

The Minnesota Department of Agriculture (MDA) along with local Soil and Water Conservation Districts (SWCDs) have been testing private wells in the network for 10 years. This could not be done without the help of homeowner volunteers! Thank you for making this program possible. Your participation is helping to protect local groundwater.

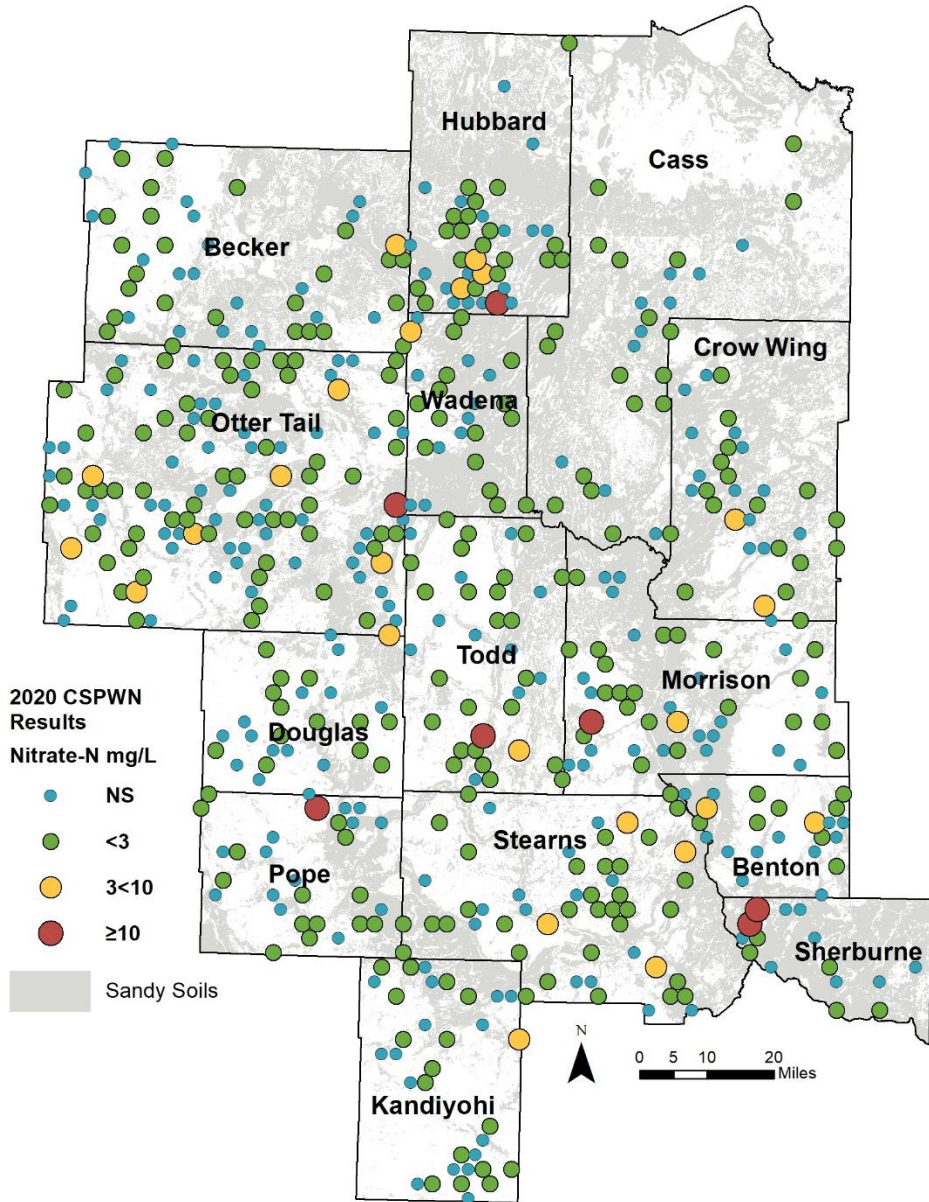
The Central Sands Private Well Network was developed in 2011 due to concerns about high nitrate levels in private drinking water wells. Drinking water high in nitrate can cause serious health effects in infants. The state's Health Risk Limit for nitrate-nitrogen is 10 mg/L.

The Central Sands region has soils that may be vulnerable to groundwater contamination. The long-term goal of the network is to determine nitrate trends in the region. To the greatest extent possible, the same households have been tested since 2011.

In 2020, 316 private drinking water wells were sampled for nitrate.

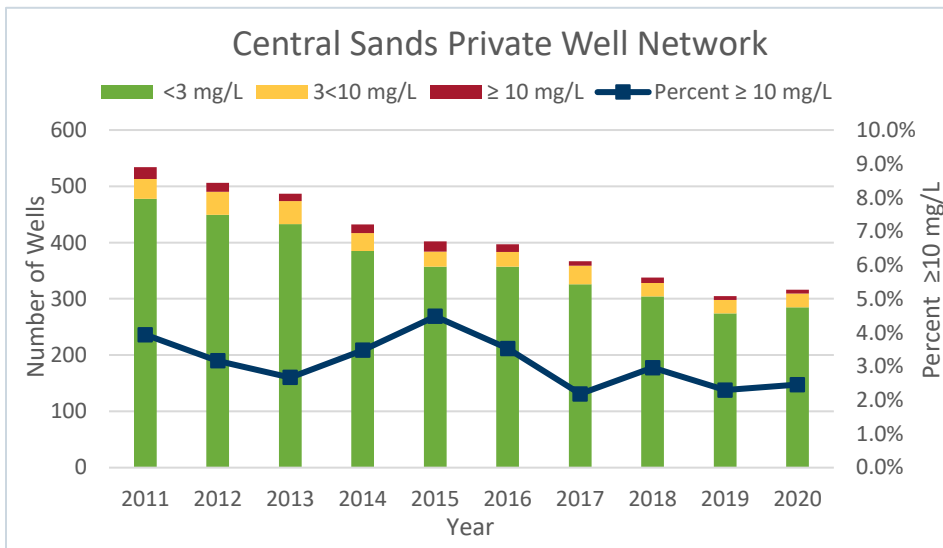
### 2020 Nitrate-N Results

- 90.2% of results were <3 mg/L
- 7.6% of results were 3<10 mg/L
- 2.2% of results were ≥10 mg/L



On a regional scale, 98% of participating wells have water that is below the Health Risk Limit for nitrate-nitrogen. As a region, nitrate levels are showing a downward trend in the 90<sup>th</sup> percentile. Individual wells fluctuate from year to year.

Participation rates did stabilize in 2020 after a downward participation trend since 2011. The overall picture continues to be representative of the network as the proportion of wells in each nitrate category remains nearly the same.



# 2020 NITRATE RESULTS BY COUNTY

Counties	Total	Nitrate-N Summary Statistics						Percentage of Wells		
		Min	Max	Mean	Median	75th <sup>1</sup>	90th <sup>2</sup>	<3 mg/L	3<10 mg/L	≥10 mg/L
		Nitrate-N mg/L or parts per million (ppm)						Percent		
Becker	25	<DL	3.8	0.3	<DL	<DL	0.4	96.0%	4.0%	0.0%
Benton	9	<DL	4.7	1.3	0.07	2.74	4.5	77.8%	22.2%	0.0%
Cass	18	<DL	1.7	0.3	<DL	0.20	1.2	100.0%	0.0%	0.0%
Crow Wing	19	<DL	6.0	0.8	<DL	0.69	3.4	89.5%	10.5%	0.0%
Douglas	14	<DL	5.1	0.4	<DL	0.04	0.6	92.9%	7.1%	0.0%
Hubbard	23	<DL	10.4	1.1	<DL	1.15	3.8	82.6%	13.0%	4.3%
Kandiyohi	18	<DL	5.7	0.4	<DL	0.04	0.8	94.4%	5.6%	0.0%
Morrison	24	<DL	19.4	1.3	<DL	0.47	2.8	91.7%	4.2%	4.2%
Otter Tail	66	<DL	12.2	1.0	<DL	<DL	4.6	87.9%	10.6%	1.5%
Pope	14	<DL	29.5	2.2	<DL	0.18	3.4	92.9%	0.0%	7.1%
Sherburne	7	<DL	33.9	8.8	<DL	19.78	32.3	71.4%	0.0%	28.6%
Stearns	37	<DL	9.8	1.0	<DL	0.99	3.9	89.2%	10.8%	0.0%
Todd	26	<DL	14.7	0.9	<DL	0.11	2.3	92.3%	3.8%	3.8%
Wadena	16	<DL	5.0	0.5	<DL	0.06	2.0	93.8%	6.3%	0.0%
Total	316	<DL	33.9	1.1	<DL	0.12	2.8	90.2%	7.6%	2.2%

<sup>1</sup> The 90th percentile means that 90% of results are below this value. <sup>2</sup> The 75th percentile means that 75% of the results are below this value.

## County Summary

Nitrate concentrations varied between counties in the Central Sands region. Sherburne County had the highest percentage of wells (28.6%) greater than 10 mg/L and it also has the highest value of 33.9 mg/L of Nitrate. However, Sherburne County has the smallest sample size (7 wells), so one high result can disproportionately affect the mean for a county. Wells with results in the range of 3 to 10 mg/L are considered impacted but safe for drinking; the water is above natural levels of nitrate but below the Health Risk Limit. Groundwater in this range is being impacted by activities on the land surface. Benton County (22.2%) has the highest percentage of impacted wells. Hubbard County has the second highest percentage with 13.0%.

The Minnesota Department of Agriculture will continue to offer free nitrate sampling kits to participating well owners on an annual basis. Wadena Soil and Water Conservation District will continue to provide local coordination for the entire network.

## Additional Programs to Protect Water Quality

Many Soil and Water Conservation Districts (SWCDs) have a cost share program to seal abandoned wells on private property. This is typically set at a 50% rate with a maximum amount per well. Be sure to contact your local SWCD about this cost share before sealing the well as preapproval is required to qualify for the cost share. Private well water should also be tested annually for bacteria by a certified laboratory.

If you have any questions on nitrate testing, please contact Kimberly Kaiser at MDA: by phone: 651-201-6280 or [kimberly.kaiser@state.mn.us](mailto:kimberly.kaiser@state.mn.us). If you have local water quality questions, contact Anne Oldakowski at the Wadena SWCD: [Anne.oldakowski@wadena.mnswcd.org](mailto:Anne.oldakowski@wadena.mnswcd.org) or by phone 218-632-4201.



*In accordance with the Americans with Disabilities Act, this information is available in alternative forms of communication upon request by calling 651-201-6000. TTY users can call the Minnesota Relay Service at 711. The MDA is an equal opportunity employer and provider.*

