Site Assessment Investigation

County Road 8 SE, St. Cloud, Haven Township
MPCA Site #SA0020440

February 17, 2026

MINNESOTA POLLUTION CONTROL AGENCY

Agenda

- Introductions
- Overview of Site Assessment (SA) process
- PFAS background and common sources
- SA investigation and results
- Next steps in SA investigation
- MDH – drinking water discussion
- Resources and Q&A

Background / Site Assessment process

- Site Assessment is an established step in the Superfund process that:
  - Identifies and evaluates if potential health exposures are present or could occur (i.e., groundwater, surface water, and/or vapor):
    - Identify impacts to drinking water wells (private and public)
    - Provide clean drinking water supply (bottled water or treatment)
    - Determine where impacts are present (i.e., define groundwater plume and/or vapor plume)
  - May identify if a potential responsible party (PRP) exists that may be liable for additional investigation, cleanup, and drinking water supply/treatment.
  - May determine potential sources of the impacts.
  - May refer sites to other MPCA (or USEPA) programs (Petroleum, Superfund, etc.).

Background / Site Assessment process

Receive Minnesota Duty Officer reports, referrals from other regulatory programs, and citizen complaints

Conduct risk assessment to determine actual or potential exposures.

Evaluate initial reports of hazardous substances, pollutants, or contaminant releases

May identify the presence of potential sources and responsible parties and refer site to other programs

What are Per- and Polyfluoroalkyl Substances (PFAS)?

PFAS:

A class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom.

Fully fluorinated carbon atom:

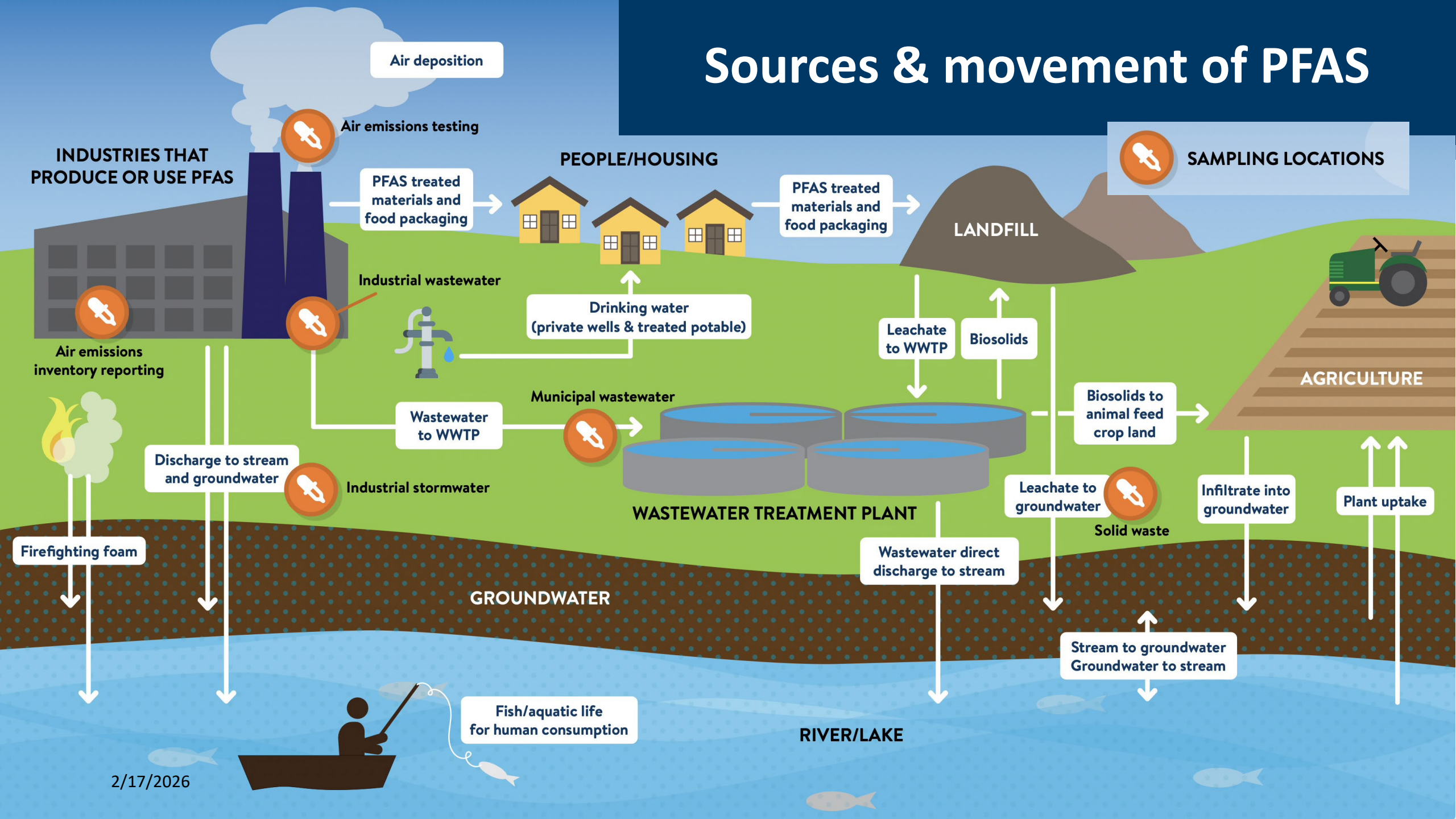
A carbon atom on which all the hydrogen substituents have been replaced by fluorine.

What are PFAS?

- Large class of surfactants with unique chemical and physical properties that make some of them (like PFOS & PFOA) extremely resistant to breakdown and mobile in the environment.
- Used since 1940s in wide range of consumer and industrial applications:
  - PFOS: Used to make Scotchgard; textiles, waxes, polishes, paints, and varnishes.
  - PFOA: Used to make Teflon; baking paper, and food wrapping and packaging.
- Have been linked to certain health effects (see MDH website).

Source: open access images – bing.com

Sources & movement of PFAS



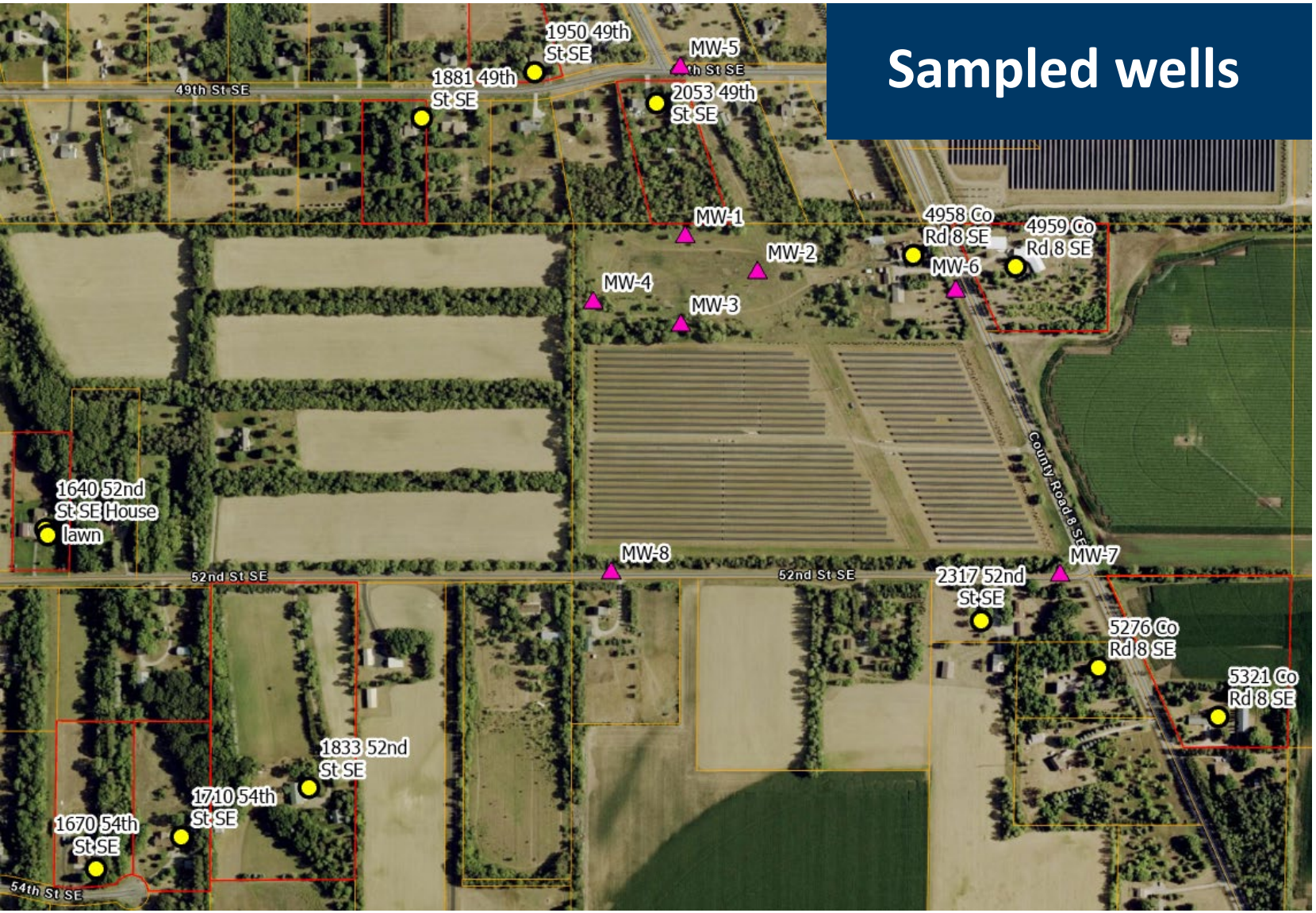
Site Background

- Case was initiated in May 2023 under the MPCA's Compliance and Enforcement (C&E) program regarding land-spreading of floor drain and septic tank sludges.
- Initial C&E corrective actions included:
  - 9 residential supply wells sampled in 2023-2024
  - 4 monitoring wells sampled twice in 2024
  - PFOA, PFOS, and PFHxS detected in wells above drinking water criteria
  - Results letters sent to residents in February 2025
- PFAS was detected in groundwater samples, and the case was transferred to the Site Assessment program in March 2025.
- Under both programs, MPCA hydrologist directs investigations and corrective actions.

Summary of SA Investigation

- Site Assessment investigation started in March 2025
- Access agreements to 22 well owners
- Groundwater elevations collected in June and November 2025 indicate a S/SW flow direction
- Ongoing activities:
  - To-date, sampled total of 15 domestic and 8 monitoring wells
  - Currently have access to 9 private wells and 4 monitoring wells. MW-5 through MW-8 will be resampled in spring 2026
  - Based on data, will seek access to more wells
  - Providing bottled water as interim supply
  - Providing granular activated carbon (GAC) treatment systems in homes for long-term use
  - Report submitted to MPCA in June 2026

Sampled wells



8 monitoring wells:

- MW-1 through MW-4 sampled in July & Oct 2024
- MW-5 through MW-8 sampled in June 2025 (sampling again spring 2026)

15 residential wells (includes 1 irrigation well):

- 5 water table wells (50’)
- 5 buried aquifer wells (70-80’)
- 1 well >100’ deep
- 4 unknown aquifers

PFAS compounds that exceed drinking water criteria:

- PFHxS
- PFOS
- PFOA

Other PFAS compounds detected do not exceed drinking water criteria

Summary of PFAS results (exceeding criteria) – monitoring wells

Sample Location:	MW-1		MW-2		MW-3		MW-4		MW-5	MW-6	MW-7	MW-8	Drinking Water Criteria (ng/L)
Sample Date:	7/24	10/24	7/24	10/24	7/24	10/24	7/24	10/24	6/25	6/25	6/25	6/25	
PFHxS	7.5	7.5 J	7.6	6.2	8.3	5.3	6.1	5.1	8.9	15	18	7.3	10
PFOS	1.7	<3.5	3.4	3.3	1.1	1.1	6.5	7.6	1.8	5.3	5.0	3.5	2.3
PFOA	9.9	8.6 J	16.7	13.0	6.6	6.2	20.5	17.7	19	55	85	49	0.0079

All results in nanograms per liter (ng/L) also referred to as parts per trillion (ppt)
Table only showing results for compounds that exceed Drinking Water Criteria:

PFHxS - Perfluorohexanesulfonic acid
PFOS - Perfluorooctanesulfonic acid
PFOA - Perfluorooctanoic acid

Summary of PFAS results (exceeding criteria) – residential wells

Address	4959 County Rd 8 SE		4958 County Road 8 SE	1881 49th St SE		1950 49th St SE		1965 49th St SE	2011 49th St SE	2053 49th St SE		2317 52nd St SE	5276 Co Rd 8 SE	1640 52nd St (House)	1640 52nd St (Lawn)	1670 54th St	1710 54th St	1833 52nd St	5321 County Rd 8	Drinking Water Criteria (ng/L)
Depth	**48-52'**		**39-43'**	**72-80'**		**76-84'**		**UNK**	**UNK**	**108-116'**		**87-95'**	**45-49'**	**80-90'**	**104-124'**	**72-80'**	**77-81'**	**UNK**	**UNK**	
Date	8/24	6/25	7/23	8/24	6/25	8/24	6/25	8/24	8/24	8/24	6/25	8/24	8/24	6/25	6/25	6/25	6/25	6/25	6/25	
PFHxS	**18.4**	**16**	**10.1**	**1.4**	**1.6**	<1.1	<0.59	**1.4**	<1.1	<1.0	<0.60	**16.2**	**17.7**	<0.70	**5.1**	**17**	**19**	<0.61	**9.6**	**10**
PFOS	**6**	**7.9**	<2.0	<1.0	<0.95	<1.1	<0.96	<1.0	<1.1	<1.0	<0.97	**4.5**	**3.6**	<1.1	**19.0**	**17.0**	**8.0**	<1.0	**1.8**	**2.3**
PFOA	**60.2**	**71**	**24.6**	**1.2**	**1.6**	<1.1	<0.66	<1.0	<1.1	<1.0	<0.67	**57.8**	**61.2**	<0.78	**4.3**	**63.0**	**1.5**	<0.69	**41**	**0.0079**

All results in nanograms per liter (ng/L) also referred to as parts per trillion (ppt)
(ppt)Table only showing results for compounds that exceed Drinking Water Criteria:

PFHxS - Perfluorohexanesulfonic acid
PFOS - Perfluorooctanesulfonic acid
PFOA - Perfluorooctanoic acid

Well exceedances

15 residential wells sampled (includes 1 irrigation well) & 8 MWs:

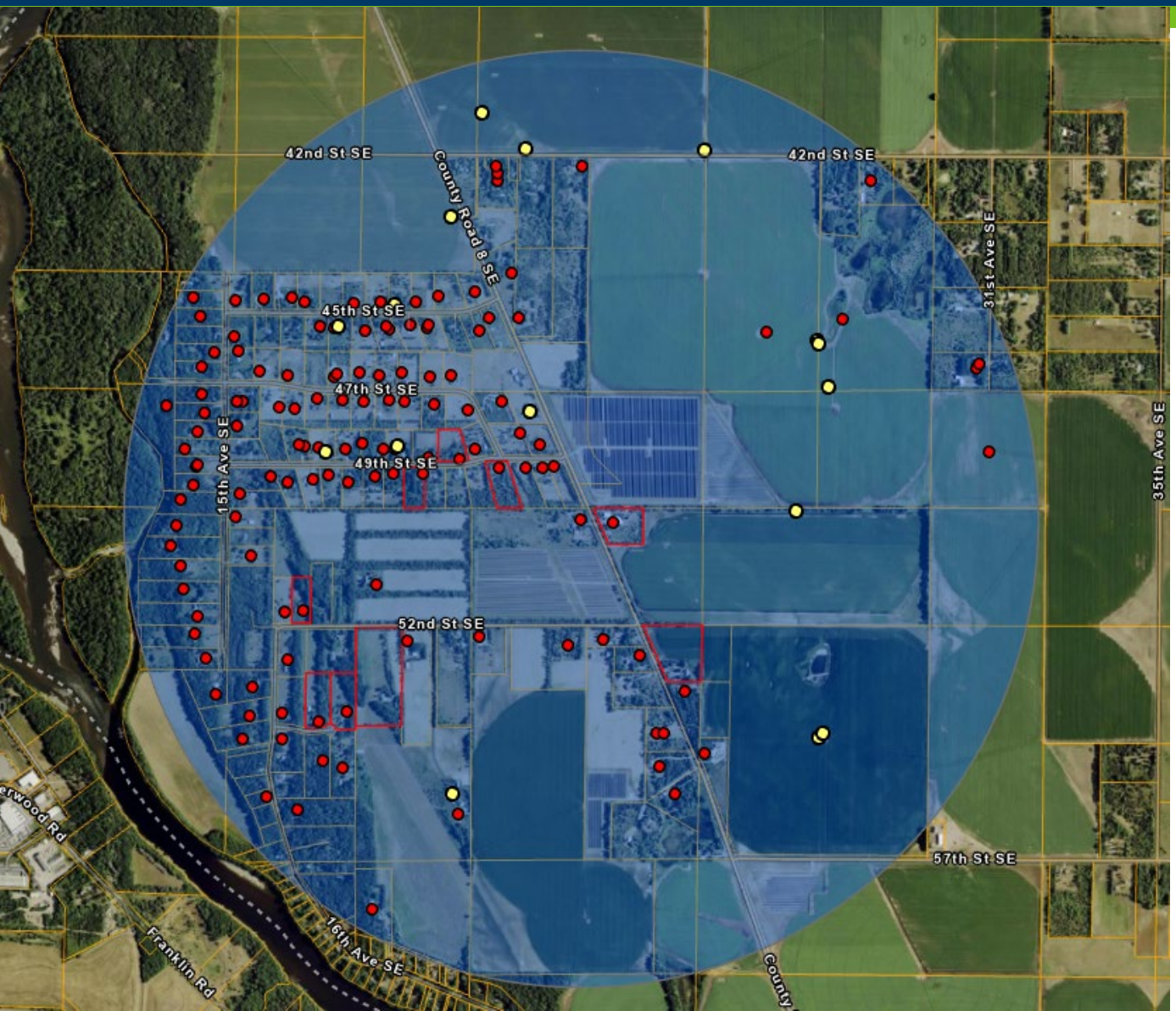
- 5 water table wells (50’)
- 5 buried aquifer wells (70-80’)
- 1 well >100’ deep
- 4 unknown aquifers

PFAS compounds that exceed drinking water criteria:

- PFHxS (ND – 19 ng/L)
- PFOS (ND – 19 ng/L)
- PFOA (ND – 85 ng/L)

Other PFAS compounds detected do not exceed drinking water criteria

Wells identified within 1-mile radius



151 active wells within 1-mile radius of Site:

135 domestic wells (red)

- 33 water table aquifer
- 40 buried sand aquifer
- 62 wells deeper than 100’ (primarily bedrock)

16 Irrigation wells (yellow)

- 7 water table aquifer
- 5 buried aquifers
- 4 other & unknown aquifers

- Mississippi River ~1 mile to the W/SW
- Water table aquifer and buried sand aquifer are highly vulnerable to surface contamination

Next steps of Site Assessment investigation

- Identify additional wells to sample, request access from owners
- Collect drinking water samples and provide bottled water/treatment
- Collect groundwater samples and elevations, evaluate flow direction, concentrations, & risks to receptors
- Determine extent of drinking water exceedances in sampled wells
- Determining extent and source(s) of groundwater contamination
- MPCA's contractor will provide report in June 2026 which will include PFAS forensics/statistical analysis to help identify sources

MDH Site Assessment and Consultation (SAC)

Works to ensure that investigation, cleanup, and redevelopment consider and address public health concerns.

- **Health assessments and consultations** of contaminant releases at sites containing hazardous substances
- **Technical assistance** to other state and local agencies
- **Health education** to reduce / eliminate exposure and protect health
- **Community engagement** to inform people of public health concerns and limit risk
- **Provide information** about health, safety, and environmental risks

Health Risk Assessment (HRA)

CLEAN WATER LAND & LEGACY AMENDMENT

YOUR Clean Water Fund AT WORK

[Contaminants of Emerging Concern (CEC) Initiative]

[Health Risk Limits Program]

[Fish Consumption Guidance]

HRA develops health-based guidance

Concentration of a contaminant(s) in water that is likely to pose little or no health risk to people who drink the water, including sensitive and highly exposed populations.

General HRA full review workflow

Review Announced

Interim Review

- Literature Search
- Data synthesis

Peer Review

Final Review

- Supporting docs
- Additivity

Peer Review

Finalization & Communication

Drinking water guidance: MCLs and HBVs

Maximum Contaminant Levels (MCLs)

- Created by **US EPA**
- **Highest concentration of a contaminant allowed** in a public water system
- Legally enforceable
- Considers **health effects and cost / feasibility of water treatment**

Health-based Values (HBVs)

- Created by **MDH**
- Concentration of a contaminant(s) in drinking water **that is likely to pose little or no health risk**
- **Not** legally enforceable
- Considers **only health effects**

Reviewed: 4/2025

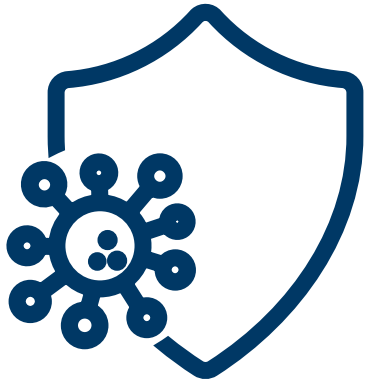
MDH PFAS health-based guidance values & limits

MDH develops these values to protect the most vulnerable populations (pregnant people, infants, children) over a lifetime of exposure.

- **PFOA:** 0.0000079 parts per billion (ppb) or 0.0079 parts per trillion (ppt).
- **PFOS:** 0.0023 ppb (or 2.3 ppt).
- **PFHxS:** 0.01 ppb (or 10 ppt).*
- **PFHxA:** 0.2 ppb (or 200 ppt).
- **PFBA:** 7 ppb (or 7,000 ppt).
- **PFBS:** 0.1 ppb (or 100 ppt).

Statement on Additivity Calculation
Because PFAS often occur in mixtures, MDH uses a cumulative approach to assess risk rather than looking at each chemical in isolation.

Health Effects related to PFAS



Immune suppression

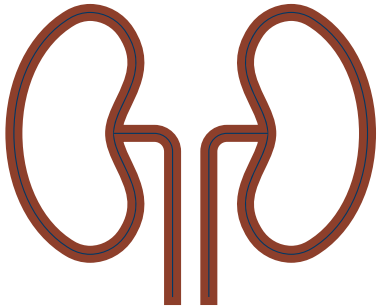
Decreased antibody production

Developmental effects

Lower birth weight

Changes in liver function

Higher cholesterol and liver enzymes



Kidney cancer

PFOA only; after a lifetime of exposure

Reviewed: 4/2025

Why PFAS are Concerning

PFAS behave **differently** than other chemicals

- Slowly removed from the body
  - Repeated exposure over time results in a build-up in the body

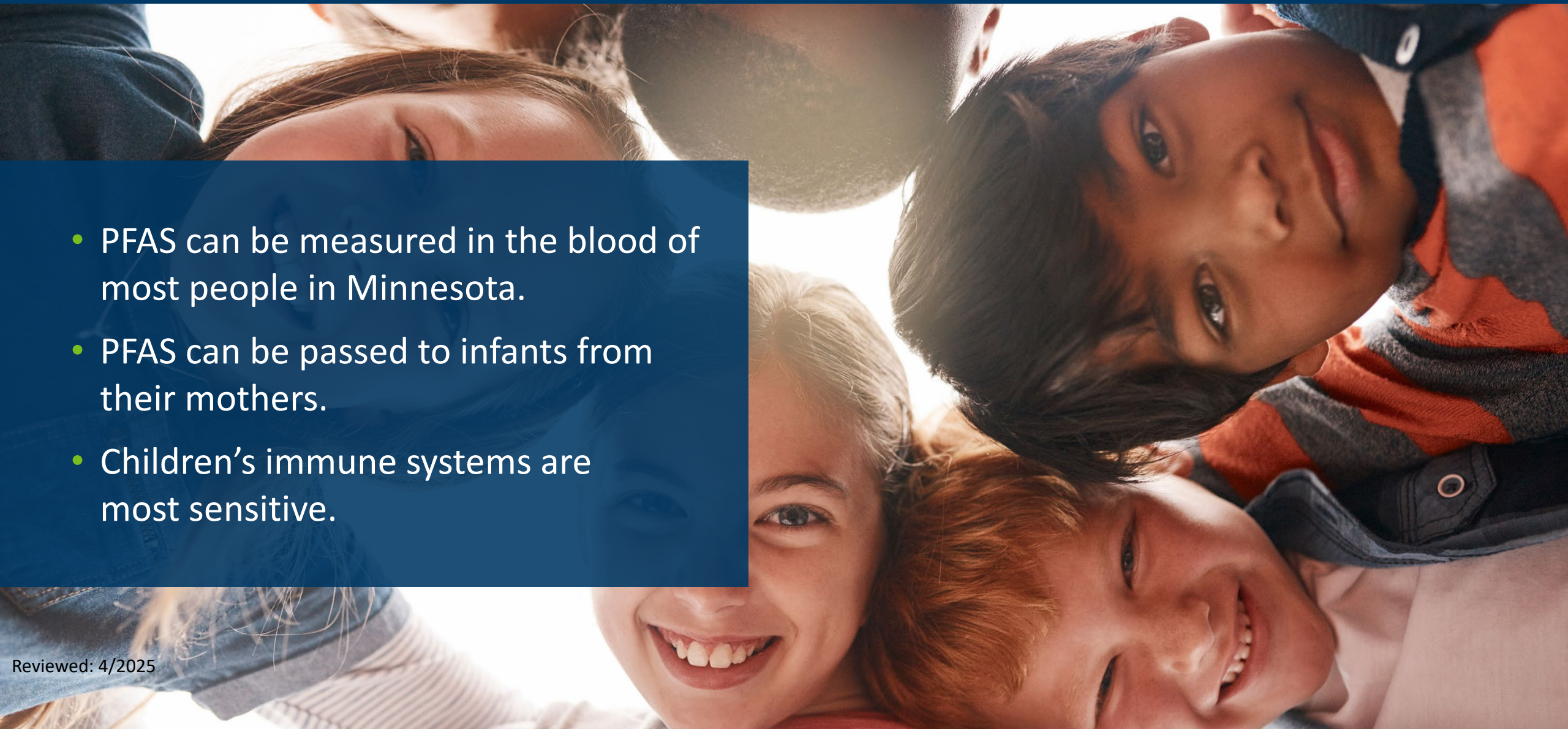
  (parts per trillion (ppt or ng/L) in water can result in parts per billion (ppb or µg/L) in serum)
- Accumulated levels can be passed on
  - Placental transfer (infant born with similar levels as mom)
  - Breastmilk transfer

MDH recommends all people planning to breastfeed or currently breastfeeding to continue doing so. The many benefits of breastfeeding outweigh the known risks from PFAS.

Reviewed: 4/2025

Learn more about PFAS and Health online

Summary: PFAS are a concern to all Minnesotans



- PFAS can be measured in the blood of most people in Minnesota.
- PFAS can be passed to infants from their mothers.
- Children’s immune systems are most sensitive.

Reviewed: 4/2025

U.S. EPA Drinking Water Standard: Nitrate

The U.S. Environmental Protection Agency (EPA) sets legally enforceable standards for public water systems to ensure safety.

- EPA's Maximum Contaminant Level (MCL) for Nitrate (measured as nitrogen) is 10 parts per million (ppm)

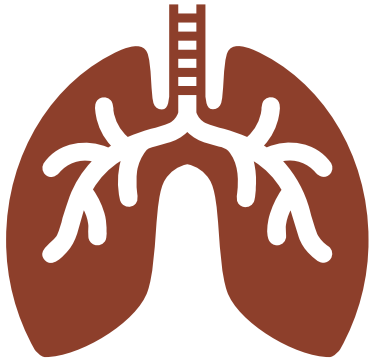
Common sources of nitrate in drinking water

Fertilizers: Runoff from fertilized farmland, lawns, and golf courses is a primary source.

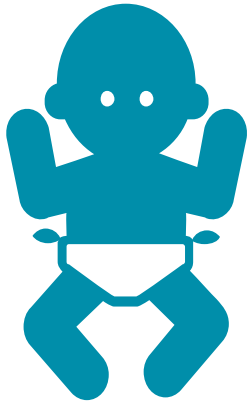
Septic Systems: Leaking or malfunctioning septic tanks release human sewage directly into the ground.

Sewage & Wastewater: Discharge from municipal sewage treatment plants.

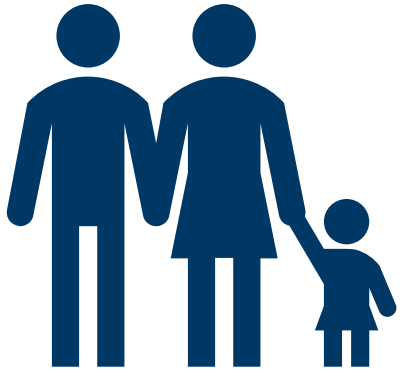
Health effects related to nitrate



Nitrate affects how blood carries oxygen in humans.



Exposure to high levels of nitrate can cause methemoglobinemia. Babies under 6 months old are at the highest risk.



Newer research on longer-term nitrate exposure in adults suggests associations with colorectal cancers and birth defects.

Reviewed: 4/2025

Drinking water guidance: MCLs, MCLGs, HBVs, HRLs

US EPA Values: MCLs and MCLGs

- Maximum Contaminant Level (Goals)
- **MCLG**: Level of a contaminant in drinking water below which there is **no known or expected risk to health.**
  - Carcinogens – always set to 0 (EPA policy)
  - Not legally enforceable
- **MCL**: **Highest concentration of a contaminant** legally allowed in a public water system
  - Considers cost and feasibility of water treatment

MDH Values: HBVs and HRLs

- Health-Based Values and Health Risk Limits
- **HBV**: Concentration of a contaminant(s) in drinking water that is **likely to pose little or no health risk**
  - Not legally enforceable
- **HRL**: value that is written into Minnesota rule
- Both consider only health effects

Reviewed: 4/2025

PFOS and PFOA guidance over the years

Year	Concentration (ng/L, ppt)	
	PFOA	PFOS
2002	7000	1000
2006	1000	600
2007	500	300
2009	300	
2013		
2016	70	70
2017	35	27
2019		15
2022		
2024	0.24 (noncancer) 0.0079 (cancer)	2.3 (noncancer) 7.6 (cancer)

Reviewed: 4/2025

Resources – MPCA and U.S. EPA

PFAS | Minnesota Pollution Control Agency:
https://www.pca.state.mn.us/pollutants-and-contaminants/pfas

Minnesota's PFAS Blueprint | Minnesota Pollution Control Agency:
https://www.pca.state.mn.us/air-water-land-climate/minnesotas-pfas-blueprint

PFAS Explained | US EPA:
https://www.epa.gov/pfas/pfas-explained

Resources – MDH

PFAS and Health - MN Dept. of Health:
https://www.health.state.mn.us/communities/environment/hazardous/topics/pfashealth.html

Per- and Polyfluoroalkyl Substances (PFAS) and Private Wells - MN Dept. of Health:
https://www.health.state.mn.us/communities/environment/water/wells/waterquality/pfas.html

PFAS and Home Treatment of Water - MN Dept. of Health:
https://www.health.state.mn.us/communities/environment/hazardous/topics/pfashometreat.html

Questions?

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Thank you!

MINNESOTA POLLUTION CONTROL AGENCY