

NRCS 590 Nutrient Management Standard Team

MEETING NOTES

Thursday, April 25, 2024 ▲ 9:00am – 2:30pm ▲

Juneau County Services Building, 200 S Hickory Street, Mauston, WI 53948 ▲ Room 209 ▲

Agenda-In-Brief:

- 9:00 Welcome (Kate, Team)
 - 9:05 Notes Review (Kate, Team)
 - 9:15 Nutrient Loss to Groundwater (Dan, Mike, Andrea, Kyle, Andrew)
Break as needed
 - 12:00 Lunch, provided
 - 12:30 Ephemeral Gully Erosion and Edge of Field Practices (Mike, Cody, Andrew, Travis)
Break as needed
 - 2:15 Meeting Review and Next Steps (Kate)
 - 2:30 End
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9:00 Welcome (Kate, Team)
Goal: Attendance and review the meeting objective.

Attendance: Kate Brunner, Mike Stanek, Daniel Smith, Kyle Much, Sara Walling, Morgan Kepler, Aaron O'Rourke, Cody Calkins, Andrew Craig, Travis Engels, Andrea Topper, Matt Ruark

Absent: Carl Hahn, Eric Hurley

Guests: None

Mike has been attending recent DATCP partner meetings to provide an update that 590 updates are underway. He's not specifically soliciting input but has heard questions about setbacks and P buildup in soil (high to excessively high, and when it becomes restricted). DNR well compensation areas not available to public but is available to the county staff upon request—maybe there is a better way to discuss in the standard (nitrate-related well compensation vs. other contaminants). Some critique is SnapPlus specific. Mike will keep these comments in mind as team works through further edits.

Mike has also started talking with Amaya Atucha, a cranberry specialist at UW, to go through the cranberry Tech Note. If team would like to provide input related to this Tech Note, they should reach out to Mike.

9:05 Notes Review (Kate, Team)
Goal: Review Brief Action Item reports and approve 3/19/24 meeting notes.

Draft notes from the 3/19 meeting were emailed to the team. Some open action items—a few topics will be discussed in-meeting today and some Kate will continue to track as longer term items. One action item update:

- What would it look like if there were a more restrictive PI or a soluble p restriction?
 - Mike talked to Laura and she would like to wait until SnapPlus v3 is more complete and they can input so more functional. Mike will revisit this when v3 is ready.
 - SnapPlus v3 will be web-based and allow more easy data sharing.
- As a related topic, DNR has TMDL modeling that evaluated fertilizer application and P specific to a watershed. Rather than create a new P Index to apply across the state, standard could piggy back on the TMDL modelling for more specific P related criteria. **Andrew** will share this information with the Team via email, and could also present at a later meeting on options to use this with the standard.

Kate will finalize March meeting notes and post online.

9:15 Nutrient Loss to Groundwater (Team)

Goal: Discuss team comments to the proposed language on Nutrient Loss to Groundwater. Review recommended changes to Criteria to Minimize Entry of Nutrients to GW, and incorporate team input.

Draft text for this topic was sent to team after the last meeting and again with the agenda for team to review in advance. Team reviews on-screen together making some edits.

- Revised language is simpler than before, while keeping spreading rates.
- Vulnerable soils defined by Nitrogen Restriction Map Viewer,
 - Added bullets re: areas with nitrate contamination in groundwater and wellhead protection areas with nitrate >5mg/L. This comes from the nitrogen target areas of WI that was developed out of the TAC for DNR's proposed nitrate rule (see details [here](#)). Not prohibiting spreading but enhanced restrictions. Additional 540,000 acres would be subject to these changes.
 - "Proposed Targeted Area" is cropland impacted by the proposed nitrate rule.
 - This map is a snapshot in time (2021?) and not being updated. Counties are sampling and have more specific data not represented by this tool.
 - Team wants to understand the differentiation of areas in this mapping tool. This is provided in [DNR TAC slides](#) for background on screening and how the thresholds were developed in the mapping tool. Kate will share this link with the Team.
 - Map differs from Kevin Masarik's tool. Standard could also link to the UWSP data set (which goes back further in time) and the soil survey map for PRW soils so all resources listed together.
 - Team will revisit this list and resources after understanding implications.
- W soils based on soil series and surface texture, mapped if 15% or more of map unit is W.
 - Team discussed changing 12" to apparent water table to 24" so consistent with CAFO requirements. The 12" would be difficult for producers to implement and plan around as it varies with different storms and time of year. Team would like to understand impact to acreage with this kind of change. **Andrea** will reach out to Jonathan at DATCP to develop soils query of CAFO W soils compared with 590 W layer (**Cody** has maps from previous 590 team and can also create updated map).

- Team will evaluate this information and look for the statewide implications (between mtgs or at next mtg).
 - Tile lines add complication to this water table depth. Team discusses how to include tiling in the standard. DNR CAFO program looks at tile lines.
 - Agencies are discussing tile line guidelines with WI Land+Water from surface water perspective. Kate will loop in Aaron and Andrea to the WI Land+Water tiling subcommittee group so they are aware of their agency reps involved in the conversation.
 - Tiling will be discussed again separately, and may just be added to Tech Note.
- NRCS is switching over from P to Ksat for permeability, though not sure on timing. Ksat is more specific and accurate for this purpose.
 - More homework on soil – which P soils in current list would still be P based on Ksat (% and extent of acreage). Quick spot checks come up as “high” Ksat. NRCS soil scientist could help with the broader evaluation, but they don’t have Ksats for all the soils yet.
- Previous tech note lists all of the soil series by name and correlates to PRW. This is functionally part of Snap Maps and table isn’t referenced by users. This list will be removed from future Tech Note.
- 50’ of any well changed to 100’ as in CAFOs. This is just for manure; can still mechanically apply fertilizer.
- Took out irrigation well setback.
- Team discussed separating out type of manure (solid vs liquid) but did NOT want to make this differentiation.
- Grazing is also considered in manure application.
- Team discusses adding specificity related to AMS, MAP or DAP but the newer proposed language is already more restrictive on when to apply in general.
- New: using soil temp AND forecasted air temp rather than arbitrary date. This will be more site-specific.
- What is “liquid”? Pumpable manure could be up to 20% DM in some situations—should it be liquid because it’s pumpable?
 - Intent in using %DM is related to leachability and not pumpability.
 - Percent dry matter also flawed because there’s a bias in sampling and margin of error in lab.
 - 16-32% DM in CPS 318; 32% is stackable. Team prefers to use the 4% and 32% DM cutoffs for consistency.
 - Standard will not use the terms “liquid” and “solid” and instead will use only the % DM?
- For <4% DM – application rate of NR 214 has 10,000 gal/acre for process wastewater. May not be directly comparable but good starting point.
- Commercial fertilizer
 - This subgroup proposed to add in testing of irrigation water and crediting the N concentration toward crop recs. This reflects 2019 national language which includes irrigation water as a source of nutrients.
 - Irrigation water concentrations may already be part of recommendations, although not sampled specifically. Hancock has high N, and it was the “background” when the A2809 recommendations were made. UW would need to do more research to evaluate the A2809 recommendations and application rates to also discount the nutrients present in irrigation water.

- Nitrogen use efficiency for potatoes can be quite low compared to corn, and there is a lot of loss in sands. Matt could provide some numbers on Hancock irrigation water results but building this data into the A2809 fertilizer recommendations is not as simple.
- If sampling included in the standard, the Tech Note will need clarification on testing procedures (frequency, methodology, labs, etc.).
- Keep in fertigation rates per A2809.
- National language includes considering irrigation as a source of nutrients so it may need some further discussion. Team decides to remove the irrigation water sampling language for now.
- Matt will look into this more and see if he can identify in the data some threshold for when the crediting makes sense, for both potatoes and non-potatoes. This will take some time.
- Team discusses adding a specific reference to NR151.075 related to manure application in Silurian dolomite. This will be referenced early on in the standard but since there is specific manure spreading language in NR151 components will also be part of the Tech Note.

Next steps for this section of the standard:

- Breakout group (Dan, Andrea, Andrew, Kyle, Mike) will revise language further. Kate will send them the file from meeting today.
- Details to address
 - Confirm tool(s) to reference for the high risk categories
 - Ksat as part of P soil definition
 - 12 in vs 24 inches to apparent water table
 - Number of days forecast <50
 - Table summarizing conditions for application when soil<50

Break as needed

12:00 Lunch, provided

12:30 Ephemeral Gully Erosion and Edge of Field Practices (Mike, Travis)

Goal: Review recommendations from breakout group work on changes to the current standard language related to ephemeral erosion and edge of field practices.

Breakout group met to review and revise language on ephemeral gully control. The notes from this group were sent to the Team along with the meeting agenda and is shown on screen and reviewed with the team.

- Added citations to more specific complementary practices.
- Ephemeral is concentrated flow in the field caused by tillage. The proposed criteria is to reduce sediment loss.
- Group proposes two mitigating practices vs one previously. Team decides to adjust language so mitigation is to establish perennial vegetation and ONE mitigating practice from the list.
- O&M currently indicates to correct gullies; Team suggests change to indicate inspection for problems like gullies.

Team acknowledges the problem of man-made drainage that some farmers create for temporary drainage. These should not be encouraged, but are also not rare. When discovered these should be corrected. Temporary drainage will be included in concentration flow channel section.

Break as needed**2:15 Meeting Review (Kate)**

Goal: Review Action Items and prepare for the next meeting.

Next meeting is May 23, again at the Juneau Co. building in Mauston. Topics for the agenda will include:

1. Nutrient Loss to Groundwater – Breakout group will present a little more work on criteria for surface water protection, including:
 - a. Confirm tool(s) to reference for the high risk categories
 - b. Ksat as part of P soil definition
 - c. 12 in vs 24 inches to apparent water table
 - d. Number of days forecast <50
 - e. Table summarizing conditions for application when soil<50
2. Setbacks – Before the meeting, a breakout group of **Mike, Morgan and Aaron** will look at the setbacks and present at the next team meeting recommendations for revisions. They will consider mandatory tillage, SWQMA, intermittent streams, confirm sources of current setbacks, and setbacks used in other states. They may ask Laura Ward Good for insight.
3. Winter spreading – **Andrew** has table of 590 vs CAFO winter spreading to share. **Team** should review the summary table and current standard language to prepare for starting the winter spreading discussion the next meeting.

ACTION ITEMS

- **Andrew** will share the TMDL modeling information with the Team via email, and could also present at a later meeting on options to use this with the standard.
- **Kate** will share link of Nitrogen Map tool sources and decision-making factors: see [DNR TAC slides](#).
- **Andrea** will reach out to a colleague at DATCP to develop soils query of CAFO W soils compared with 590 W layer **Cody** has maps from previous 590 team and can also create updated map. Team will evaluate this information and look for the statewide implications for changing from 12" to 24" to apparent water table.
- Longer term: **Matt** will look into the data for N and irrigation more and see if he can identify some threshold for when the crediting makes sense, for both potatoes and non-potatoes.
- **Dan, Andrea, Andrew, Kyle and Mike** will make further edits to Nutrients to GW language.
- Prep for next meeting:
 - **Mike, Morgan and Aaron** will look at the setbacks and present at the next team meeting recommendations for revisions. They will consider mandatory tillage, SWQMA, intermittent streams, confirm sources of current setbacks, and setbacks used in other states.

- **Andrew** will share a table of 590 vs CAFO winter spreading. Team will review this table and current standard language to prepare for starting the winter spreading discussion the next meeting
- **Kate** will publish March notes
- **Kate and Mike** will develop agenda for next meeting and send it to team along with any reading materials one week prior.

2:30 End