

## Benton County: Final Overview of Nitrate Levels in Private Wells (2013-2017)

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 Benton Soil and Water Conservation District worked together to select townships and implement the nitrate testing project. The following townships were selected: **Langola, Maywood, Minden, and Watab**. The initial sampling in Benton County started in 2013, except for Minden Township which began in 2016. The follow-up sampling ended in 2016, for three of the four townships. Follow up sampling for Minden Township was completed in 2017.

### Results

Two datasets are used to evaluate nitrate. The initial well dataset contains 732 wells; the final dataset contains 690 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 42 wells (6%) were removed. The results from the initial and final well datasets are summarized in the table below.

In Langola Township, more than 10% of the wells were at or over the Health Risk Limit (HRL) of 10 mg/L nitrate-nitrogen (map below) for the final well dataset. The percent of wells at or over the Health Risk Limit in each township ranged from 1.6 to 14.4 percent. The Benton County Final Report will be available on the MDA website: [www.mda.state.mn.us/townshiptesting](http://www.mda.state.mn.us/townshiptesting).

**Table: Benton County Private Well Nitrate Results, 2013-2018.**

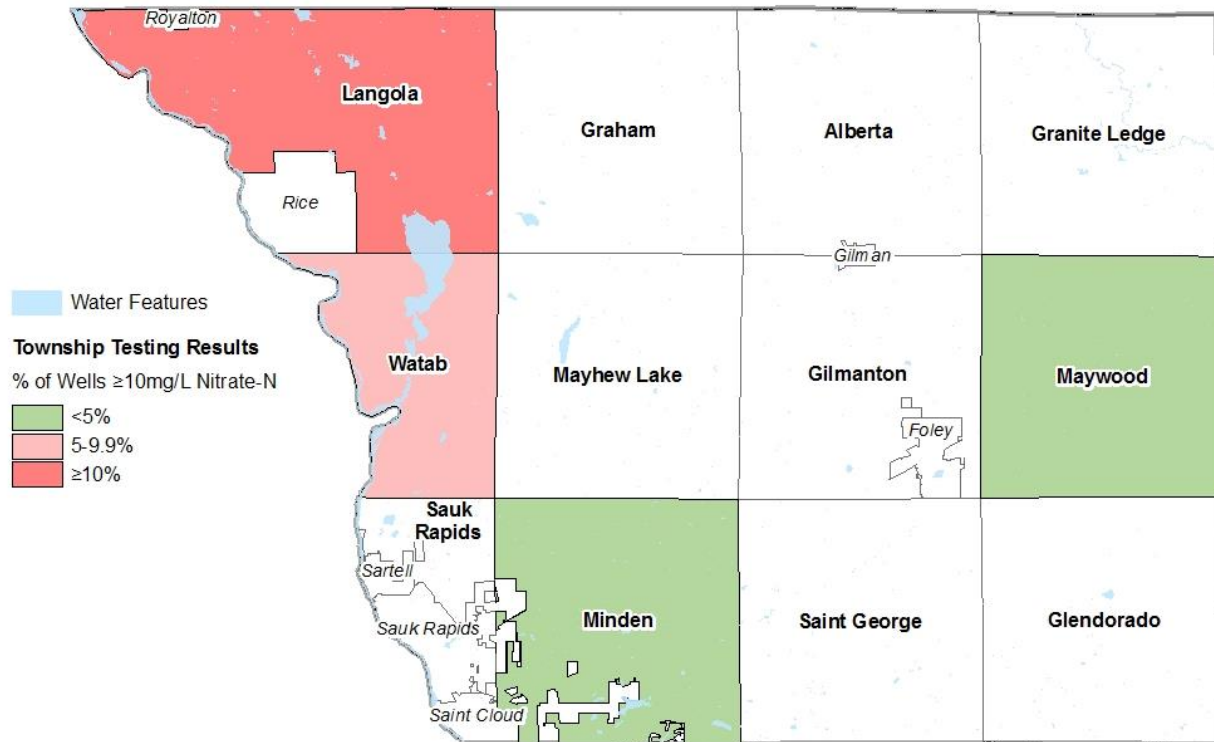
Township	Initial Well Dataset		Final Well Dataset	
	Total Wells*	Percent of Wells ≥ 10 mg/L Nitrate-Nitrogen	Total Wells	Percent of Wells ≥ 10 mg/L Nitrate-Nitrogen
Langola	103	16.5%	97	14.4%
Maywood	75	1.3%	64	1.6%
Minden	230	6.5%	218	4.1%
Watab	324	8.0%	311	8.4%
Total	732	8.1%	690	7.2%

*\*All well types included.*

### Benton County Final Highlights

- Number of townships with 10% of wells at or over the HRL : **1**
- **42** (6%) wells were removed from initial data set.

Figure: Benton County Final Well Dataset Map, 2017.



### 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).

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