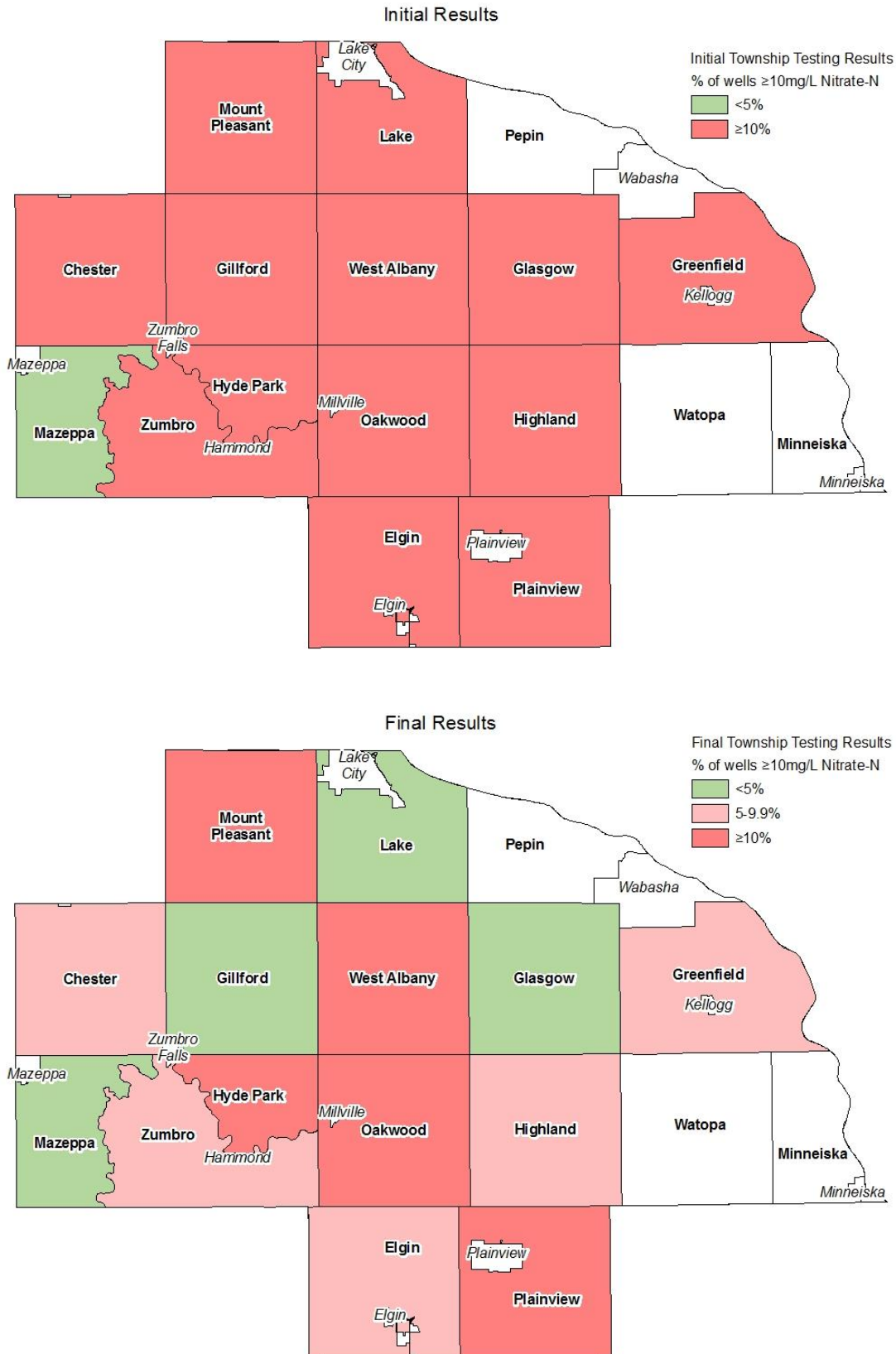
www.mda.state.mn.us/nfmp.

Table: Wabasha County Private Well Nitrate Results.

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
Chester	53	13.2%	41	7.3%
Elgin	96	26.0%	60	8.3%
Gillford	69	13.0%	32	0.0%
Glasgow	37	10.8%	30	3.3%
Greenfield	297	11.1%	263	8.4%
Highland	47	23.4%	27	7.4%
Hyde Park	38	15.8%	30	13.3%
Lake	70	12.9%	54	1.9%
Mazeppa	84	2.4%	69	0.0%
Mount Pleasant	56	25.0%	43	11.6%
Oakwood	32	15.6%	26	15.4%
Plainview	71	33.8%	43	11.6%
West Albany	37	29.7%	25	12.0%
Zumbro	100	14.0%	84	6.0%
Total	1,087	16.0%	827	7.3%

* All well types included.

Figure: Wabasha County Initial and Final Well Dataset Map.



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