



Standards Oversight Council (SOC)

Developing effective technical standards that protect Wisconsin's natural resources

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NRCS 635 Vegetated Treatment Area Standard Team

MEETING NOTES

Wednesday, December 6, 2023 ▲ 9:00am – 12:00pm ▲

Online Meeting

9:00 Welcome (Kate, Team)

Attendance: Kate Brunner, Steve Becker, Travis Buckley, Bernard Michaud, Adam Moris, Eric Young, Justin White, Emily Micolichuk

Absent: Chase Brouillette

Guests: None

9:05 Notes Review (Kate & Team)

Goal: Review and approve 11/1/23 draft meeting notes.

Draft meeting notes from 11/1 meeting were emailed to the team for review. The main action item was for the team to review and comment on a preliminary draft of the updated standard. We'll discuss some of the more substantive comments in the meeting today. We'll also discuss Initial Reviewers in the meeting.

No team comments or questions raised on the notes; Kate will finalize and post online.

9:10 Group Discussion of Team Comments to Standard (Adam with Full Team)

Goal: Determine further edits to draft standard language focusing on areas with substantive comments from the team.

The team was sent a preliminary draft of the updated standard for review and comment. Some responses were typed in that review file. Adam leads team discussion on a few more substantive comments and team reviews revised text on-screen together. Key points of Team discussion:

1. Cond Where Practice Applies: The standard specifically addresses feedlot and feed storage runoff, but what about process wastewater? Especially milkhouse waste, where or how does that fit in? Do we need process wastewater specific additional criteria? Also how does the 627 standard come into play?
2. Cond Where Practice Applies: Since running WinSRFR is required I think this criteria can be eliminated. Let the WinSRFR model criteria control.
3. RE: "...such as a fiberglass reinforced plastic V-notch weir/baffle assembly..." I'm concerned most technicians won't know what this is. May need a standard drawing or diagrams in a companion document.

4. "adequately addressed": What is considered "adequately addressed"? Current standard requires every 150ft.
5. Additional Criteria for Site Suitability
 - setback from the perimeter to private wells: Does there need to be a note stating "do not direct runoff towards private/public wells"?
 - For sites that would not meet these setbacks (wetlands, ponds, streams, lakes, flowages...), would nongrowing season storage make VTA acceptable as current standard allows?
6. Additional Criteria for Hydraulic Design:
 - General: PDF walkthrough would be helpful. Is there a way to set up a template model that could be downloaded to make sure the key settings are correct for planners?
 - 1-year, 24-hour: Is this value to come from the table in considerations section? could likely edit an existing VTA excel sheet to help to get this value.
 - No, county-specific runoff depth, intent is to avoid VTA design spreadsheet, can discuss at next meeting
 - CPS 632, Settling basins receiving lot runoff refers to flood routing in TR-55 Ch. 6. Is taking an average flow rate over 4-12 hrs unrealistic? Would it be better to develop a inflow rate from the qo in Figure 6-1 of TR-55? Can't remember, does WINSRFR run a hydrograph or is it a steady flow rate?
7. Additional Criteria for Nutrient Balance
 - If using 10% as constant and not per soil class then table 4-9 should just be updated to be 30.8, 15.4, 7.7 to reduce these steps for planners.
 - Bernie getting a batch of information on nitrogen loading from animal lots. Don't have it organized yet but plan on for the meeting.
 - Calc for feedlot runoff: We need a similar section for feed storage runoff nutrient loading. The current NRCS 635 design table has the needed information.
 - Nitrogen uptake: VTA seed mix table is needed. could be an excel sheet that just has mixes or custom mixes that would give lbs/ton. At minimum include Table 6-2 nitrogen uptake.

In Example, the values based on annual runoff volume. Different runoff depths/percentage in Koelsch document and nitrogen content values vary a lot with different runoff depth.

Bernie looked at a few different resources:

- AWMFH
- Dairy Forage Research designed looking at APLE Lots designed for P but data avail for N.
- Pioneer Farms
- UW Discovery Farms

Bernie extracted VTA size for each resource and tabulated for comparison:

These were not necessarily directly comparable since some characteristics were different – e.g., lot size, animal density. In addition, not all have a settling basin component—possibly only Koelsch?

Team discusses information and how to tie variability of data back to the VTA design in the technical standard.

- Some options discussed included increasing loading rates in the Example, using a minimum size ratio, increase separation distance to groundwater or more advanced option like adding a drain tile below root zone in beginning of VTA with a deep sump that collects low rainfalls to distribute further down the VTA. Drain tile the N and P would be spread out and stored. Could be a maintenance issue.
- Previous modelling the team reviewed included nitrogen per animal basis and the standard simplified loading.
- Nitrogen in smaller runoff events (<1yr) will likely overload the vegetation in the first 50 feet and be lost. Increasing the VTA size for nutrient balance with annual runoff doesn't address small rains (<0.5") that are not sufficient runoff to distribute the nitrogen.
- Team identified some possible design options such as for a min size based on nutrient loadings and min VTA-to-drainage area ratio—suggested 1:1, which would be larger VTA size than previously envisioned. Based on WinSRFR modeling, the VTA ranges around 0.11 to 0.22 acre paved (50-100%); 0.08 to 0.30 acre earthen.
- Criteria mentions sizing for nutrient balance and it's designed for 1-year conditions.
- Current standard design doesn't assume full nutrient balance. Standard is a practical use of a VTA.
- Team acknowledges that it may not be possible to achieve nutrient balance for full spectrum of sites and storms and vegetation. VTA is one waste management tool.
- Steve** and **Bernie** will work together on a summary of the strengths and weaknesses of VTA in this updated standard as a cover letter for the initial reviewers.

Summary of Outdoor Lot Nitrogen Annual Loading			
Source	Lot Type	Average Annual N Load, (lbs/acre)	VTA area/Lot Area
Draft NRCS CPS 635 Example	earthen	50	0.29
AWMFH, NEH Part 651	earthen	209	1.22
AWMFH, NEH Part 651	paved	523	3.04
Koelsch (6/06) Method 2	earthen	120	0.70
Koelsch (6/06) Method 2	paved	290	1.69
Dairy Forage Research Cntr.	earthen	217	1.26
Dairy Forage Research Cntr.	paved	2,036	11.84
Pioneer Farm - end of VTA	paved	582	3.38
Calf Hutch Lot		729	4.24
Feed Storage Runoff to VTA		662	3.85
Source	Lot Type	TKN conc. (mg/l)	
Dairy Forage Research Cntr.	earthen	101	
Dairy Forage Research Cntr.	paved	135	
Calf Hutch Lot		448	
Feed Storage Runoff to VTA		159	

Although not adequate meeting time to discuss O&M, the Team discussed that some more rigorous O&M would be helpful. NRCS requires that the Owner signs O&M Plan; this was explicit in previous standard and is still program requirement. **Bernie** will look at O&M language and send Adam suggested additions to this section.

10:45 Break

11:00 Continue Discussion of Substantive Team Comments to Standard (Adam with Full Team)

The next step is Initial Review and Team acknowledges that the document is not yet 100%. To help reviewers, **Steve** and **Bernie** will work on a short (1-page) cover page for the Initial Review copy to summarize the work and acknowledge strengths and weaknesses.

11:40 Initial Review (Kate & Team)

Goal: Discuss Initial Review process and decide on reviewers.

The Initial Review is by a short list of invited experts only and is usually around 5 to 10 people. After this Initial Review, there will be a Broad Review which is the open, public review step.

The team will first start with a longer list of potential Initial Reviewers then narrow it down. This will be done via email over the next week. **Team Members** should send Kate suggested possible technical reviewer names by the end of the day tomorrow (12/7). **Kate** will then prepare a poll of possible reviewers and send to Team for input early next week. After votes are in, **Kate** will confirm the short list of reviewers with Steve, and then reach out to the final selected people to confirm their interest and availability.

Any people on the list who were not selected will still be specifically invited to participate in the Broad Review, a public review step after the text is refined further.

We typically give reviewers a 3-week review time but if the review falls over a holiday, more time will be allowed. When the document is ready (from Adam and Steve), Kate will forward draft text to the reviewers with instructions.

Kate will let the Team know when the document is sent out and who the final confirmed Initial Reviewers are.

11:55 Review Action Items and Next Steps (Kate)

Next meeting scheduled for January 3. If the draft is in the middle of review (which seems likely), the Jan. 3 meeting will be cancelled and the team would next meet on Feb. 7 to go over Initial Review comments. Kate will let the team know as the schedule unfolds the next couple weeks.

Action Items developed today:

1. Selecting Initial Reviewers
 - a. **Full Team** - send Kate suggested possible technical reviewer names by the end of the day tomorrow (12/7).
 - b. **Kate** will prepare a poll of possible reviewers and send to **Team** to vote by 12/11.
 - c. **Kate** will confirm short list of reviewers with Steve, then reach out to the final selected people next week to confirm interest and availability.
2. **Steve** and **Bernie** will work on a short (1-page) cover page for the Initial Review copy to summarize the work and acknowledge strengths and weaknesses. Send to Kate by 12/14.

3. Standard text preparation
 - a. **Bernie** will send Adam suggested additions to O&M section.
 - b. **Adam** will make clarifying edits to the standard text based on today's meeting discussions and send Kate the updated draft file for Initial Review.
 - c. **Kate** will send cover letter and standard to the identified reviewers and start the Initial Review process. Kate will let the team know the confirmed reviewer list and timing when the file is sent out.
4. **Kate** will prepare draft meeting notes from today, then reviewed by full **Team**.
5. **Kate** and **Steve** will prepare agenda for next meeting (either January 3 or Feb. 7). Kate will send to the full team about 1 week in advance along with any reading materials.

12:00 Meeting End