

NITRATE IMPACTS ON PUBLIC WATER SUPPLY SYSTEMS

Central Plains Drinking Water Quality and Rural Health Symposium

June 2, 2026

- ▶ Improper Fertilizer Application
- ▶ Animal Feeding Operations
- ▶ Failing Septic Systems
- ▶ Improper Fertilizer Storage, Handling and Application



NITRATE SOURCES



- ▶ PWS Nitrate Sampling 2010 – 2025
- ▶ 585 PWS Systems Sampled
- ▶ 22,909 Samples Collected
- ▶ High Nitrates in PWS Systems Occur in Groundwater



NITRATE OCCURRENCE IN KANSAS PWS SYSTEMS

Number of Samples	Result	% Samples	# PWS Systems	% PWS System
13,915	< 5.0 mg/L or non-detect	61%	167	28%
7,526	≥ 5.0 mg/L to < 10.0 mg/L	33%	302	52%
1,468	≥ 10 mg/L	6%	116	20%
22,909	<u>All</u>	100%	585	100%

If MCL changes to 5.0 mg/L, 72% of KS PWS systems will be out of compliance

Individual PWS Monitoring Schedules can be found at:
<https://www.kdhe.ks.gov/548/M1-Monitoring-Schedules>

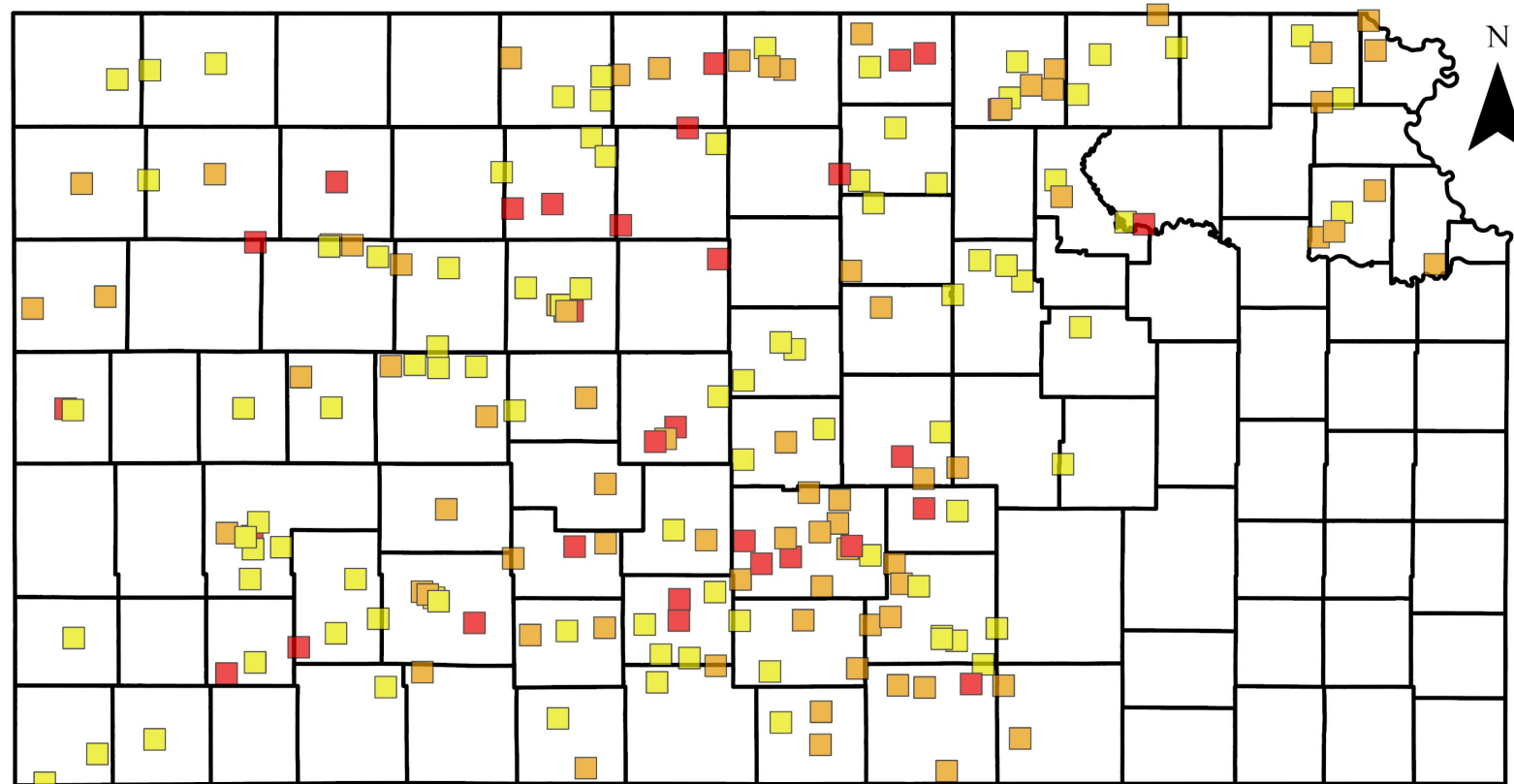
SAMPLE RESULTS 2010 - 2025

Population Served	Result	# PWS Systems	% PWS System
≤ 500	≥ 5.0 mg/L to < 10.0 mg/L	152	50%
500 – 1,000		55	18%
1,001 – 5,000		77	26%
≥ 5,000		18	6%
Total		302	100%
≤ 500	≥ 10 mg/L	59	51%
500 – 1,000		19	16%
1,001 – 5,000		30	26%
≥ 5,000		8	7%
Total		116	100%

RESULTS BY POPULATION SERVED

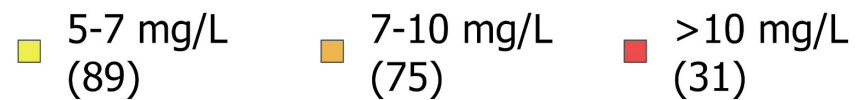
Data Courtesy of KDHE Public Water Supply Compliance Monitoring Program

Public Water Supply Systems with Elevated Nitrate Levels in Kansas



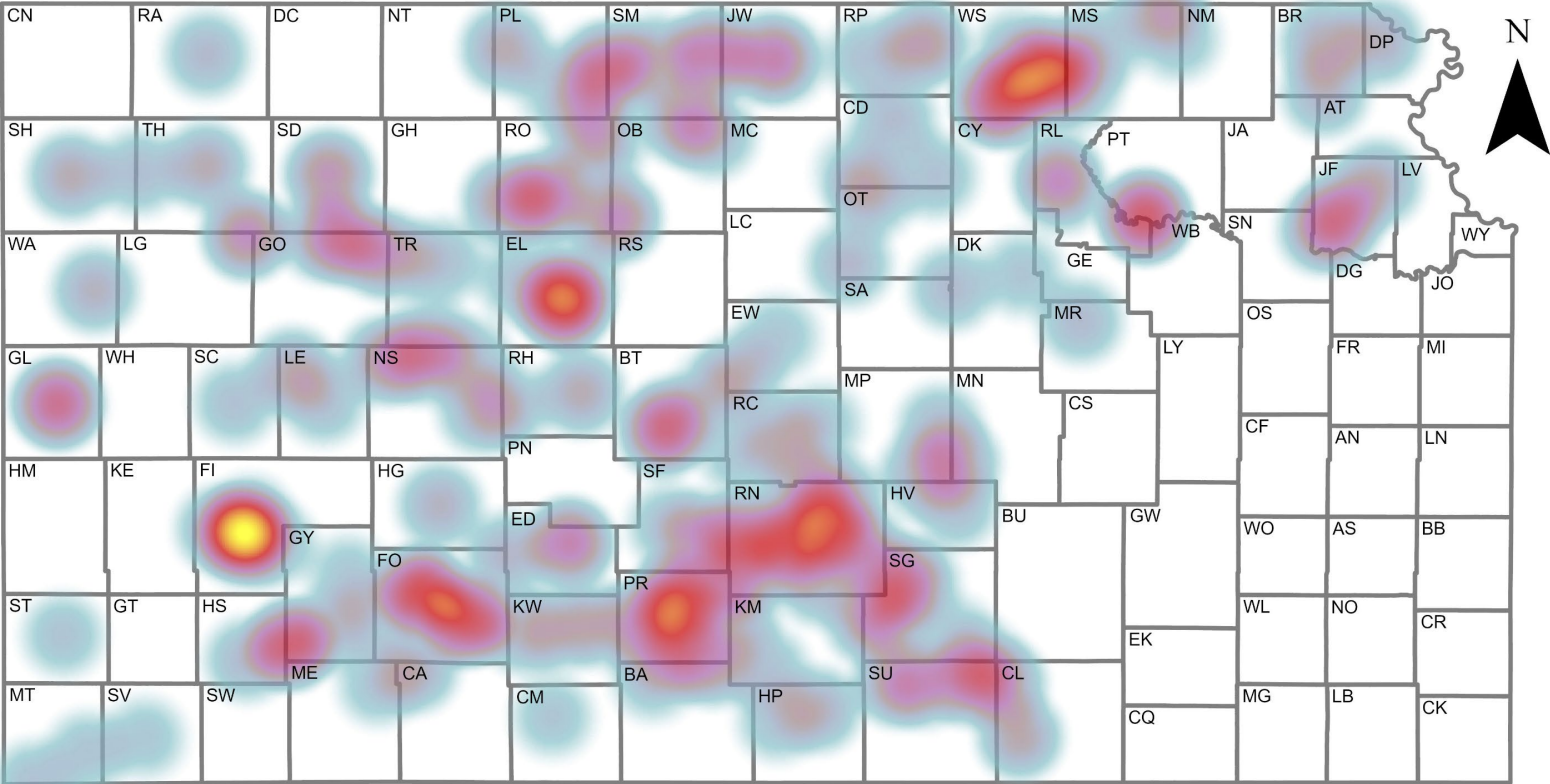
0 15 30 60 Miles

2024 Max Nitrate Concentrations for PWS



Date Created: 1/27/2025

Public Water Supply Systems with Elevated Nitrate Levels in Kansas



Data Source: KDHE,
Bureau of Water,
Public Water Supply
Publish Date:
4/2/2025

2024 Max Nitrate Concentration for PWS Systems



“Wells shall be sealed by grouting the annular space between the casing and the well bore from ground level to a minimum of 20 ft or to a minimum of 5 ft. into the first clay or shale layer, if present, whichever is greater...”



PROPER GROUTING OF ANNULAR SPACE MDS – IV, SECTION D.3.G.1

- ▶ PWS Purchase Land Around Well – Need State Funded Program
- ▶ PWS Implement Wellhead/Source Water Protection Plan
- ▶ Active and Aggressive Ag Producer Education
- ▶ Responsible Parties Pay for Mitigation and Clean-up

OTHER ACTIONS



- ▶ Stand Your Ground
- ▶ Have A Tough Hide
- ▶ Keep Moving On
- ▶ Cherish Wide Open Spaces
- ▶ Have A Strong Spirit
- ▶ Roam Wild and Free
- ▶ Let The Chips Fall Where They May

ADVICE FROM A BISON

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