



Standards Oversight Council (SOC)

Supporting Technical Standards for Urban and Rural Soil and Water Conservation

702 E. Johnson Street, Madison, Wisconsin 53703
(608) 441-2677 || Fax (608) 441-2676 || soc@wlwca.org || socwisconsin.org

590 Nutrient Management Standard revision team

DRAFT Meeting Notes

Tuesday, January 21, 2014 || 9:00am – 3:00pm || Hancock Agriculture Research Station

Attendees: Andrew, Matt, Terry, Pat, Tony, Laura, Sue, Sara, Todd, John, Carrie, Gini, Kevin, Nikki

Welcome/Updates

- ATCP 50 has been signed by Ben Brancel, so will go into effect on May 1st. Sara will bring guidance documents and final ATCP 50 to the next meeting.

Nutrient Loss through Tile Drainage

The draft proposal and language for addressing national standard requirements for minimizing nutrient flow through tile drainage was presented.

Tiles are being installed on many types of soils, not just organic soils or poorly drained soils. Not only low lying wet areas are drained, upland field positions are also being tiled mainly for warming up fields early in the year. Some team members spoke with participants at a tile booth at last week's Crop Mgmt Conference, and they confirmed a gradual trend in increased business. The infrastructure isn't available for all farmers to install tile, and some folks just don't have access to it. Yield monitors show farmers the yield losses that can occur on the wet spots of fields and what that is costing the farmers. More producers are learning about the benefits, and with recent higher crop prices they have a little more money to make the investment.

- Do we have any statistics for the amount of acreage that is tiled?
- The soils with high swell-shrink potential could be problematic. Can we identify these soils?
- EPA does not consider tile outlets a point source based on a California law suit last summer.
- Two points to discuss – how do you define what's out there? How do you define the risk? Consider the proximity of tile, nature of manure, and how to capture macropores.

The team discussed that the tile language in the current standard is basically reactive (what to do if there is a spill) versus providing proactive guidance that prevents a spill. In general the team is considering the inclusion of the following points in the standard possibly adding to Criteria A.3, Plans & Specs or the Tech Note.

- Requiring a general inventory/documentation of all tile lines and outlets with guidance provided in the Tech Note. The team understands the difficulty in locating all tile lines. NRCS has some maps, and counties and farmers have some knowledge of tile locations.
- Maintaining the outlets is a priority. A lot would be accomplished if farmers knew the location of all of their outlets and maintained them. Monitoring and maintaining the tile outlets before, during, and after (within two weeks?) application will be included. The team will consider what level of detail is needed for monitoring and record keeping.

- Application rates were discussed, and whether the rate should be lower if manure is applied where there is high potential for nitrate leaching. Tables were presented, but it was noted that we need to keep rates consistent throughout the standard. Table 2 will be reviewed in the future and potentially address nitrate leaching concerns. It was noted that A2809 states that if drainage is the limiting factor for yield, then farmers can move up to a higher yield class if they install tile.
- Incorporating manure after application is a successful method for reducing nitrate loss. What options do the no-till farmers have?
- The team will consider fall commercial application rates near tile as well.
- The team is considering which conservation practices to include as options in mitigating nitrate leaching. The conditions used for SQWMAs may also be appropriate for tile, Criteria A.3.b.
- The team will look at UW Discovery Farms data and publications from Univ. of Minnesota Extension, which has also done a lot of work on tile drainage.

Soil Temperature Map

Carrie presented an initial draft of a map that shows when areas across the state have reached a maximum or minimum daily air temperature of <40F for 4 consecutive days. Data shows that having 4 consecutive days of 40F air temperature is a good indicator of when the soil temperature will decrease to 50F. Soil temperature data is inconsistent across the state, and therefore they are using the above indicator.

Update from Karst working group

This group continued discussion of management options for mitigating risk near karst features. They compared 590 and NR 243 restrictions to various northeastern county proposals for additional restrictions through local ordinances or rule revisions. The draft comparison table was available for the full team to see which recommendations were not currently in the 590 standard. Some counties do feel like 20" to bedrock does not give enough protection.

One proposal is to invoke the "R" restrictions when soil depth is 60" (5 ft) or less. The group looked at maps that show a 5' to bedrock layer not the 50' to bedrock. The 20" to bedrock is currently used because that's what data was available. The 5' layer is fairly arbitrary, but 5' and shallower may be a reasonable indicator of high risk. This depth is more accurate for identifying risk than 20" but shallow enough for farmers to field verify. We could use water quality data and use very specific areas that are shown to leach. Some counties have much more detailed information, such as with LiDAR data, and if the counties have this information it should be used.

It may make sense to work just with the eastern edge of the state, on the Silurian dolomite aquifer. This community has had these discussions and understands this associated risk with these land features. This community doesn't have an option to drill deeper to another aquifer, so this is their single source of potable water. However, the standard needs to be fair across the state.

WI Department of Agriculture, Trade and Consumer Protection • WI Department of Natural Resources •
Natural Resources Conservation Service • University of WI Extension • WI Land & Water Conservation Association

DATCP Richard Castelnuovo (608) 224-4608	WDNR Gretchen Wheat & Mary Anne Lowndes (608) 264-6273	NRCS Pat Murphy & John Ramsden (608) 662-4422	UWEX Ken Genskow (608) 262-8756	WLWCA Reps Perry Lindquist (262) 548-7867 & Bruce Olson (608) 785-9867	WLWCA Jim VandenBrook (608) 441-2677
--	---	---	--	---	--

The intent of the NE Karst Report was reviewed. In the simplest form, the NE Wisconsin Karst Report recommends the area of <50' of unconsolidated soil over Silurian Dolomite to be treated like an "R" soil with restrictions. Since the Karst Report was released, those counties have been much more successful at having adequate winter spreading plans that manage risk. Since the implementation of winter spreading plans, very limited spills have occurred. We may be able to substantially reduce some of the acute problems with nitrate leaching through these features if sound winter spreading plans are implemented. This could address the majority of the risk during very specific times during the winter. It might take us a step forward on addressing the acute risk in winter, and we still need options for addressing chronic risk areas. If we limit winter spreading, does this mean that more commercial N will be applied? If so, we haven't accomplished anything.

Acute vs. Chronic risk. Chronic groundwater quality is from fissures and cracks. When bacteria are found in the water, then it could be evidence of an acute event. When N is found in the water, it is often from something that occurs on a broader, more continuous scale. Normal groundwater infiltration is consistent and nitrate levels are fairly consistent, signifying a need to address the chronic issues. Chronic N occurs with ongoing constant loading, and it's unsure how to address this risk.

Door, Brown, Calumet and Kewaunee counties rely on the text of the 590 standard for the framework of what happens with nutrient management by the LCD. They encourage operators to be more careful within groundwater concern areas, but do not attempt to enforce anything beyond the current 590 standard. CAFO restrictions are more stringent and counties rely on DNR enforcement for those. Many counties wish there were more protections within the 590 standard. That would be easier to implement than justifying and passing local regulations. Door County requested stronger, clearer language on spreading on saturated soil. Could we revise the language in Criteria A.2.b.4 to allow counties to 'locally identify features' as part of groundwater restrictions. The current standard calls for those 'locally identified priorities' to be in a signed "conservation plan". However, much conservation and nutrient planning happens without "conservation plans". It is nice but it is mostly an obsolete technique for accomplishing progress with farms on conservation. If a local county identifies such a zone and includes it in a "long-range plan" or land and water plan for a department, maybe this could be used for 'locally identified features". Those plans usually go through a public hearing process and are reviewed and approved by the land and water conservation board. Can NRCS give flexibility within the standard for that?

Action Items & Questions to be addressed

- Gini will post map that Kevin produced.
- Compare maps that overlay current 590 N restrictions and 5' to bedrock. Kevin will send shape files to DATCP for map development.
- Small karst group will have conference call after map is created.
- Consider proposal for strengthening language on prohibiting spreading on saturated soils.
- Consider options for using 'locally identified priorities' as methods for individual counties to incorporate their sensitive features into the 590 protections.

WI Department of Agriculture, Trade and Consumer Protection • WI Department of Natural Resources •
Natural Resources Conservation Service • University of WI Extension • WI Land & Water Conservation Association

DATCP Richard Castelnuovo (608) 224-4608	WDNR Gretchen Wheat & Mary Anne Lowndes (608) 264-6273	NRCS Pat Murphy & John Ramsden (608) 662-4422	UWEX Ken Genskow (608) 262-8756	WLWCA Reps Perry Lindquist (262) 548-7867 & Bruce Olson (608) 785-9867	WLWCA Jim VandenBrook (608) 441-2677
--	---	---	--	---	--

- Did we agree to recommend the 100' no application zone around direct conduits and wells? Should this be in all cases or just the 50' NE WI soil over Silurian Dolomite area?
- What about incorporation? The current 590 requires incorporation within a certain area. Again, what do our no-till farmers do? One option could be incorporation with residue. Include a list of options in Criteria A.2.?

Other Breakout Group Work

The team separated into smaller groups to determine the next steps are for advancing the work on specific technical issues.

- **Winter Spreading Risk Assessment Update** (Matt, Pat, Andrew, Joe, John)
 - Group to find time to meet with Laura Ward Good in early February to ask questions about PI as it relates to winter spreading risk assessment.
- **Karst Group** (Kevin, Laura, Todd, Tony)
 - Kevin to send shape file of less than 5' to Silurian bedrock to DATCP for them to send to Lisa Morrison.
 - Group to review the prohibition or restrictions as they relate to the more acute concerns.
 - Tony will write recommendations for restrictions of the concern soils into the 590 standard criteria sections 1,2 or 3.
 - Schedule a conference call to review map overlapping new files with all of 590 restriction maps and recommendations for restrictions.
- **N Mgmt Group** (Carrie, Sue, Sara, Nikki, Terry)

Need/To-do's:

1. Definition of Community Well (Laura Chern/Kevin Masarik)
2. Definition of Nitrification inhibitor (Carrie)
3. N inhibitor references for Tech Note(Carrie)
4. Slow and controlled release fertilizer definition and references for Tech note(Carrie)
5. Change "All N restricted soils, except W soils" to "P and R soils" – make consistent throughout (Sue)
6. Review current draft of N management standard language and look for inconsistencies like the one in #5 above. Also look for ways we can reduce text if identical management requirements exist between/among sections. (All)
7. Nikki was going to see if a table to include, in addition to the text, could be created that would help.

Questions to answer:

1. Make sure entire team is ok with suboptions in b. (delay/split, or N inhibitor, or slow release fertilizer) Do we want to make everyone do split and/or delay and then choose one of the slow release or N inhibition options?
2. Identify "the Date" (move Sept 15 back to what? Oct 1? Oct 15?) Also review items that have the "after X date and/or 50 degrees. Is it "and", "or", or "and/or"?

WI Department of Agriculture, Trade and Consumer Protection • WI Department of Natural Resources • Natural Resources Conservation Service • University of WI Extension • WI Land & Water Conservation Association

DATCP Richard Castelnuovo (608) 224-4608	WDNR Gretchen Wheat & Mary Anne Lowndes (608) 264-6273	NRCS Pat Murphy & John Ramsden (608) 662-4422	UWEX Ken Genskow (608) 262-8756	WLWCA Reps Perry Lindquist (262) 548-7867 & Bruce Olson (608) 785-9867	WLWCA Jim VandenBrook (608) 441-2677
--	---	---	--	---	--

3. Deal with “N rate guidelines” in all subparagraphs. In some places we use A2809 fertilizer recommendations, other areas we use N rate guidelines, etc. Make consistent. What is preferred?
4. In sub d. We want it to be ok to add manure to alfalfa in the fall, but the way it reads now the N in the manure cannot exceed N rec, but for legumes there is no N rec. May need to set a N limit on alfalfa. If so, 60 lbs would be consistent with other N application maximums.
5. Try to stick with “lbs N” versus application rates (gal/acre)

Delgado N Leaching Index Update (Terry)

Terry showed the team the model on the powerpoint screen and went through a sample model run to see the results. The model may be ready in beta form in March. This model is a very qualitative tool, and therefore caution should be used in deciphering what the model is saying. The PI and this NI are very different types of tools. The PI has decades of data and took years of calibration. This NI is a very gross tool for management practices. This NI is not going to be required for everyone, but could be an educational tool included in the Tech Note.

Wrap up & next meeting agenda

- Updated proposal for addressing tile drainage, review Table 2 with application rates
- Update on addressing karst features
- Review language for N mgmt
- Update for Winter Spreading Risk Assessment
- Next meeting agenda – Presenting research use and needs to UW Discovery Farms

Next Meetings: Feb 13, Mar 25 (WI Dells, Wilderness Conference Center
Apr 10, May 14, Jun 10, Jul 10, Aug 12 (Aug 13th was not available at Hancock)