



Standards Oversight Council (SOC)

Developing effective technical standards that protect Wisconsin's natural resources

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NRCS 590 Nutrient Management Standard Team

MEETING NOTES

Thursday, August 22, 2024 ▲ 9:30am – 3:00pm ▲

Portage Public Library, 253 W. Edgewater St., Portage, WI 53901 ▲ Teen Community Room ▲

Agenda-In-Brief:

- 9:30 Welcome (Kate, Team)
- 9:35 Notes Review (Team)
 - a. “frozen” definition (Aaron)
 - b. 12 vs 24 inches to water table – homework by Kate, Matt, Travis, Andrew, Mike
- 10:45 *Break as needed*
- 11:00 P Index Rating (Mike)
- 12:00 *Lunch, provided*
- 12:30 Winter Spreading (Mike)
- Break as needed*
- 2:45 Meeting Review (Kate)
- 3:00 *End*

9:30 Welcome (Kate, Team)

Goal: Attendance and review the meeting objective.

Attendance: Kate Brunner, Eric Hurley, Mike Stanek, Aaron O’Rourke, Andrew Craig, Cody Calkins, Travis Engels, Morgan Kepler, Kyle Much, Carl Hahn, Sara Walling
Dan Smith (arrives at 12:00)

Absent: Andrea Topper, Matt Ruark

Guests: No

9:35 Notes Review (Team)

Goal: Approve 7/25/24 meeting notes and Action Item reports.

Some action items are being tracked as longer-term items, and others reported on and discussed:

- a. “frozen” definition (Aaron)

The current 590 standard doesn’t specifically define frozen but in practice has been when nutrients are unable to have “Effective Incorporation - Mixing with topsoil or residue, or

subsurface placement of nutrients by such means as injector, disc, sweep, mold-board plow, chisel plow, or other tillage/infiltration methods. Nutrients will not run off the field or drain to subsurface tiles during application.” Team thought this needed some clarity.

1. NR 243:

- a. “Frozen ground” means soil that is frozen anywhere between the first ½" and 8" of soil as measured from the ground surface.
Note: Under the definition of frozen ground, soil that is that frozen to a depth of ½" or less as measured from the ground surface is not considered frozen ground.
- b. “Incorporation” means mixing the manure or process wastewater with surface soil so that at least 80% of applied manure or process wastewater is covered with soil and the application rate is controlled to ensure that applied material stays in place and does not run off. Incorporation includes standard agricultural practices such as tillage or other practices that are the equivalent to providing 80% soil coverage.
- c. “Injection” means the placement of liquid manure or process wastewater 4 to 12 inches below the soil surface in the crop root zone using equipment specifically designed for that purpose and where the applied material is retained by the soil and does not concentrate or pool below the soil surface.

2. For LDMI, NRCS recommends 3-4” depth.
3. Team agreed to edit the current language in the standard and affiliated definition to go beyond just “effective Incorporation” also incorporate language from NR243 definitions for “frozen”, “incorporation” and “injection”. Guidance doc would provide details and possibly examples.
4. Similarly, snow covered isn’t defined. The WI Rule starts with 1” snow. This will be defined in guidance and keep snow definition and depth out of standard.

b. 12 vs 24 inches to water table – homework by Kate, Matt, Travis, Andrew, Mike

Homework consisted of:

- **Kate** will look up previous standard team notes and see why it was 12 inches to water table last time. UPDATES:
 - 10/31/13 notes: “W soils with 12 inches to water table.... R soils you can apply in the spring. W soils you can’t really apply in the spring. W soils are inherently different than R soils. And W soils are totally different – there are sandy w soils and clay, loam, etc. Maybe we can split with texture or yield potential at least within w soils? If w soils are sandy, then they follow the P soils recommendations. Is there other classifications we can use for the w soils, and not use NRCS NASA [sic: NASIS?] system?”.
 - 12/19/13 notes: “For consistency, we are using the NRCS soil classifications for W soils, even if some soils are clearly W soils but not listed as such. The team can deliver this concern to NRCS in hopes of more comprehensive updates. Planners can always provide more input.”
- **Matt** will ask Becky Larson related to her research, which may have been the basis of the 12-inch separation used in the 2015 standard. Matt not present in meeting;

however, the Team has gathered enough background through other resources so information no longer needed.

- **Travis** will summarize and share research docs on manure spreading and 24-inch separation. Travis gathered information from a variety of sources related to pathogens, settling on work by Kewaunee Co GW Task Force and 3 publications¹
 - Borchart is out of the country for research project and not available.
 - Research papers were based on septic systems. He checked with Kevin Masarik who confirmed septage wastewater would be similar to ag waste in soil microbiology. Ag wouldn't be continual discharge like septic and root zones in ag fields deeper than lawns. In years with less rain, even corn can reach >3'.
 - Generally 24" to 5" was the recommended separation distance to water table in the information Travis reviewed.
- **Andrew** will ask DNR drinking and groundwater program for insight into 12 vs 24 inches to water table.
 - He was unable to connect with them on this issue due to various vacations.
 - DNR codes for biosolids and industrial waste is based on similar research to what Travis showed.
 - Team has gathered enough background through other resources so information from other DNR programs no longer needed.
- **Mike** will get in touch with Kevin Masarik for his work on this with nitrates (and possibly pathogens). Travis got input from Kevin in his investigations.
- Team discusses whether to keep 12" to water table or extending to 24" (to match CAFO rule). NR243 is full prohibition whereas 590 has restriction to a specific rate.
 - 24" may not be tested by hand but a drill would.
 - SnapPlus has W soil layer that is seasonal high water table (as a CAFO W soil layer) so no additional work on mapping/lookup.
 - Team again reviews Cody's work presented at last Team meeting – a map and county by county acreage impact of 12 vs 24 inches to water. Actual impact acreage would be less since this cropland acres is not necessarily all the acres being spread on and some of these are already controlled by CAFO operator.
- Should the new standard switch 24" to water table?
 - Team agrees Yes
 - The depth is verified at the time of spreading so ability to spread could change day to day.
 - Tiles may or may not impact this with depth to water verification.
 - Guidance doc would clarify how to verify depth.
- Should the new standard prohibit spreading on these soils with water table <24"?
 - The NR151 rule for Silurian bedrock separates out liquid restrictions and the group looking at nitrate rule was leaning toward the same.
 - Team wants to not stop entirely but only prohibit for liquid manure and process wastewater. Solid manure spreading would still be allowed.

¹ MN Board of Water and Soil Resources: Pocket Guide to Field Indicators of Hydric Soils and Wetland Hydrology in MN.

Adapted from: NRCS Field Indicators of Hydric Soils in the U.S. (Version 8.2, 2018) and Regional Supplements to the Corps of Engineers Wetland Delineation Manual (2.0 Versions).

Vertical Separation A Review of Available Scientific Literature and Listing From Fifteen Other States (Selden Hall), Office of Environmental Health and Safety, Washington State Department of Health, Oct 1990.

There were no questions raised on the July 25 meeting notes, so Kate will finalize and post online.

10:45 Break**11:00 P Index Rating (Mike)**

Goal: Develop P Index rating categories incorporating [national standard](#) language of low, medium and high risk.

The national standard requires a P risk assessment ranking with low, medium and high risk. Team discusses how to establish categories of risk. ion of risk related to P Index:

- Risk assessment wouldn't be based on in-field considerations, more on setting. The actual planning practices (like crops, rotations, tillage, etc.) would be selected to fit the setting.
- Is this based on Soil test P vs P Index?
 - Both are relevant and agronomists often use both in planning rotational balance.
 - P index usage alone may still be raising the base P in the field. Some producers may be using only P Index but not good practice. They could also be building their soil test P until it's 200 ppm before taking it out of the plan.
 - Manure may be applied to create more storage in the pit and not crop need.
- P Index
 - Right now, cost sharing is using a P Index of 6, but 6 is not going to achieve water quality goals in TMDL areas.
 - NR 151 says a P Index of 6: "Croplands, pastures, and winter grazing areas shall average a phosphorus index of 6 or less over the accounting period and may not exceed a phosphorus index of 12 in any individual year within the accounting period."
 - Use of P Index alone would be outdated information later on if rotation is planned for several years. Field reality changes.
- Soil test P
 - Rather than a concentration, standard should reference the terms used in Table 7.1 in A2809 (e.g. Optimum, High, Excessively High). A2809 is being updated to a living, flexible website so Table number won't be the same and there won't be a specific publication date.
- DNR has 4 watersheds with P TMDLs. Benchmark for TMDL is 1 lb per acre per year based on predominant soil in a field (to be more representative; not dominant critical). They've looked at specific fields, anywhere from 2-yr rotation to 7 or 8-year rotations.
- Team discusses option to tie P to the certain watersheds that have TMDLs for P, with additional restrictions applicable in those areas. Since TMDLs aren't in law and cost sharing can't go past P Index of 6, this addition is not considered further.
- Team likes the idea of setting a maximum number of years for the NMP crop sequence.
- P risk language will need some exclusions, like in potato fields, cranberry fields, etc.
- Iowa 590 adds a higher risk category. Team discusses but doesn't want to add extra layer of complication but would need to discuss more.
- Standard will have hybrid of P Index and soil test P, max. 4 years in rotation, and still meet T, with exceptions for certain veg crops. A subgroup (Mike, Kyle, Aaron, Andrew, Eric) will further develop clarifying language based on the following national 590 language adjusted together on-screen. Aaron has a rotational guidance document he's drafted that may be of use to this language development. Team thinks Andrea would be helpful on this topic; she will be invited to participate as well. The numbers and language may be adjusted as the

subteam discusses the implications of how this will look in practice, considering NMPs statewide.

- LOW risk.—Manure can be applied at rates to supply P at greater than crop requirement not to exceed the N requirement for the succeeding crop.
P Index ≤ 1.0 [*“and” or “or”? clarify how to use P Index in combination with soil test*]
Soil test “Optimum” in A2809 [*<25 ppm is agr. soil test max for many crops; cite A2809 rather than concentration so when A2809 changes, the standard does as well*]
- MODERATE risk.—Manure can be applied at rates not to exceed crop P removal rate or the soil test P recommended rate for the planned crops in rotation.
P Index >1.0 to ≤ 4.0 or
Soil test “High” in A2809
- HIGH risk.—~~Manure can be applied at rates not to exceed crop P removal rate if the following requirements are met:~~ No manure can be applied without implementing practices that will lower the P Index score to moderate or lower.
P Index > 4.0 to 6.0 or
Soil test “Excessively high” in A2809
- May also need a new VERY HIGH Risk where no manure can be applied:
P Index >6.0 or
Soil test $>200\text{ppm}$

12:00 Lunch, provided

12:30 Winter Spreading (Mike)

Goal: Confirm updated language based on breakout group and previous meeting discussions.

At the last couple meetings, the Team has seen recommendations from a subteam and talked through some updates to the standard. Some topics weren’t yet resolved, and a few people weren’t present at the last meeting so the topic revisited to get a broader consensus on updated winter spreading language.

- Team previously discussed that SWQMA setbacks include conduits to nav waterway and tile inlets.
- Discovery Farms winter research showed losses of P still seen 1 week after runoff event, and February and March are high risk runoff periods.
- The current max application rates were based best judgement and machine ability, but it’s not achievable for all, especially on slopes. **Dan** will reach out to Driftless Area manure spreaders to understand what’s feasible on their slopes.
- Team discusses option to phase out winter spreading.
 - To date, national NRCS has been willing to allow winter spreading with strategies, but it is a variance for WI and national may not always. Team spot checks and it appears that most adjacent states have adopted national language prohibiting winter spreading. PA allows with an extra risk evaluation.
 - This wouldn’t be feasible for smaller farmers who don’t have storage (or stacking or composting).
 - Team thinks there would need to be greater cost sharing for producers to achieve this. There has been a problem with prioritization of waste storage applications, and some wait years. Cost share for manure storage is 6-9 month capacity and the

- federal cost cap isn't adequate for the size. Other states have restricted winter spreading without cost share increases; producers know they need options.
- Team has already included tightening restrictions in the standard updates, including winter spreading changes.
- % of the field could be adjusted depending on definition of "field" and the overall acreage that's >6%. FSA maps may differ from NRCS and Snap Plus. In this situation the restriction applies on the portion of the field that is >6%, the rest isn't restricted.
- Team still needs to review/amend the current winter strategies list, what's applicable for solid only.

Break as needed**2:45 Meeting Review (Kate)**

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

Team reviews the list of key issues generated by the Team in an early meeting. Most of the topics have been addressed or are smaller editorial type edits that do not need team collaboration. Manure irrigation remains for Team discussion. Team also reviewed the remaining timeline that was emailed to the Team.

Next meeting is scheduled for September 26 from 9:00-2:30. It will be at NRCS's new space at the Stevens Point USDA Rural Development Office.

Both Nov. and Dec. meetings fall on holidays so need to be rescheduled. Dec. 3 confirmed for rescheduled meeting. Kate will adjust calendar invitations.

There aren't many team meetings left and in a few months the Team will be focusing on draft written text. Let Kate know of any absences so she can confirm quorum. At next meeting we will discuss adjusting the quorum since Andrea will soon be on maternity leave. [In Aug 2023, Team decided that with 12 team members: "If 7 or more team members attend a scheduled meeting, proceed with agenda."]

Although not on team calendars (yet), additional meetings, including shorter, focused remote meeting check ins may be needed. Kate and Mike will monitor this and Team can also help identify areas where progress may be made.

Possible topics for the agenda for September or beyond include:

1. Review/amend the current winter strategies list, specific to solid manure only. NRCS can adjust this outside of meeting time.
2. Manure Irrigation – Kewaunee Co uses this, includes NRCS std for low pressure drop nozzle.
3. Hear back from breakout subteam on the revised risk assessment language started today.

ACTION ITEMS

- **Mike** will convene a subteam (Mike, Kyle, Aaron, Andrew, Eric) to develop and refine risk assessment language that was started in-meeting today. Andrea will be invited to participate as well. They will meet in the next couple weeks and present recommended language at the 9/26 meeting.

- **Dan** will reach out to a couple Driftless Area manure spreaders to understand what's feasible for spreading rates on their slopes.
- **Kate** will draft notes from today's meeting for Team review.
- **Kate** will publish final June meeting notes.
- **Kate** and **Mike** will develop agenda for next meeting and send it to team along with any reading materials one week prior.

3:00 End