New Feedlot General NPDES and SDS Permits





Welcome



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What's on tap

Changes to final permits in response to comments

- Nitrogen BMPs in vulnerable groundwater areas
- Visual inspections of land application sites

Other notable requirements in final permits

- Manure transfer
- Winter application
- Sampling of discharges

Implementation of permit requirements

Applications for coverage

Approximately 1,000 facilities are permitted

Feedlot general permits impact about 1,000 facilities in Minnesota

- NPDES National Pollutant Discharge Elimination System (federal permit)
 - Current general permit for roughly 800 sites expires Jan. 31, 2026
- SDS State Disposal System (state permit)
 - Current general permit for roughly 250 sites expires May 31, 2025
- Draft NPDES and SDS permits nearly identical
 - Concurrent public notice June 24 to Sept. 3, 2025
 - 183 timely comment letters

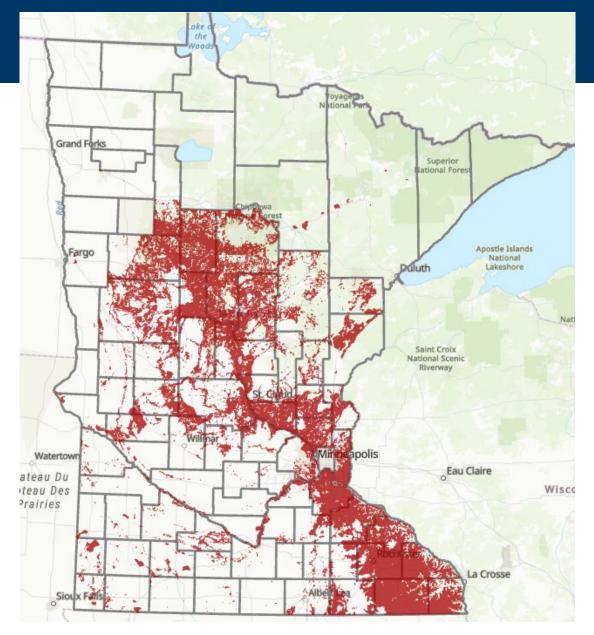
Significant permit changes in response to comments

Protecting groundwater in vulnerable areas

A vulnerable groundwater area is where nitrate can move easily through soil and into groundwater, contaminating drinking water sources.

Vulnerable groundwater area map

- MDA fall fertilizer restriction map
- Drinking Water Supply Management Areas with high vulnerability (MDH)



Nitrogen (N) BMPs in draft permits

June through Sept.

Cover crops or application to an actively growing crop

Vulnerable areas Oct. & Nov. (Starting 2028)

- 2 options
 - Follow June Sept. requirements
 - Soils 50° or less and perennials in the rotation

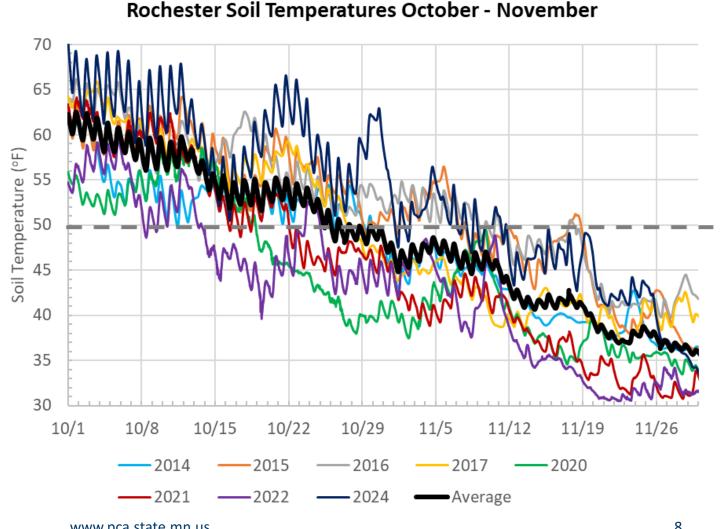
Non-vulnerable areas Oct. 1 - 14

- 4 options
 - Follow June Sept.
 requirements
 - Soils 50° or less
 - N stabilization product
 - Split application (max ½ N needs)

Changes to vulnerable groundwater area N BMPs

Oct. & Nov. split into 3 timeframes

- Oct. 1 14
 - Warm soils
- Oct. 15 31
 - Transition to cool soils
- Nov. 1 − 30
 - Cool soils



Oct. 1-14 N BMPs

June through Sept.

Cover crops or application to an actively growing crop

Vulnerable areas Oct. 1-14

- Follow June Sept. requirements
- Removed:
 - Option for soils 50° or less and perennials in the rotation
 - Delay until 2028

Non-Vulnerable areas Oct. 1–14

- 4 options
 - Follow June Sept requirements
 - <u>Nitrapyrin-based</u> N stabilization product
 - Soils 50° or less for 2 consecutive days
 - Split application (max ½ N needs)

2 consecutive days example:

- Soil temp reaches 50° anytime during Oct. 3 & 4
 - Requirement met for any day after Oct. 4, regardless of soil temp at application

Oct. 15-31 N BMPs

June through Sept.

Cover crops or application to an actively growing crop

Vulnerable areas Oct. 15 – 31 (Starting <u>2027</u> 2028)

- <u>3</u> options (previously only 2 options)
 - Follow June Sept. requirements
 - Soils have reached 50° or less for 2 consecutive days and perennials in the rotation
 - Soils have reached 50° or less 2 consecutive days and:
 - <u>Liquid manure nitrapyrin-based N stabilization product</u>
 - Solid manure split application (max ½ N needs)

Non-vulnerable areas

BMPs encouraged but not required

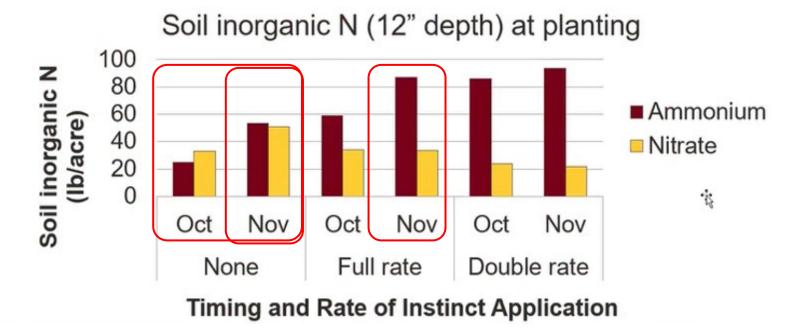
Combining N BMPs

Application timing and N stabilizer

U of M study (Vetsch) 2012 - 2014

- Later application is better
 - More N at planting
- Later application with stabilizer is better still
 - Lower conversion of ammonium to nitrate
 - Nitrate is the form that is mobile with water

Impact on soil inorganic nitrogen



Source: Slide - Melissa Wilson, University of Minnesota - Data: Vetsch et al 2017

Nov. 1-30 N BMPs

June through Sept.

Cover crops or application to an actively growing crop

Vulnerable areas Nov. 1 – 30 (Starting 2027 2028)

- <u>Liquid manure only</u>
- <u>3</u> options (previously only 2 options)
 - Follow June Sept. requirements
 - Perennials in the rotation (removed 50° soil temp requirement from this option)
 - Nitrapyrin-based N stabilization product

Non-vulnerable areas

BMPs encouraged but not required

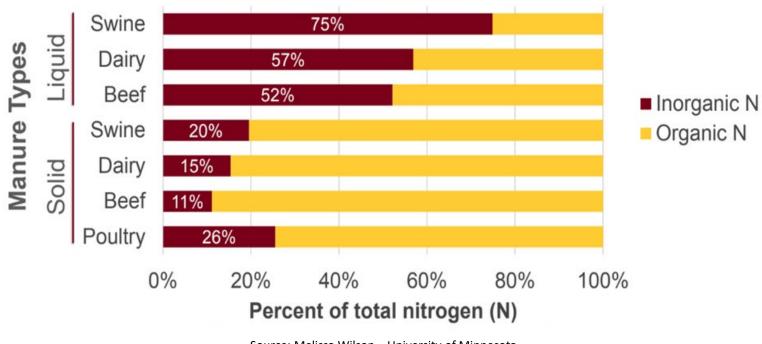
Nitrogen in manure

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Why only liquid manure?

- Liquid manure has higher percentage of inorganic N
 - More potential N conversion to nitrate
- Organic N conversion to nitrate takes time
 - Less risk of nitrate formation and loss

Manure nitrogen distribution



Source: Melissa Wilson – University of Minnesota

Final N BMP requirements (summary)

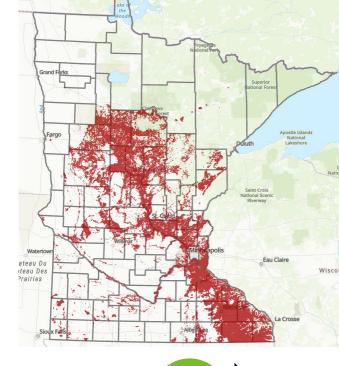
Non-vulnerable groundwater areas

June 1 – Sept. 30

- Cover crops
- Actively growing crops

Oct. 1 – Oct. 14

- Cover crops
- Actively growing crops
- 50°F soils (2 days)
- N stabilizer
- Split application



June

Oct.

Oct. 15

Starting 2027

Nov.

Starting 2027

Dec.

June 1 – Sept. 30

- Cover crops
- Actively growing crops

Oct. 1 – Oct. 14

- Cover crops
- Actively growing crops

Oct. 15 – Oct. 31

- Cover crops
- Actively growing crops
- 50°F soils (2 days) and perennials in rotation
- 50°F soils (2 days) and
 - Liquid w/ N stabilizer
 - Solid w/ split app

Nov. 1 – Nov. 30

Liquid manure only

- Cover crops
- Actively growing crops
- Perennials in rotation
- N stabilizer

Vulnerable groundwater areas

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Application site inspections

(vulnerable and non-vulnerable areas)

Visual inspections of land application fields for signs of discharge

Where:

 Down-gradient field edges, <u>tile intakes</u>, and sensitive features

When:

- At least once each day manure is applied
 - Replaced: At least one time during application
- At the end of application to the field
 - Replaced: At the end of each workday
- Within 24 hours of a ½ inch or greater rainfall that occurs within 14 days of application
 - Unless manure is worked into the soil



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Other notable requirements

Manure application in winter conditions

New for SDS permit – Existing in NPDES permit

- Winter conditions = frozen or snow-covered fields
 - No liquid manure application Dec. through March (except emergencies)
 - No solid manure application in March
 - Solid manure application allowed Dec. through Feb.
 - Conditions must not be favorable for runoff (see permit for specifics)
 - Not applied in vulnerable groundwater areas

Note: Dec. 1 – March 31 liquid and solid manure restrictions do not apply to fields that are not frozen or snow-covered so long as manure is injected or incorporated in 24 hours.

Transferred manure requirements

(no significant changes made to final permit language)

All manure generated must be land applied under the same requirements

- MMP must incorporate permit requirements
 - Nutrient Management Tool must be used for MMP
 - Manure recipients are required to follow MMP
- All manure is land applied under state rule and permit requirements
 - Nitrogen BMPs
 - Winter application restrictions
 - Land application site inspections
- Manure recipient provides complete land application record to feedlot



Sampling discharges to waters of the state

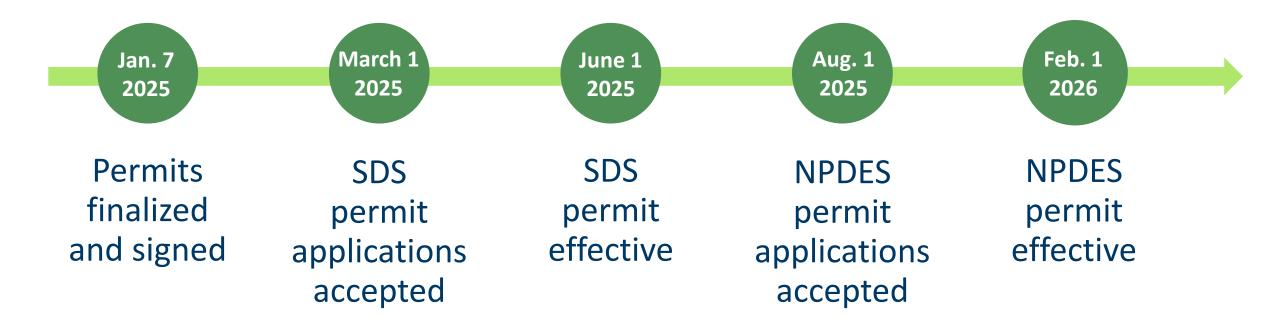
Monitoring of discharges to waters required

- Grab sample close to point of discharge
- Sample within 6 hours of discovery
 - Unless Permittee's actions have stopped the discharge
- Sampling may be delayed if...
 - Unsafe to sample
 - Representative sample cannot be obtained (widespread flooding events)
- Spills that do not reach waters will not be sampled



Implementation of permit requirements

Permit effective dates and applications



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Understanding the requirements

Updates to fact sheets

- Notable changes to the feedlot general permits www.pca.state.mn.us/sites/default/files/wq-f3-55a.pdf
- Applying manure from NPDES/SDS permitted feedlots www.pca.state.mn.us/sites/default/files/wq-f8-53.pdf
 - Graphic summarizing timing requirements
 - FAQ section with answers to common questions

How manure application timing affects NPDES and SDS permitted feedlots





June 1 - September 30

Nitrogen BMP required - Pick 1 of 2

- Cover crop, or other crop, planted prior to or within 14 days of application.
- · Application to actively growing crop.



October 15 - 31 (starting 2027)

Vulnerable groundwater area Nitrogen BMP required - Pick 1 of 3

- Follow June 1 September 30 BMPs.
- Soil temp 50 F or less for 2 consecutive days and perennial crop 2 out of 5 years.
- Soil temp 50 F or less for 2 consecutive davs and:
 - Liquid manure: use a nitrogen stabilizer (must be nitrapyrin-based).
- Solid manure: utilize split application (max of 1/2 crop N needs).

Non-vulnerable groundwater area

BMPs recommended but not required.



December 1 - February 29

When fields are frozen or snow-covered*

- No liquid application.
- Solid application allowed if:
- Not in a vulnerable groundwater area.
- 300 ft setback to waters/intakes.
- Tillage furrows allow some runoff containment (not full of snow/water).
- Slope is 6% or less (2% or less in Feb).
- Under 50% chance of 1/4+ inch rainfall within 24 hours after application (24 hours increases to 5 days in Feb).
- If 2+ inches of snow, temp under 40 F for at least 24 hours after application (24 hours increases to 5 days in Feb).

October 1 - 14



Vulnerable groundwater area

Nitrogen BMP required

Follow June 1 – September 30 BMPs. Note: Until 2026 NPDES permits may follow non-vulnerable groundwater area requirements

Non-vulnerable groundwater area

Nitrogen BMP required - Pick 1 of 4

- Soil temp 50 F or less for 2 consecutive days.
- Nitrogen stabilizer (nitrapyrin-based).
- Follow June 1 September 30 BMPs.
- Split application (max of ½ crop N needs).

November 1 − 30 (starting 2027)



Vulnerable groundwater area Nitrogen BMP required for liquid manure only - Pick 1 of 3

- Follow June 1 September 30 BMPs.
- Perennial crop 2 out of 5 years.
- Use nitrogen stabilizer (must be nitrapyrin-based).

Non-vulnerable groundwater area

BMPs recommended but not required.

March 1 - 31



When fields are frozen or snow-covered*

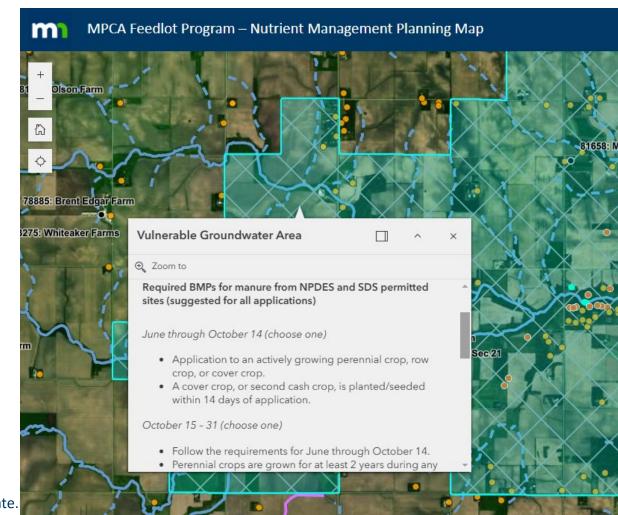
No liquid or solid manure application.

*Manure can be applied to fields that are not frozen or snow covered so long as manure is injected or incorporated in 24 hours.

New nutrient planning tools

- Nutrient Management Tool now live
 - Required format for MMPs
 - Manure transfer tracking form (required by permits)
 - Face-to-face training events in Feb (more info coming)
- Nutrient Management Planning Map
 - Vulnerable groundwater area map

www.pca.state.mn.us/business-with-us/land-application-of-manure



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Thank You

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https://www.pca.state.mn.us/feedlots

