



Standards Oversight Council (SOC)

Developing effective technical standards that protect Wisconsin's natural resources

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1010 Proprietary Filtration Devices Standard Team

MEETING NOTES

Wednesday, July 10, 2019 ▲ 9:00am – 3:00pm ▲

DNR Service Center, 3911 Fish Hatchery Road, Glacier's Edge Room, Fitchburg, WI

9:00 Introduction, Notes Approval, Process Review (Kate)

Goal: Welcome, adjust 5/8/19 notes as necessary and approve.

Goal for today – continue refining the draft standard text.

Kate emailed draft notes from 5/8 meeting to the team. One comment received so far was related to the position of the filter media to be 1' above the seasonal high water table. Team thinks it merits further clarification; this concept will be discussed again later today. This was a point of discussion and not decision on 5/8 and notes will be adjusted and then finalized.

Action items from last meeting were all completed and we'll discuss as a team today:

- **Eric** – update PSD adjustment formula, draft language for phosphorus criteria, and respond to additional team comments to the draft language.
- **Team** – review and comment on revised draft text.
- **Phil and Chris** – create a short list of generic O&M tasks.

Simplified Filter Sizing Method (John)

Goal: Summary of modelling evaluation on the “shortcut” sizing method.

Bob Pitt emailed the team on 7/8 with a report of his research with John Vorhees. John summarizes this evaluation which used WinSLAMM modelling to review the simplified sizing. Some key points from the discussion are below:

- *The chart on Page 5 of the report demonstrates a different approach to sizing--comes up with expected flow rates based on percentage of annual flow treated to help with device selection and sizing.*
- *Bob's evaluation was more refined stepped evaluation (6-min. steps) and used 5-year rainfall file (whereas approach previously discussed with the team was 1-year, 1981). Looking at comparison of rainfall files charted together, 1981 is more conservative file than multi-year average. Madison rainfall file is also more conservative than those for other parts of the state. Team agrees by consensus that using 1981 Madison file as the*

default is the most conservative approach and a better rule of thumb for the generic sizing method.

- *Generic sizing also doesn't consider storage or backwater conditions.*
- *The engineer can still model their site to the local file that is better adapted to site-specific situation.*

O&M List (Chris/Phil)

Goal: Team to review and discuss draft O&M list.

Chris and Phil drafted a list of generic O&M tasks, universal for all devices.

Since it includes technical background and support information, it's more applicable content for a Technical Note, a companion document to the Technical Standard.

Draft was emailed to team on 6/28 and some comments received from team. Edits were made directly to the Word file, on screen. Some key points of discussion on the Tech Note:

- *Max period 2 years for filter replacement:*
 - *It's very unlikely that someone would choose to oversize a system to avoid maintenance. Annual maintenance is a typical design parameter. The owner could petition for longer replacement term if it's appropriate for their specific site.*
 - *Statement "In most situations..." allows for variation with regulatory authority to approve an appropriate alternative.*
 - *Team agrees 2 years is a reasonable requirement.*
- *O&M Form – section removed, as these forms aren't typical for DNR. The manufacturer often has O&M checklist or form specific to their devices.*
- *Is this O&M just related to TSS? Filters would clog for TSS or oil & grease before P filtration is spent. Clarification language will be added if not already in text.*
- *Consistency with other standards – for example, biofiltration has very loose inspection frequency, though that is appropriate to another device type. **Nick** will review inspection and maintenance frequencies in other DNR standards for comparability.*
- *Consistency with standard text – We make some consistency changes. As we work through edits, we should also review for potential consistency issues between the Tech Note and Standard.*

PSD Adjustment Formula (Eric)

Goal: Team to review and discuss the PSD adjustment formula with a stepped safety factor

As an action item from the last meeting, Eric further revised the PSD adjustment calculation to include a stepped safety factor. Eric reviews the latest updates and the team works through different scenarios. Key points of the discussion are below:

- *The safety factor changes as the particle size gets further from NURP PSD.*
- *The particle size breakdown is the minimum based on TAPE, though more bins could be reported.*

- *If the measured particle size is NURP or finer, then you'd get full credit.*
- *Calculation needs to be tweaked a bit to adjust for different scenario (e.g. clay % < NURP and silt % > NURP, but combined still 87% of particles).*
- *Team discusses how many sampling events we expect for sampling. 20 would be great, though TAPE is now 15 samples. The safety factor should take into account both influent and effluent safety factors and adjustment would be the lower of the two (in the event there's not the same number of inf and eff). Table under TSS Filtration Efficiency: Efficiency Adjustment for NURP should be adjusted to reflect this.*
- *TAPE doesn't require influent and effluent samples on all 15 qualifying events. We discuss concept of a stepped safety factor based on number of samples.*
 - *15 samples, 0 safety factor*
 - *12 samples, 2.5 safety factor*
 - *9 samples, 5 safety factor*
 - *etc.*
- *Sampling won't be required to be by a WI-certified lab since many of these devices already have TAPE approval and this would be too restrictive. Generally, the team agrees to accept WA protocol and not add more requirements (e.g., when or how samples are collected).*
- *Adjustment factor section will include a "how to do this" type of example to demonstrate. This won't reference a specific device or comparison of devices.*
- *Team discusses whether adjustment should have a "floor" % reduction. For example, if a device has GULD approval but not small enough particle size, then we'd still offer a minimum % reduction credit. Team discusses that a 50% reduction is a fair minimum floor for a TAPE GULD approved device.*
- **Eric** *will further refine the NURP adjustment calculation based on issues identified and email revised spreadsheet to team in 2 weeks, by July 24. The whole **Team** should review the calculations in this spreadsheet and email comments to Eric and Kate by August 12.*

Phosphorus Design Criteria (Eric)

Goal: Team to review and discuss draft language for phosphorus criteria.

As an action item from the last meeting, Eric prepared phosphorus criteria. Eric leads team in review of this text. Some key points below:

- *TAPE approval for P is pass/fail for whether device achieves 50% or not. 50% is on the low side of TMDLs for P. We won't be able to use TAPE GULD approval directly as we are for TSS.*
- *% reduction credit would be applied based on how device testing reported in GULD report. Should there be a safety factor here too?*
- *TP influent can vary quite a bit, across sites but also across the same site from storm to storm.*

- *Should we allow P removal credit if TAPE approval is just for TSS? There is some TP reduction correlated to TSS. Is there data to support this? Existing biofiltration standard provides 35% reduction for just sand. Permeable pavement standard has TP credit based on runoff volume into subgrade soil.*

Focus on Specific Areas for Clarification (Eric/Team)

Goals: (1) Identify areas of draft standard that need further clarification, and (2) Select and discuss areas.

Team continues review of standard text by editing the first couple pages of text on-screen. Some key points:

- *Filter sizing based on maintenance:*
 - *Design criteria calculation (6)(b) is based on NJDEP maintenance requirements. If a filtration device hasn't gone through NJDEP and tested to failure, then the manufacturer wouldn't know the weight before 10% loss. How can we account for these? Filter manufacturers would go through NJ—it's the easiest and broadly applied elsewhere, not just in NJ. There are probably products in niche markets that don't have NJ testing, but it's very low.*
 - *This sizing method is used to establish the maintenance period, then scale the # of filters for maximum of one year before maintenance is needed.*
 - *This section is just for design sizing. Actual installed maintenance is still based on quarterly inspections and manufacturer O&M recommendations.*
- *Device definition – Devices like Filterra and tree box filters aren't included in current definition. They may be more appropriate to bioretention. Jay will review the Bioretention for Infiltration standard (DNR Standard 1004) for what would need to be changed. DNR may be able to make an update to bioretention standard without full team process like we are using here—if it's a minor modification there is no team and no public review and a moderate process is a mid-way level of effort.*
- *We will not include website citations – these are cumbersome and not easy to keep current.*
- *Safety is important in O&M, but standard won't cite specifics on safety requirements (e.g. confined space or hard hats). Laws and Regs section has general statement about all rules and regs being followed. We could add another general statement that this includes all safety requirements.*
- *We previously discussed that the location of the device would be above the seasonal high water table due to concern that water could leak in OR out. If device is water tight, as they are designed, this wouldn't be an issues. Also, some devices have media stay wet. Nick will prepare draft language for the system to be constructed so that groundwater won't affect the device or media.*
- *Pretreatment – Pretreatment will be required for oil & grease and for sediment. Standard won't itemize acceptable forms of pretreatment; this is up to site-specific design.*

- *Sizing – devices should be sized to meet both flow and maintenance (6a and 6b in this draft).*
- *Review of O&M section will continue as edits are made so that standard and Tech. Note are consistent.*

2:30 Next Meeting Topics and Plan of Action (Kate/Eric)

Goal: Identify topics, concerns, and goals for next meeting. Review Action Items, timeline and prepare agenda items for next meeting.

Kate and Eric will clean up the text of both standard and tech note based on comments received and discussions today. We'll email drafts to team at least a week before next meeting, by August 7. The Team will then review revised draft standard and tech note, and email comments to Eric and Kate by August 12.

Next meeting is scheduled for August 14.

Meeting topics for August and Sept will be to continue refining text based on comments from team and establish initial reviewer list. Kate has a draft list of possible reviewers started from those who didn't make the team and ideas from the SOC advisory council. We'll decide general stakeholder groups that should be represented and amend the draft list so it includes broad expertise.

Action Items:

- *Nick – Review inspection and maintenance frequencies in other DNR standards for comparability*
- *Nick – Re-draft language for "Location" section to address construction of the system so groundwater won't affect the device or media.*
- *Jay – Look at bioretention standard (DNR Standard 1004 Bioretention for Infiltration) for what would need to be changed to incorporate Filterra and other products like it.*
- *Eric – Further refine the NURP adjustment calculation based on issues identified. Email spreadsheet to team in 2 weeks, by July 24.*
 - *Team – Review calculations in spreadsheet; email questions or suggestions to Eric and Kate by August 12.*
- *Kate/Eric – Clean up text of standard and tech note based on discussions today and email drafts to team at least a week before next meeting, by August 7.*
 - *Team – Review standard and tech note; email comments to Eric and Kate by August 12.*

3:00 End