



Standards Oversight Council (SOC)

Developing effective technical standards that protect Wisconsin's natural resources

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1010 Proprietary Filtration Devices Standard Team

DRAFT MEETING NOTES

Wednesday, October 10, 2018 ▲ 9:00am – 3:00pm ▲

DNR Service Center, 3911 Fish Hatchery Road, Fitchburg, WI

Attendees: Kate Brunner (SOC Program Manager), Eric Rortvedt (team leader), Jim Bachhuber, Samantha Brown, Adrienne Cizek, Jay Holtz (via phone/webinar), Judy Horwathich, Jan Kucher, Philip Taylor, Nick Vande Hey, Jake Brunoehler (ad hoc)

9:00 Introduction, Notes Approval (Kate)

Goal: Welcome, introductions, adjust 9/12 notes as necessary and approve.

Regarding 9/12 notes – UpFlow presentation indicated that “ribbons” were added—why? This was additional membrane filtration to address changes in NJ requirements. NJ went from a 2-step lab+field test system to only lab test, and also reduced particle size. Clarification added to 9/12 notes. No other changes noted, notes will be posted online later this week.

9:15 Review NJ Program (Phil)

Goal: Provide a summary of the NJCAT/NJDEP program. Start discussing strengths and weaknesses of the NJ program as it applies to WI.

Presentation on NJCAT/NJDEP, with some comparison to TAPE. *See separate presentation slides.*

- NJCAT first reviews the data to verify the performance claims of the device, then NJDEP would certify whether the device meets 80% TSS control based on NJ's standards
- Aspects of the program are usable for WI – considers flow, exhaustion, scour, scaling. Mass loading 600 lbs/acre/year.
- Uses lab testing only, no field evaluation required.
- Evaluates TSS only, not P or other contaminants.
- Particle size considered for 80% reduction is NOT NURP.

9:30 EPA ETV Program (Jim)

Goal: Discuss lessons learned from the ETV program and complications of field testing.

Presentation on ETV challenges. *See separate PDF file of presentation slides.*

- ETV was to verify vendor claims via a field testing process.

- Allows for testing of a range of pollutants (not just TSS)
- Requires 15 qualified events (meeting min. rain amount, # samples including dup and blank)
- Measured flow, water quality, runoff vs treatment (incl. bypass flow)
- Challenges: run-on from off-site; watershed changes over time (pavement or other impervious area changes, pollutant load changes); equipment issues
- 5 years from protocol to verification report.
- Financing wasn't sustained so program ended.

10:00 Review WEF STEPP Initiative (Jay and Jim, guest Seth Brown)

Goal: Provide summary of the recent WEFTEC meeting. Includes presentation by Seth Brown, Stormwater Programs Director at Water Environment Federation (WEF). Start discussing applicability to the WI standard.

Seth Brown presentation and Q&A (remote webinar presentation). *See separate PDF file of presentation slides.*

- Current practice problems: cost, time inconsistency, other issues for manufacturer, developer and regulator. STEPP is looking to establish common performance testing, evaluation and certification process. **Program development still in progress.**
- WEF will govern, administer, and promote the program and provide regulatory engagement.
- Many partners and collaborators to share the load, leverage each other's strengths:
 - WERF/WRF (design, data collection and management, innovation)
 - ASTM (develop standards),
 - ITRC (guidance development, training, state outreach)
 - Also affiliated with WA DEQ, NJDEP, testing facilities, and EPA.
- WEF next steps: develop MOUs with partners, continue to get state regulatory support, refine standards for field and lab testing, secure funding for launch and transition phases.
- Timeline: MOUs and a business plan within 1 year, then launch the program late 2019
- Suggestions for our consideration: state vs local vs national policies and requirements, modeling vs lab vs field testing, consistency in addressing public domain BMPs compared with proprietary, who pays?

Further team discussion points:

- We will likely be more efficient using an existing program rather than making parallel progress with STEPP.
- Some other states and localities are using NJCAT but they support STEPP too.
- Particle size distribution for STEPP likely won't be NURP.
- We will stay tapped in to STEPP and monitor progress alongside our own progress.

11:15 Break

11:30 Review WA TAPE Program (Phil and Sam, guest Doug Howie)

Goal: Summary of the WA program. Includes a presentation by Doug Howie, Program Administrator for TAPE. Start discussing strengths and weaknesses of the WA program as it applies to WI.

Doug Howie presentation and Q&A (remote webinar presentation). *See separate presentation slides.*

- WA has a 3-tier program, just updated in 2018:
 - Pilot Use Level Designation (PULD) – based on lab data, can use 2x
 - Conditional Use Level Designation (CULD) – requires some field data, can use 10x; monitor at least one.
 - General Use Level Designation (GULD)– full approval, takes about 3 years with 12 qualifying storm events (soon to be changed to 15), currently 15 devices have GULD
- Based on performance goals; considering pretreatment, basic, and enhanced TSS removal; phosphorus; oil
- Process consists of application, Quality Assurance Project Plan (QAPP) review, monitoring, then Technical Evaluation Report (TER)
- They have stationary field testing sites – 3 are in use now with more soon, devices are stressed in the field in conditions similar to design level. Standardized field testing sites for more uniform application of approval.
- Need to treat 91% of average annual runoff, including what may be bypassed. Particle size distribution tested on 3 influent and 3 effluent samples.
- Field testing targeted for TSS at 200 mg/L mean influent, though they still test at <200 mg/L
- TAPE is coordinating with STEPP. With STEPP, they may need to consider nitrate or bacteria, though they aren't sure device capability for these contaminants. They also may need to look at TSS and SSC and report concentration (currently they report % removal).

Kate will request that Doug send some representative copies of QAPPs and TERs for devices with GULD for TSS and P for us to review some details.

12:00 Lunch, provided

12:30 Review morning discussion

Goal: Revisit key discussion points from morning information sessions (ETV, STEPP, NJCAT/NJDEP, TAPE) and discuss how this information can be applied to the WI standard.

To what extent could device testing in other programs (NJ or WA) be scaled to fit different sized sites? Tables of flow and sizing exist – Eric will look into this and refine for review at next meeting. In WI, the engineer submitting the permit or application would need to do sizing and design and modeling to show standard is met, not DNR.

Filters have varying efficiency at different flow rates.

- Filter should meet 80% removal as designed, and provide an efficiency curve. TAPE uses a rating curve at different flow rates, including 125%.
- Different flow rates will have different efficiencies for TSS versus P removal.
- DNR currently looks at percent reduction of average annual mass load. Smaller storm events get greater treatment.

We could include another state's program/approval for P, so WI would not need to tackle P specifically. Can we do the same for particle size? We should look at PSD curves for TAPE to see if their approval could carry over to WI. WA's 80% removal for TSS does not equal WI's 80%. Could we prepare table or calculation to shift/adjust TAPE results?

Could we let modelling decide load rate? Might the standard include a hydrology design alternative that is conservative, as opposed to modeling each site with proposed filter design? For instance, establish what minimum design treatment is needed for an acre of impervious surface based on Wisconsin (Madison) annual average rainfall file. Eric will bring/develop an example for discussion.

Modelling – WinSLAMM has 2 filtration devices. MN uses Shazam for HDS and is moving toward P8 model. We park conversation on modelling—with some questions raised for future meeting: How to include modeling in this standard? What data interpretation is done to get a device into WinSLAMM? How does the model represent hydraulics of a filter? What information would programmers need to get a new device into WinSLAMM (to maintain level playing field for variety of devices, simplify/streamline programming)? Sam and Jake can provide some samples of WinSLAMM modelling runs and their white papers. Judy will look at particle size used in the ETV evaluation. John is not here today but Kate and Eric will ask him to present at next meeting to provide WinSLAMM background on hydraulics and interpretations for the model.

O&M – we should require system be designed for minimum 12 months operation before maintenance would be necessary.

Other states have some programs but not as accepted or in-depth as NJ and WA. Some municipalities adopted NJCAT, in part because they also support STEPP and know NJCAT is part of that process.

- Is there anything we still need to know on these topics? A side-by-side comparison would be helpful—similar to what Phil presented in NJ vs. WA but with more details of things like # storms, particle size distribution (PSD), concentration limits, # of samples. **Phil, Jim and Jake** will work together to add detail for NJ, WA and VA/TX respectively.

1:45 Break

2:00 Proprietary Filtration Standard Boundaries (Eric)

Goal: Review DNR's approach for applicability and minimum criteria.

We postpone this discussion in favor of continuing conversation on ETV, STEPP, NJCAT and TAPE. See notes above.

2:30 Next Meeting Topics (Kate, Eric)

Goal: Identify and understand the topics, concerns, and goals for next meeting. Where is more research or deeper discussion needed?

Topics touched on for some future discussion:

- Modeling
- Criteria
 - o confirm list (TSS, P, others?)
 - o develop numbers - concentrations or percent reduction (consideration for lower influent concentrations will have harder time meeting %reduction)
 - o field vs lab test and how measured
- O&M

2:45 Plan of Action (Kate, Eric)

Goal: Review Action Items and agenda items for next meeting (Nov. 28 at DNR Fitchburg Service Station).

Kate – obtain TAPE report and QAPP from Doug for representative filter and distribute to team, **team** to review details for review

Eric - Draft table with design rates for team reaction – goal: assess relative NURP and min particle size. Nick also had suggestion for Eric – Eric follow up with Nick to clarify.

Eric will bring/develop an example showing minimum design treatment.

Judy can look at particle size used in ETV modeling.

Sam and Jake - WinSLAMM white paper and modelling runs – Samples showing different results with some static information adjusting for few different variables (sizing based on hydraulic needs and contam. load)

John – WinSLAMM background – how model represents hydraulics of BMP (proprietary filters)
- data interpretations and issues with data transfer from vendors,
- what would they prefer to have to incorporate a variety of products?

Phil, Jim and Jake - Create expanded table like NJ vs TAPE table from Phil's presentation – Add # storms, concentration limits (max and min), PSD, # samples, others as useful
Phil to expand on TAPE portion then hand off to Jim,
Then **Jim** to add ETV, hand off to Jake
Then **Jake** – add VA and TX summary of key information

3:00 End