



# 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, May 8, 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 3/20/19 notes as necessary and approve.

*Goal for today – start looking at draft standard text. The team has a preliminary draft as a starting point and, other than our sideboards, this content is all open for discussion. Each team member had a chance to identify up to three issues with the draft standard text that need work.*

*We discuss draft notes from 3/20 meeting, no comments raised in this meeting. Some suggested changes were emailed to Kate yesterday though that team member will be late today so we will discuss another time. If anyone has comments or edits, contact Kate by 5/15.*

#### Rain File Review (Roger)

Goal: Evaluation of different rain file

*Roger Bannerman gave a Power Point presentation (attached) based on a 2016 USGS evaluation of different rain files to understand modelling variations with more recent rainfall data (with more severe and more frequent storms). Some key points from that review are below:*

- Rainfall years were ranked by multiple criteria with lowest rank being the closest to the average for each criteria. A sum of the rankings was made and the year with the lowest ranking sum was selected as the annual average rainfall year. In looking at updated data (adding additional rainfall years to the data set), the Average Rainfall Year using rank sum remained same for Madison, Milwaukee and Green Bay but changed (more recent) for Minneapolis and Duluth.*
- When rain file was changed in the model, the output factors also changed. Modeled TSS does when comparing old to new rain files showed reduced TSS for Duluth, increased for Minneapolis though total volume went up for both cities. In addition, wet pond efficiency goes down for both cities, but not bioretention.*
- Adding years did not seem to change average annual base load.*
- Using only last 30 years of rainfall years, a new average rainfall year (more recent year) emerged for all 5 cities.*
- Storm water quality design is based on averages and not maximums. High intensity or short-lived storms in an urban setting have minimal effect on annual average loading so*

*they aren't part of design or calculations. This effect may also occur in vegetation—there is overland runoff during heavier storms.*

- *There are lots of variables to consider and more research is to be done.*
  - *Study with season as a variable*
  - *Evaluate impact of a rainfall record on other storm water control practices*
  - *Evaluate definition of rainfall event (e.g. 3 or 6-hour gap?)*
  - *Change in rainfall file may shift performance relative to TMDL goals for MS4 permits*
- *This team is not ready to make a recommendation for DNR to reevaluate rainfall file, but believes further research and evaluation is needed to understand the impact of a potential change.*
- *The team will include a consideration for sizing to consider increased storm frequency and severity.*

#### **PSD Adjustment with Actual Data (Eric)**

Goal: Review the proposed adjustment calculations with data.

*A PSD adjustment calculation has been presented and discussed at previous meetings. Now, it has been tweaked a bit team reviews and discusses the results.*

- *The standard would include formulas where the user would enter their results in to one of two calculation options. Option 1 would allow for input of measured percent reduction and influent average percent finer by particle size grouping (i.e. clay, silt, and sand). Option 2 would allow for input of Measured Removal Efficiency by particle size grouping (i.e. clay, silt, and sand). Both options would report out an adjusted % reduction.*
- *Actual data from several different filters were plugged into the calculations as a test. If the data source was similar to NURP, then the adjustment factor is close to 1.*
- *The calculation may also include a "safety factor" to provide a more conservative result. Team discusses that the safety factor would be more accurate if it wasn't a constant multiplier for all data, but was staged to reflect the quality of the data (storm factors and PSD represented). Eric will update PSD adjustment formula with a stepped safety factor, draft language for phosphorus. If your data is already very similar to NURP, then a 10% safety factor is not appropriate.*
- *To use the calculation, we may include acceptable sample size—perhaps something like <10% of particles should be <4 microns. Team will discuss this further when detailing introduction to calculation in the standard text.*
- *Very high influent concentration skews % reduction results.*
- *WA gives credit for max. 80% removal, even if data shows 83% or 90%.*
- *An adjustment calculation allows for update of data from WA TAPE report. The manufacturer could do further tests if they want and provide new calculations. Standard should include details on how to resolve conflicting data and modeling.*

- *Both Option 1 and Option 2 calculations are conservative and either could be used. Manufacturers could also use a regulatory agency approved model that has a more refined device-specific performance efficiency integrated into the model.*

**Discuss Key Issues in Standard Text (Eric/Kate)**

Goal: Identify key areas in the preliminary draft standard text to discuss. Vote on major decision points.

*We'll eventually review this line by line, but today the Team focuses on what each team member has identified as bigger issues with the preliminary draft. Some edits were made directly to the draft text file in progress. In summary:*

- *This standard isn't just for media but for the device as a whole.*
- *Team discusses statement regarding device location relative to water table. Suggested requirement for filter media to be at least 1' above seasonal high water table, though most devices have standing water as part of operation so purpose of this position would need clarification. Possible concern over groundwater leaking in and stormwater (which may be contaminated) leaking out. Text to be adjusted.*
- *Sizing device may be adjusted relative to maintenance frequency. Some maintenance is specific to the device, as recommended by manufacturer. There are some generic maintenance items; **Phil** and **Chris** will work together via email to create a short list of universal/generic O&M tasks. Team will continue to discuss maintenance at next meeting.*
- *Design criteria will be added for phosphorus. **Eric** will draft language.*
- *We don't have time to address all the initial team comments today. **Eric** will respond to additional team comments to the draft language and send a revised draft to the team by June 28. Team to review in advance of the next meeting.*

**Additional Criteria and Considerations (Kate/Eric)**

Goal: Team to review text and identify additional items for inclusion in the standard.

*Some additional criteria and considerations were discussed as documented above. Expansion of other details will continue to be discussed in subsequent meetings.*

**Next Meeting Topics and Plan of Action (Kate, Eric)**

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

*Next meeting was scheduled for June 12; however, in light of progress today and both Eric and Kate's work schedules, we decided to cancel that meeting. **Next meeting will be July 10, 2019.** In the meantime, team will continue to make progress with these action items:*

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- **Eric** will update PSD adjustment formula with a stepped safety factor, and draft language for phosphorus criteria.
- **Phil** and **Chris** - work together to create a short list of universal/generic O&M tasks.
- **Eric** will respond to additional team comments to the draft language and send a revised draft of standard to the team by June 28.
- **Team** to review and comment on revised draft text, and be prepared to discuss concerns at our next meeting.

*Next meeting will consist of continued review and discussion of draft standard text, focusing on adjustment calculation and O&M section.*

**3:00 End**