

Redwood County: Final Overview of Nitrate Levels in Private Wells (2019-2020)

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. More than 90,000 private well owners have been offered nitrate testing in 344 townships since 2013.

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.

Swedes Forest was selected by the MDA for testing based on its vulnerable geology and row crop agriculture. The initial sampling in Redwood County started in 2019 and follow-up sampling ended in 2020.

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 Redwood County contains 15 wells; the final dataset contains 11 wells. A total of 4 wells (27%) were removed.

The results from the initial and final well datasets are summarized in the table and figures below. In the initial dataset, one of the 15 wells (6.7%) in Swedes Forest Township was over the HRL. In the final dataset, no wells had nitrate concentrations over the HRL of 10 mg/L (map below). However, the final dataset in Swedes Forest Township only had 11 wells, which is below the minimum of 20 wells required by the MDA to characterize a township. The Redwood County Final Report will be available on the MDA website in 2021:

www.mda.state.mn.us/townshiptesting.

Next steps

The MDA uses the TTP data and assessment process and prioritization guidelines in the NFMP to determine next steps. It is 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.

Redwood County Final Highlights

- Number of townships with 10% of wells over the Health Risk Limit: 0
- 4 (27%) wells removed from the initial dataset.

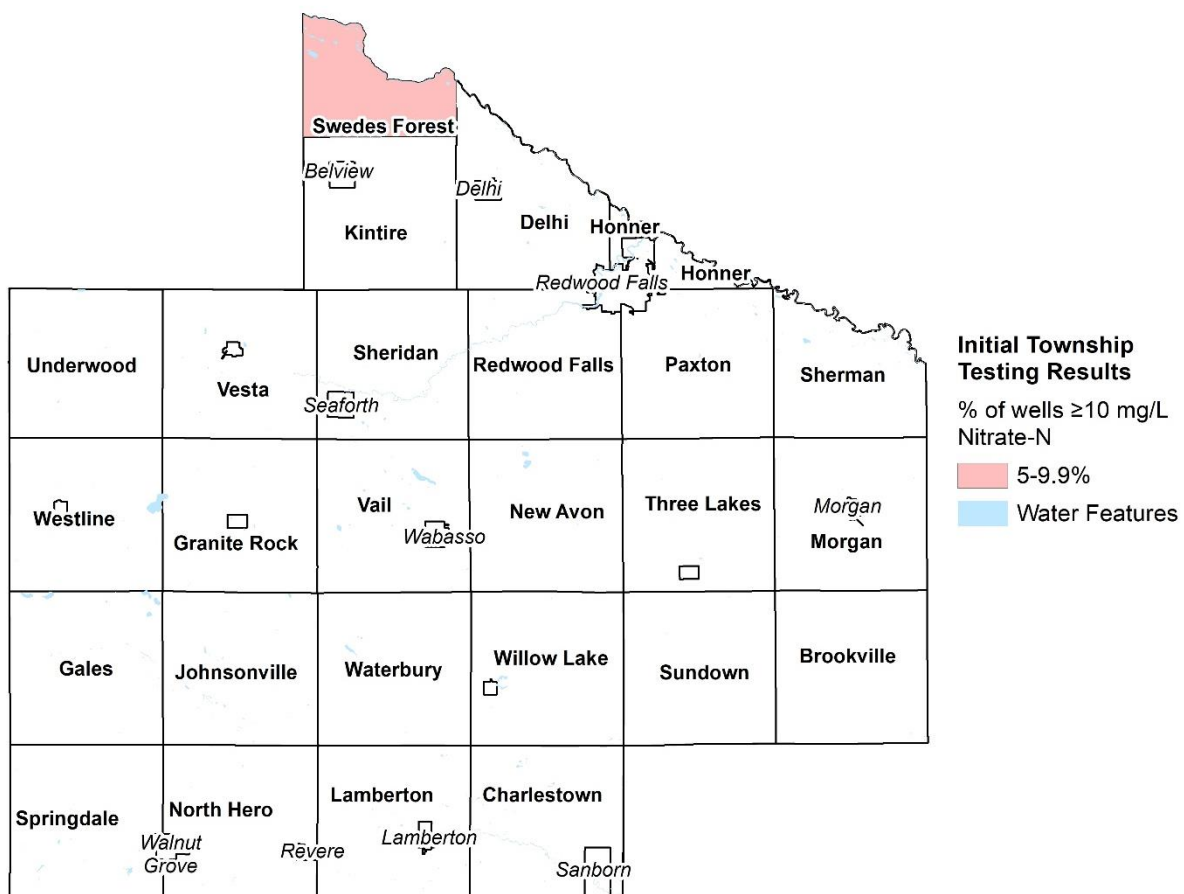
Table: Redwood County Private Well Nitrate Results

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
Swedes Forest	15	6.7%	11	0.0%

* All well types included.

Figure: Redwood County Initial and Final Well Dataset Map

Initial Results



Final Results

