



## Rosemount – Community Focused Private Well Sampling

The purpose of Community Focused Sampling is to provide all county residents using a private well for drinking water a chance to test their well water for common contaminants. This report contains a summary of the results from private wells located in the City of Rosemount in Dakota County, Minnesota for 2020 and 2025. Water samples were tested for the presence of geologically derived contaminants manganese and arsenic, as well as human-related contaminants lead, chloride, and nitrate.

### Study Approach

Dakota County offered free water testing to 552 private well owners in Rosemount in 2020 and 2025. A total of 262 well owners participated (47%), and there were 47 households that participated both years. For participants who sampled in both years, only the most recent result was used in the summary. Participants collected two water samples: one from an untreated outdoor spigot and one from their primary drinking water tap. All outside samples were tested for manganese, arsenic, nitrate, coliform bacteria, and chloride. All indoor samples were tested for lead. Manganese, arsenic, and nitrate were tested if they showed elevated levels of those contaminants in the outdoor sample.

Chemical	# of Well Samples	# of Detects	Drinking Water Guideline (DWG)	# of Samples above DWG	Mean (Average) Result	Maximum Result
Outside Arsenic µg/L	262	65	10 µg/L – No safe amount	0	0.31	8.93
Outside Chloride mg/L	262	255	250 mg/L	0	49.60	222
Outside Manganese (Infants 12 months and younger) µg/L	262	147	100 µg/L	111	152.48	685
Outside Manganese (All Others) µg/L	262	147	300 µg/L	66	152.48	685
Outside Nitrate mg/L	262	162	10 mg/L	15	2.71	21.2
Coliform Bacteria (2025 only)	78	8	Absent	8	-	-
Inside Arsenic µg/L	65	27	10 µg/L – No safe amount	0	0.69	7.1
Inside Lead µg/L	261	61	15 µg/L – No safe amount	1	0.72	62
Inside Manganese (Infant < 1yr) µg/L	116	72	100 µg/L	32	101.12	1460
Inside Manganese (All Others) µg/L	116	72	300 µg/L	12	101.12	1460
Inside Nitrate mg/L	105	104	10 mg/L	9	5.22	20.04

mg/L milligrams of chemical per liter of water equivalent to parts per million (ppm)

µg/L micrograms of chemical per liter of water equivalent to parts per billion (ppb)

< less than (result is below the level that the laboratory can report)

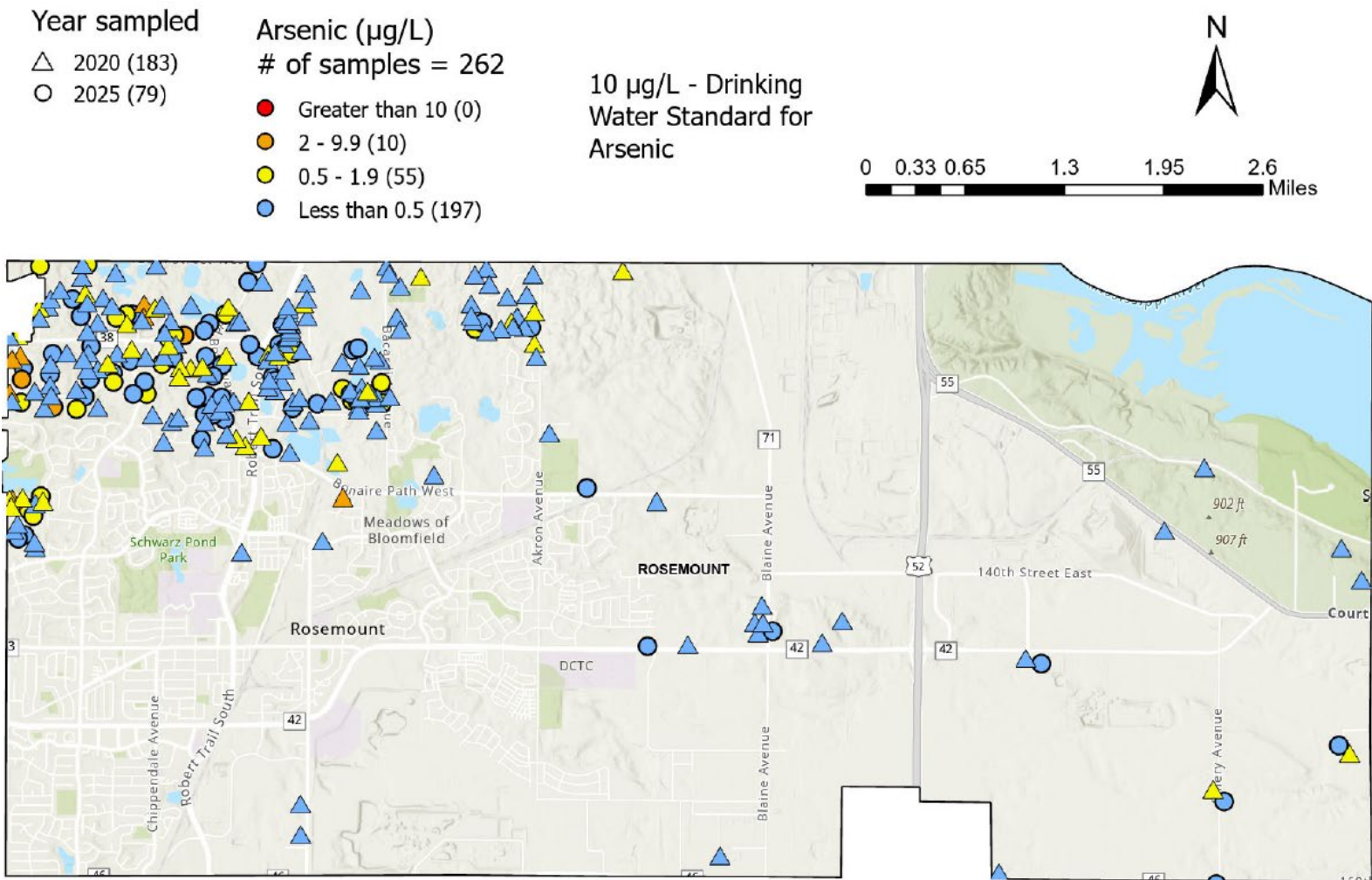
Absent means no coliform bacteria were detected in your water sample

# Arsenic

Arsenic occurs naturally in some rocks and soils and dissolves into groundwater. Long-term exposure to arsenic in drinking water can increase the risk of several types of cancer and may contribute to heart, lung, skin, and developmental health problems in children. The drinking water standard for arsenic is 10 µg/L, but the U.S. Environmental Protection Agency's health goal is 0 µg/L because any level of arsenic exposure may increase cancer risk over time.

## Results and findings

- Arsenic was detected in 24% of outdoor samples (65 wells) and 41% of indoor samples (27 of 65 inside samples). None of the indoor samples exceeded the drinking water guideline of 10 µg/L.
- Arsenic is correlated with manganese, which means when one is present the other is likely present.
- There is no relationship between well depth and the presence of arsenic.



**Fig 1. Arsenic results in untreated wells in outside spigots.**



## Nitrate

Nitrate is naturally present in groundwater at very low levels, but higher concentrations are typically linked to human activities such as fertilizer use, septic systems, and animal feedlots. In Dakota County, agricultural fertilizer is the primary source of nitrate contamination in groundwater. Drinking water with nitrate levels above 10 mg/L can be harmful to infants and may cause methemoglobinemia (“blue baby syndrome”), a serious condition that reduces the blood’s ability to carry oxygen. Testing well water for nitrate is especially important before using it for infant drinking water and formula. Nitrate in groundwater may also indicate the presence of agricultural chemicals such as herbicides. Reverse osmosis (RO) treatment systems can reduce both nitrate and many herbicides, which carbon filters can reduce some herbicides.

## Results and findings

- Nitrate was detected in 61% of outdoor samples (162 wells) and 99% of indoor samples (104 of 105 inside samples). 8% of the indoor samples exceeded the drinking water guideline of 10 mg/L (9 inside samples).
- Of the 47 well owners that participated in both years, 10 wells saw a decrease in concentration and 4 wells saw an increase. Only 1 well increased to be above the drinking water guideline in 2025.
- Nitrate is correlated with chloride, which means when one is present the other is likely present.
- Nitrate concentrations are higher in shallow wells and decrease as well depth increases.

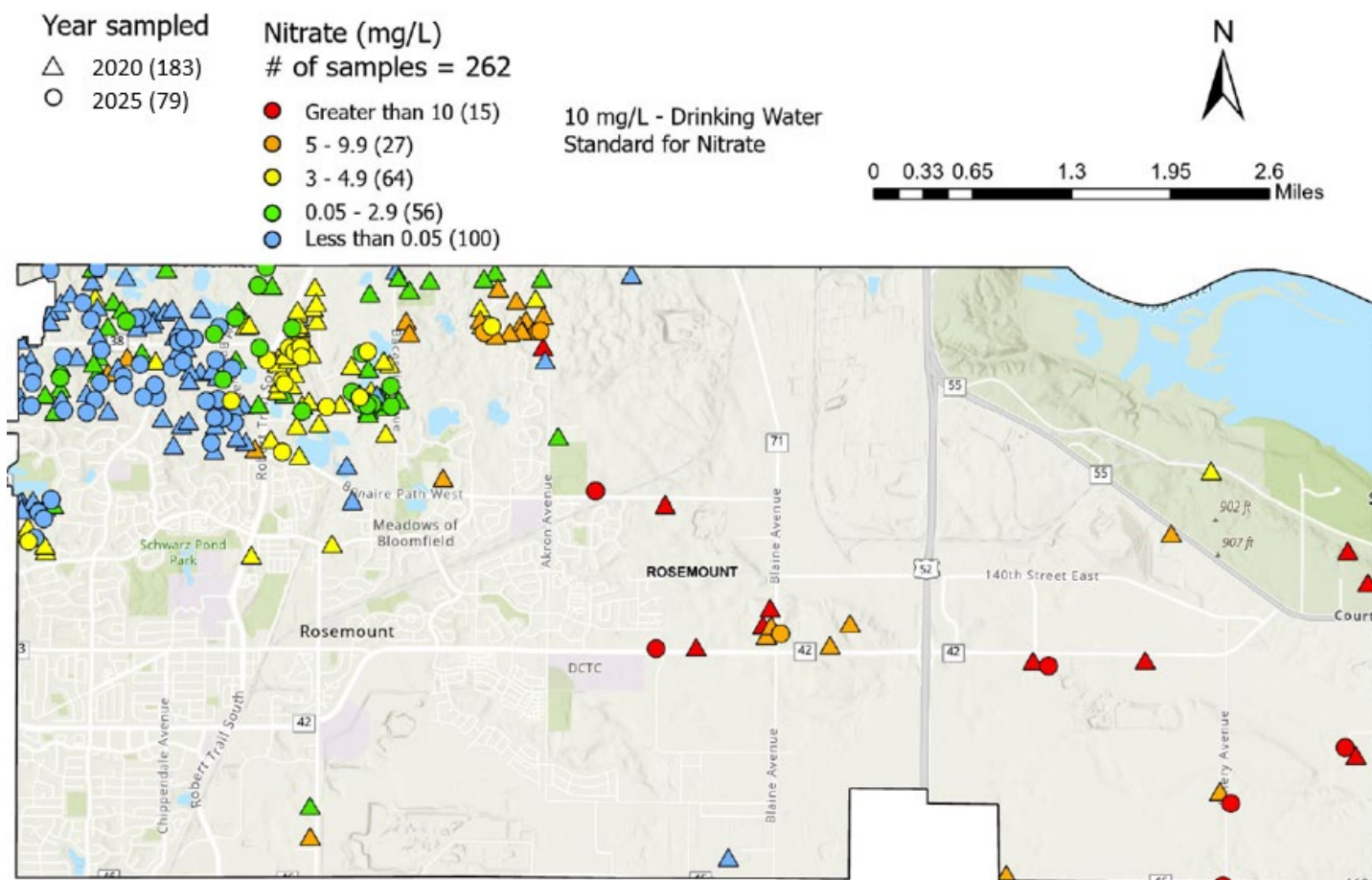


Figure 3. Nitrate results in untreated water from outside spigot

# Chloride

Chloride occurs naturally in groundwater at very low levels. Elevated chloride levels are usually caused by human activities such as road salt use, fertilizer application, water softener discharge, or deicing salt applied to sidewalks and parking lots. While there is no health-based drinking water standard for chloride, the U.S. Environmental Protection Agency recommends levels below 250 mg/L to prevent a salty taste. High chloride levels may also increase the likelihood of metals, such as lead, leaching from plumbing materials into drinking water. The presence of chloride in well water can indicate that a well is vulnerable to contamination from activities at the land surface.

## Results and findings

- Chloride was found in 97% of the outside samples (255 wells), no wells exceeded the guideline of 250 mg/L.
- Chloride is correlated with nitrate, which means when one is present the other is likely present.
- Chloride concentrations are higher in shallow wells and decrease as well depth increases.

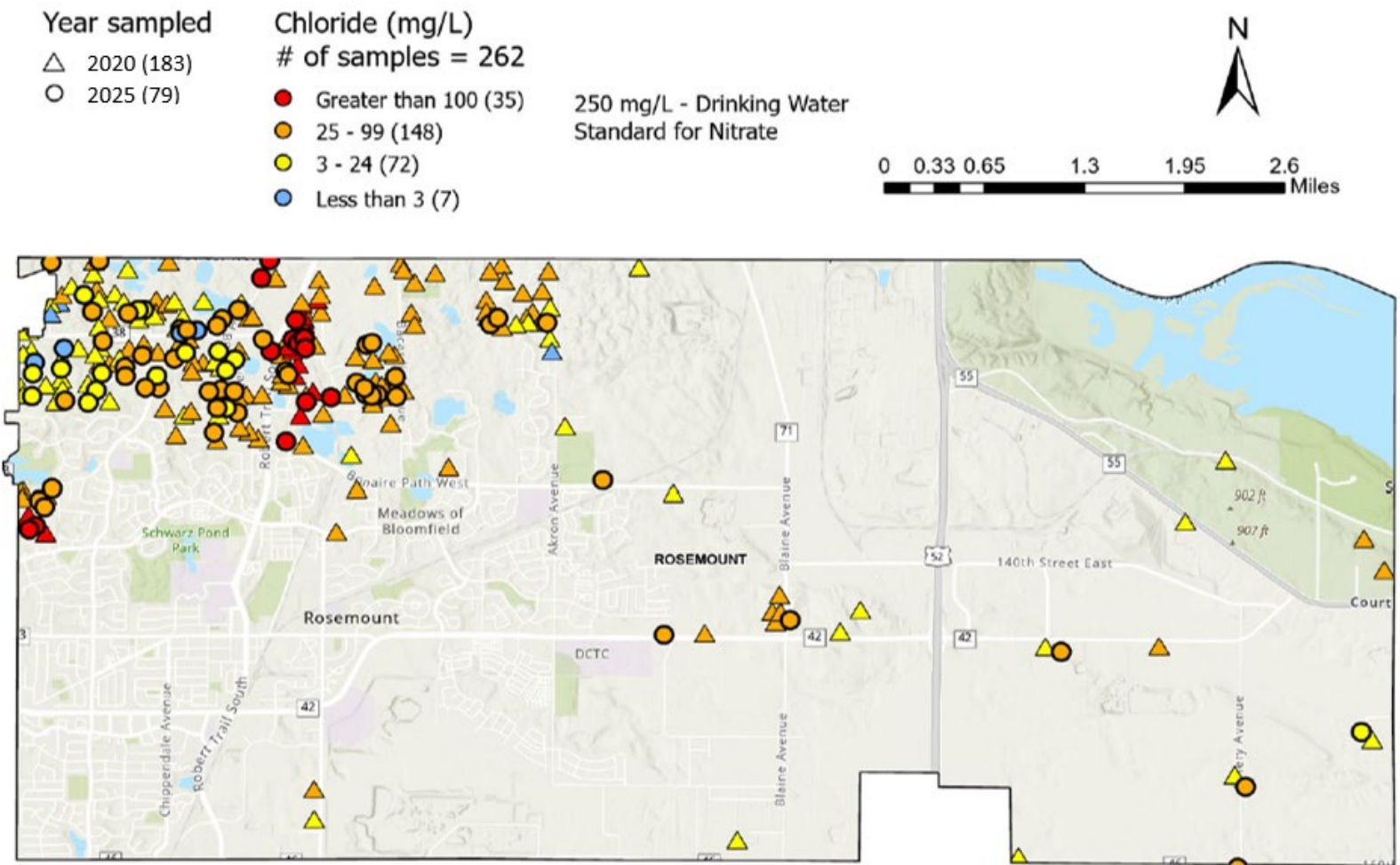


Figure 4. Chloride results in untreated water from outside spigot



## If drinking water has elevated levels of chemicals, do the following:

- ✓ Prepare infant formula with bottled water.
- ✓ **Do not boil** drinking water. Boiling water may concentrate contaminants, but it is effective at killing bacteria.
- ✓ **Identify** and, if possible, **remove** sources of contamination near the well. Fertilizers, animal wastes and sewage systems should be located far from the well and managed to avoid contamination. The top of the well should be at least 12 inches above the surrounding dirt or landscaping.
- ✓ **Install** a NSF, UL, or WQA certified water treatment system and **maintain** it annually. No single treatment process can remove all substances in water. If there are several substances you want removed from your water, you may need to combine treatment processes. The MN Dept. of Health website has information on water treatment at <http://www.health.state.mn.us> search water treatment.
- ✓ **Continue sampling.** Test your drinking water after you install treatment because there is often no other way to know if a treatment system is working properly. To test for common chemicals of concern, you can have a water test kit mailed to you by requesting one online at [www.co.dakota.mn.us](http://www.co.dakota.mn.us) search well testing.
- ✓ A **Coliform Bacteria** test is recommended annually for private wells.

## We can help

- Dakota County may have a copy of your original well record on file if the well was drilled after 1975. The well record can tell you the aquifer your well is tapping and assist a well contractor who may do future work on your well. To request your well record, go to: [www.co.dakota.mn.us](http://www.co.dakota.mn.us), Search Well Information
- If you choose to install a new well and will no longer be using your existing well, the old well will need to be sealed by a MN licensed well contractor. Dakota County may have grant funds available (usually 50% of the cost to seal the well). The application is located at: [www.co.dakota.mn.us](http://www.co.dakota.mn.us), Search Well Sealing Grant.

## Further testing

Request a sample kit online from Dakota County at [www.co.dakota.mn.us](http://www.co.dakota.mn.us), Search: *Water Test*. Available tests include Coliform Bacteria, Nitrate, Arsenic, Manganese, Lead, and Fluoride.

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