

# CENTRAL SANDS PRIVATE WELL NETWORK 2013 NITRATE RESULTS

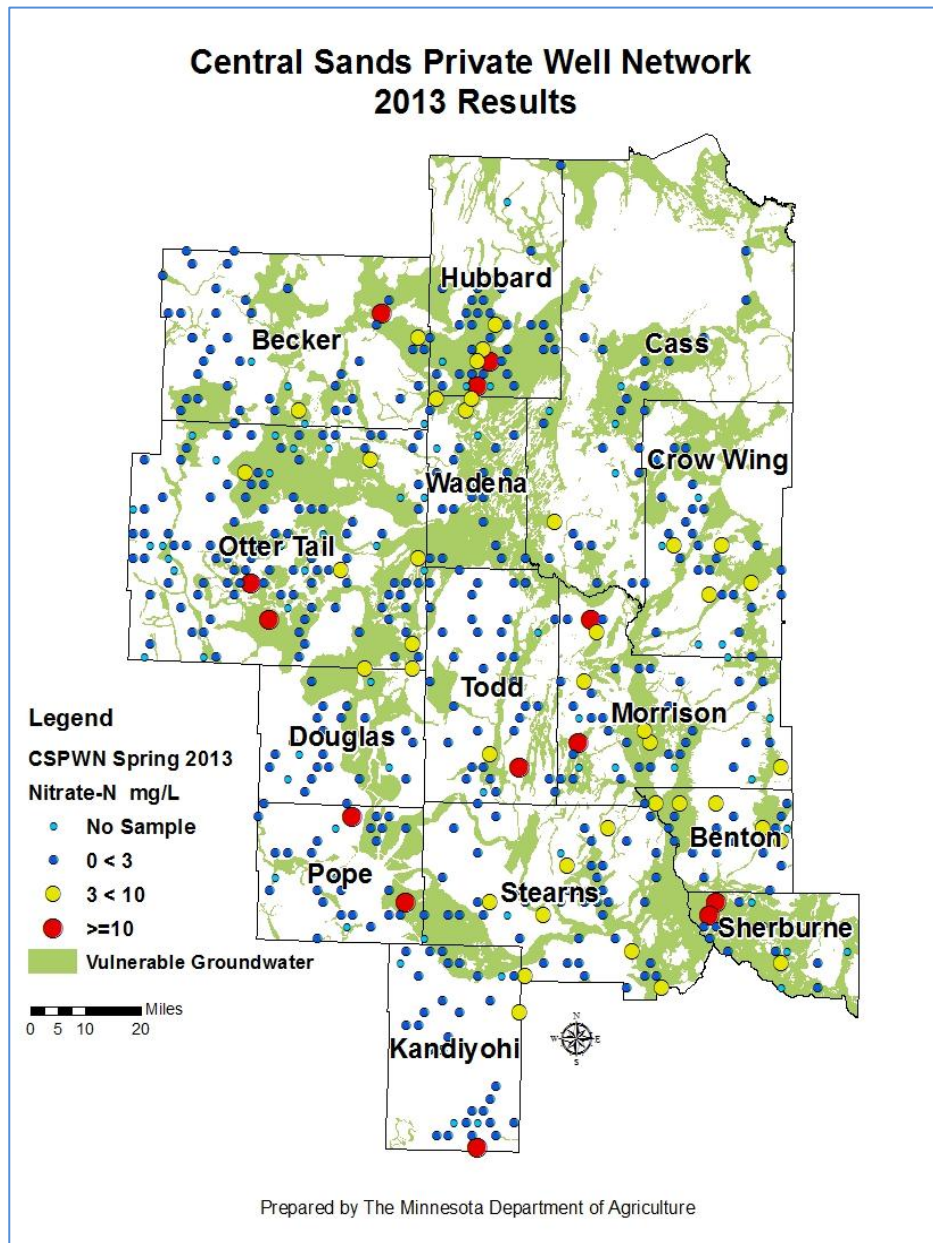
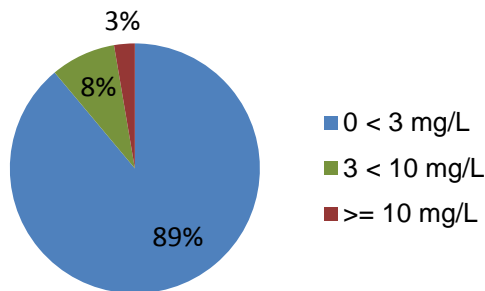
Concerns about high nitrate levels in private drinking water wells led to the development of the Central Sands Private Well Network. Too much nitrate in drinking water can cause serious health problems for infants. The state's Health Risk Limit for nitrate is 10 mg/L.

The long-term goal of the network is to determine nitrate trends in the region; this program involves annual water monitoring/testing. This could not be done without the help of homeowner volunteers!

In 2013, 487 private drinking water wells were sampled for nitrate concentrations.

## 2013 Results

- 89% of results were < 3 mg/L
- 8% of results were 3 < 10 mg/L
- 3% of results were ≥ 10 mg/L



Nitrate-N mg/L	2011	2012	2013
0 < 3	478	454	433
3 < 10	35	40	41
≥ 10	21	16	13
Percent ≥ 10	4%	3%	3%
Total Samples	534	510	487

Results from 2013 are similar to the 2011 and 2012 results, however fewer samples were returned. It is likely that well owners with results less than 3 mg/L dropped out of sampling because their results were low and didn't feel the need to continue sampling. Most well owners that have high nitrate levels in their well have stayed in the network. However, some of the high nitrate wells bounce above and below 10 mg/L, from year to year.



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# County Summary for 2013 Results

County	Number of Wells	Nitrate-N mg/L					Percentage of Wells		
		Min	Max	Median	Mean	90th Percentile	< 3	3 < 10	>=10
Becker	42	<DL	17.3	0.1	0.8	0.9	93%	5%	2%
Benton	19	<DL	9.9	0.2	1.5	4.7	74%	26%	0%
Cass	23	<DL	6.0	0.1	0.5	1.1	96%	4%	0%
Crow Wing	30	<DL	5.8	0.3	1.0	4.0	87%	13%	0%
Douglas	23	<DL	3.4	0.1	0.3	0.4	96%	4%	0%
Hubbard	36	<DL	28.9	0.2	2.1	6.5	83%	11%	6%
Kandiyohi	31	<DL	15.1	0.3	1.0	1.3	94%	3%	3%
Morrison	38	<DL	28.2	0.4	2.3	4.4	82%	13%	5%
Otter Tail	101	<DL	23.2	0.2	1.0	2.3	92%	6%	2%
Pope	24	<DL	28.1	0.2	2.2	2.7	92%	0%	8%
Sherburne	12	<DL	31.9	0.1	5.1	25.0	75%	8%	17%
Stearns	48	<DL	8.6	0.1	1.1	4.1	85%	15%	0%
Todd	36	<DL	36.1	0.2	1.6	1.5	94%	3%	3%
Wadena	24	<DL	9.5	0.2	1.3	5.4	88%	13%	0%

<DL stands for less than a detection limit. For 2013 sampling, this means the result was less than 0.1 mg/L.

Nitrate concentrations varied from county to county. Sherburne County had the highest percentage of wells (17%) greater than 10 mg/L. It also has the smallest sample size, so one high result can effect the statistics more easily than a county that may have 100 samples. In Pope County, 8% of the network wells were over 10 mg/L, but none were in the “impacted” range of 3 to 10 mg/L.

The impacted range of 3 to 10 mg/L means the water is above natural levels of nitrate, but below the health standard. Groundwater in this range is being impacted by activities on the land surface and may fluctuate over a short period of time. In Hubbard County 6% of wells were over the health standard. While in Morrison County 5% of wells were over the health standard. Benton County did not have any wells over 10 mg/L this year, but 26% are in the impacted range.

Becker County, Cass County, Crow Wing, Douglas County and Kandiyohi County have the least amount of impacted wells and very few wells over the health standard of 10 mg/L.

MDA will continue to offer free nitrate sampling kits to private well owners, on an annual basis. Over the next 2 years a certified lab will provide the sample analysis instead of Wadena SWCD staff. Wadena SWCD will continue to provide local coordination for the entire network. If you have any questions about the Central Sands Private Well Network please contact Kimberly Kaiser at [kimberly.kaiser@state.mn.us](mailto:kimberly.kaiser@state.mn.us) or by phone: 651-201-6280.



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