

**Virginia Stormwater BMP Clearinghouse Committee Meeting**  
Virginia Department of Forestry (DOF) Building, Training Room  
Charlottesville, VA  
April 22, 2013

Meeting minutes by Jane Walker

**Committee Members Present**

Joe Battiatia, Center for Watershed Protection (CWP)  
Scott Crafton, Department of Conservation and Recreation (DCR)  
Chuck Dietz, Virginia Tech  
Jacob Dorman, City of Lynchburg  
Charlene Harper, Geosyntec Consultants  
Ryan Janoch, Stormwater Equipment Manufacturers Association (SWEMA)/Terraphase Engineering  
Greg Johnson, City of Virginia Beach  
Mary Johnson, Virginia Association of Soil and Water Conservation Districts (SWCD)/Thomas Jefferson SWCD  
Chris Kuhn, Williamsburg Environmental Group (WEG)  
Roy Mills, Virginia Department of Transportation (VDOT)  
Scott Perry, Imbrium Systems  
David Powers, WEG  
Jim Rakestraw, Stafford County  
Colleen Rizzi, Loudon Water  
Rick Stanford, ATR Associates, Inc.  
Brian Stokes, Campbell County  
Jenny Tribo, Hampton Roads Planning District Commission (HRPDC)

**Agency Staff Present**

Melanie Davenport, Virginia Department of Environmental Quality (DEQ)  
Ginny Snead, DCR

**Contracted Technical and Administrative Personnel Present**

David Sample, Biological Systems Engineering/Hampton Roads Agricultural Research and Extension Center, Virginia Tech  
Jane Walker, Virginia Water Resources Research Center (VWRRC)

**Others Present**

Derek Berg, Contech Engineered Solutions  
Nick Burns, Hydro International  
Steve Curtis, Luck Stone  
Tim Edwards, Advanced Drainage Systems  
Mark Fendig, Luminaire Technologies/Dam Owner/Wet Pond Owner  
Chris French, Filterra  
Richard Jacobs, Culpeper SWCD  
Marc Lelong, Kristar

Bill Nell, Thirsty Duck  
Liz Scheessele, Timmons Group  
Corey Simonpietri, ACF  
Sean Simonpietri, Exact Stormwater Management  
Terry Siviter, Rotondo Environmental Solutions

### **Call to Order and Introductions**

Scott Crafton of DCR called the meeting to order and thanked everyone for coming. Each person introduced herself or himself. Scott extended a special welcome to the members serving the 2013-2015 term: Danielle Bishop, Chuck Dietz, Charlene Harper, Roy Mills, Scott Perry, Jim Rice, Colleen Rizzi, and Brian Stokes.

### **Comments on Minutes from Meeting on January 28, 2013**

Scott Crafton proposed two minor changes to the minutes of the previous meeting: (1) In the last paragraph on page 2, change that the director will "... approve or disapprove the requested use designation..." to give the director flexibility in approving a device for something other than what is "requested" by the applicant; and (2) In the first paragraph on page 3, change the last word to "basis" (from "call," "on a case-by-case basis"). No other comments were received. The minutes were approved by consensus as edited. The updated minutes will be posted on the Virginia Regulatory Town Hall Website: <http://townhall.virginia.gov/>.

### **Status of Fast Track Regulations**

Scott Crafton reported that DCR filed the fast track regulations on Thursday, April 18, 2013. The proposed regulations are slated to be reviewed by the following: Office of the Attorney General, Department of Planning and Budget (for review lasting no more than 40 days), Secretary of Natural Resources (for review no more than 14 days), and Governor (no deadline).

NOTE: Additional Information regarding the regulatory process may be found on the Regulatory Town Hall at: <http://www.townhall.virginia.gov/UM/actiontypes.cfm#fasttrack>.

Scott Crafton added that it is DCR's intention to post the regulations, *Virginia Technology Assessment Protocol* (VTAP), forms, etc. on the DCR website next week, and the web link can be then be added to the Clearinghouse website.

NOTE: The DCR webpage address for this information is:  
[http://www.dcr.virginia.gov/laws\\_and\\_regulations/lr2j.shtml](http://www.dcr.virginia.gov/laws_and_regulations/lr2j.shtml).

### **DCR Stormwater Division Update**

Scott Crafton announced that the merger of DCR's Stormwater Division into DEQ is in transition. Officially, the transfer takes place on July 1, 2013. It is DEQ's intention to bring the Stormwater Division as a unit over to DEQ and allow it to work as a unit for some time before changes are made. All stormwater personnel will move to DEQ. Some of the regional managers will stay with DCR, and others will move to DEQ. DEQ is considering hiring a number of positions in the next several months.

Melanie Davenport added that DEQ is working to merge the Stormwater Division with DEQ's existing programs and is preparing to bring the stormwater regulations up for adoption by the

State Water Control Board this summer. She added that the stormwater personnel in DCR's central office will move to the DEQ central office building (629 East Main Street, Richmond).

### **Presentation and Discussion: Evaluation of Pretreatment Manufactured Treatment Devices (MTDs) and MTD Scaling**

Derek Berg with Contech Engineered Solutions provided a brief presentation of current guidance on pretreatment practices and an overview of scaling methods often used with MTDs. He raised several potential issues associated with these topics and some solutions.

#### Evaluation of Pretreatment MTDs

The proposed fast track regulations (4VAC50-60-1580) state, "*The manufacturer of any MTD that has received approval through the TARP testing process in another state or for basic treatment through TAPE may apply to the director for reciprocal approval as a pre-treatment MTD.*" The referenced protocols in the proposed regulations include the *Technology Acceptance Reciprocity Partnership* (TARP 2003) and *Technology Assessment Protocol - Ecology* (TAPE; Washington State Department of Ecology [WSDOE] 2002, 2004, 2008, 2011). The purpose for including this language was to give credit to pretreatment practices for testing that has already been completed. Derek Berg stated three potential issues with the language in the proposed regulations:

1. The referenced protocols are not the protocols that are typically used to test pretreatment devices by the Washington TAPE or New Jersey Department of Environmental Protection (NJDEP) programs.
2. If the agency accepts data from multiple programs, as stated in the regulations, it will diminish the comparability across technologies.
3. The regulations are unclear how pretreatment practices with a total suspended solids (TSS) rating will fit into the Virginia stormwater regulations, which are written around phosphorus reductions.

Derek Berg offered that the pretreatment language currently references TARP and TAPE field protocols, but most devices are not tested per these protocols. For example, most TARP approved devices are only tested in a lab setting using the NJDEP laboratory protocol (slated to be updated in 2013); only two or three pretreatment MTDs have been field tested. Furthermore, whereas the Virginia fast track regulations allow for testing through TAPE, WSDOE does not require pretreatment practices to test per TAPE. Instead, manufacturers seeking pretreatment approval by WSDOE must show 50% removal of 50 micron sediment and 80% removal of 125 micron sediment; no specific protocol for how to accomplish this is in place.

Accepting data from multiple programs makes side-by-side best management practice (BMP) comparisons problematic. For example, in comparing the NJDEP and WSDOE programs, different particle size distributions (PSDs) are required and different sizing approaches are taken. Furthermore, NJDEP uses a weighted approach whereas WSDOE relies on a point on a curve. These differences greatly increase the probability that the same device will be approved for different hydraulic loading rates by these two programs.

Derek Berg offered that developers generally follow the lowest cost path that yields a permit. Thus, without a regulatory requirement to remove sediment, it seems unlikely there will be a demand for pretreatment practices in Virginia.

David Sample offered that there is some demand in Virginia for pretreatment devices. Derek Berg clarified that there is a need for 10-20% total phosphorus (TP) removal credit at sites, and the practices that are generally considered pretreatment devices are currently awarded this level of TP credit. A committee member cautioned that based on the technical variance with sizing and scaling, etc., which exists in the real world, simply assuming a 10-20% phosphorus removal for pretreatment practices is incorrect. He added that even if pretreatment devices are not removing 80% phosphorus or even 50% sediment, there is still a significant reason to use them: they perform some treatment and fit into tight sites where other BMPs cannot be installed.

Derek Berg explained that without the TP-TSS correlation written into the regulations, there will not be a demand for pretreatment devices. A committee member summarized that the demand is there to remove 10-20% phosphorus, but the manufacturers want a way to get there without going through VTAP testing. Derek Berg offered that this is why the pretreatment aspects were written into the proposed regulations, but he suggested that there were not enough discussions before the language was drafted and appeared in the proposed regulations. He suggested creating language that defines when approved pretreatment devices with TSS credit should be considered, such as upstream of infiltration or in place of forebays.

Derek Berg proposed approaches to address the issues he raised:

1. Update language to reflect the appropriate lab test protocols.
2. Choose a single process/protocol to ensure data comparability or devise a credible means to compare results across programs.
3. Clarify how pretreatment practices fit into regulatory framework, e.g., “Must pretreat to x level of TSS or if used, may reduce downstream BMP size by y.”

### MTD Scaling

The second part of Derek Berg’s presentation focused on methods used for MTD scaling. He offered that in recent years, scaling is getting more attention from agencies.

Historically hydrodynamic separator (HDS) devices were scaled using the Surface Loading Rate or some variation of Froude or Volumetric Scaling. The Surface Loading Rate offers the most conservative scaling method of the three. It assumes that the HDS maintains a constant surface loading rate across all models (measured in gpm/ft<sup>2</sup> of surface area). There are differences in opinion as to whether or not depth needs to be scaled. With the other two methods, it is assumed that depth is scaled proportionately with length and width. The Froude method is less conservative than the Surface Loading Rate method because it introduces an exponent as a multiplier – is based on an exponential increase in flow – and thus violates the assumption of a constant surface loading rate. As the model size increases, the surface loading rate increases. The Volumetric Scaling is the least conservative method of the three. It is similar to the Froude method but uses a multiplier of three (cubed, instead of raised 2.5 as in the Froude). It is based on a constant volumetric loading rate (flow rate per volume of water) and thus quickly departs from a constant surface loading rate. Agencies are moving away from the use of Froude and

Volumetric methods for HDS. They seem to have stronger support for the use of the Surface Loading Rate method or require the testing of multiple units.

Scaling for filter MTDs is less controversial because nearly all programs use surface area specific loading rate per media surface area (gpm/ft<sup>2</sup>), and most agencies support the use of the surface area specific loading rate. It is important when scaling for filter MTDs to pay attention to the ratio of filter surface area to settling area and/or sump volume, and agencies are keying into this importance. Therefore, in addition to keeping the surface area specific loading rate constant, some agencies are mandating consistent ratios of settling area to filter area and consistent sump volume to filter area.

A committee member proposed that the Clearinghouse Committee consider making presentations on design issues, scaling, etc. as part of each meeting. He expressed that the committee members have an obligation to get up to speed on these types of issues prior to making recommendations. David Sample voiced support for this suggestion.

### **Presentation and Discussion: Approval of Multiple BMP Model Configurations within the VTAP Evaluation Process**

Chris French represented SWEMA in voicing concerns that the VTAP makes no mention of whether or not different model configurations would need to be tested and approved for use in Virginia. As background to the discussion, Chris explained that manufacturers have multiple model configurations, often both offline and online configurations, because different model configurations provide flexibility to treat stormwater through a variety of collection options. He showed a couple examples of different configurations sometimes used. Currently, the VTAP is silent on the issue, and there is no policy statement from the BMP Clearinghouse Committee or DCR regarding how to handle multiple configurations. Chris offered that because the cost for field testing ranges from \$250,000 to \$500,000 per site, field testing multiple configurations would become cost prohibitive. Chris stated this issue will have bearing on the recently completed economic analysis to support the VTAP regulations if it is determined that different model configurations, which utilize the same technology, would need to be tested individually. Furthermore, SWEMA is concerned that localities may, at their discretion, reject the use of an approved technology with a different configuration as a result.

SWEMA recommends that the BMP Clearinghouse Committee or DCR develop a policy statement that accomplishes the following:

- Allows acceptance/approval of MTD model configurations based on precedence by other jurisdictions;
- Is published on the BMP Clearinghouse website; and
- Clearly communicates to all regulated entities (localities, developers, engineers, and manufacturers).

A committee member suggested that the group needs to establish the threshold for where a change goes from being a “configuration change” to a “functional change.” For example, all would likely agree there is not an issue with water entering the MTD through a ground inlet *versus* a cut inlet; this would be a configuration change. A committee member suggested that the Clearinghouse Committee could have a say in what is and is not a configuration change.

Another member stated that having to show that the laws of physics work the same regardless of the configuration is a great “out:” the manufacturer will need to show that a configuration change to the MTD will not violate the physical processes needed for the MTD to perform as intended. The first committee member suggested that manufacturers list all configurations in their application so that these can be reviewed and approved at the time of the initial evaluation. New configurations designed after the MTD has been approved could be added or be retested as a new MTD, depending on the evaluation by the Clearinghouse Committee.

Scott Crafton suggested that assuming the proposed regulations are finalized this fall, the agency could issue guidance on the regulations shortly after approval. Guidance provides clarity and consistency. Often when guidance is created, its language gets worked into the regulations when they are updated. There was general consensus that guidance would be helpful.

### **Subcommittee Meeting: Evaluation of Non-proprietary BMPs**

Scott Crafton summarized the discussions from the March 20, 2013 subcommittee meeting to consider the evaluation process for non-proprietary BMPs. The subcommittee is charged with developing a general evaluation protocol to follow for assessing the performance of non-proprietary BMPs. Scott stated that DCR does not believe that non-proprietary BMPs need to undergo the same level of testing as proprietary BMPs for two main reasons: (1) much data already exists on the performance of non-proprietary BMPs, and (2) there is no profit motive for having such BMPs approved as there is with proprietary BMPs, and since no one “owns” these BMPs, no one is likely to step forward as an advocate for their approval or update or to spend the amount of money necessary to test them through the VTAP process. The proposed fast track regulations allow for DCR to rely on the work by the CWP, Chesapeake Stormwater Network (CSN), the Chesapeake Bay Program (CBP), and other sources in assigning pollutant removal credits to these BMPs.

Scott Crafton explained that the CBP plans to continue its work beyond the period of the Bay TMDL (total maximum daily load) because its efforts are no longer limited to the TMDL. The work of the recent review panels has improved in quality, as the panels are incorporating extensive literature reviews and receiving input from PhDs. The CBP plans to simply evaluate non-proprietary BMPs and allow states to handle the proprietary BMPs. They may develop categories, such as filtering devices or hydrodynamic separators, but they will not evaluate specific products.

A representative of SWEMA added that the Association has been talking with EPA about establishing a national protocol. The Water Environment Federation (WEF) plans to head up the development of a white paper, expected to be completed in the next three to six months. At this time, it is open ended as to whether or not the protocol will be for both proprietary and non-proprietary BMPs.

Scott Crafton characterized the framework for evaluating non-proprietary BMPs as a “moving target.” He added that DCR does not want to recreate the wheel.

Scott Crafton explained that the subcommittee members discussed many issues related to the development of a protocol for assessing non-proprietary BMPs and a proposed checklist

developed by David Sample that outlines information to be included in an application for assessing non-proprietary BMPs. For example, the subcommittee discussed a management BMP (*Phragmites* harvesting) and a flow control device (Thirsty Duck) seeking listing on the Clearinghouse website. The subcommittee recommended that *Phragmites* harvesting could be useful for meeting TMDLs but should apply through the CBP for approval instead of the Clearinghouse Committee. The subcommittee recommended that because Thirsty Duck is not a BMP treatment device, it does not need to go through the approval process.

Scott Crafton explained that the current stormwater regulations allow the use of innovative and alternative BMPs not listed in the 1999 Stormwater Handbook.

NOTE: Section 4VAC50-60-96 (Water quality) of the Virginia Stormwater Management Regulations states that “[i]nnovative or alternate BMPs not included in this table may be allowed at the discretion of the VSMP [Virginia Stormwater Management Program] authority. Innovative or alternate BMPs not included in this table that target appropriate nonpoint source pollution other than phosphorous may be allowed at the discretion of the VSMP authority.” Until July 1, 2014, this means that the Department, as the VSMP authority, has sole discretion over such decisions.

DCR also has unofficial guidance that hydrodynamic separators not listed in the Handbook may receive 15-20% TP removal credit like those listed in the Handbook, and filtering devices not in the Handbook can claim the 50% TP removal of those listed in the Handbook. This guidance only applies until July 1, 2014 unless they are part of a grandfathered project. After July 1, 2014, the new regulations go into effect, and the new regulations state that only BMPs listed on the Clearinghouse website are allowed to be used.

Ginny Snead stated that DCR has guidance on its website regarding grandfathered projects (those with site plans approved by DCR prior to July 1, 2012). She noted that some plans denote specific treatment devices, and these devices would be recognized at the current treatment level (e.g., 50% TP removal) past the July 1, 2014 deadline.

Scott Crafton stated that the subcommittee recommended posting a guidance document that explains the processes summarized above and explains how BMPs get listed on the Clearinghouse website. The subcommittee recommended that the policy statement addresses the following:

- i. The acceptable use of alternative BMPs (those not included in the Handbook or Technical Bulletins) until July 1, 2014;
- ii. Which BMPs must enter the evaluation process and which do not;
- iii. When those not needing to enter the evaluation process may be used in Virginia after July 1, 2014;
- iii. The relationship with decisions made by the Chesapeake Bay Program BMP Verification Review Panels.

A discussion ensued regarding the treatment of grandfathered devices and practices approved prior to July 1, 2014. Scott Crafton explained that approved devices and practices would get the credit assigned to them and hold onto this credit pending inspections and verification, which for localities under the CBP is proposed to occur at the end of the second permit cycle (the

regulations require inspections every three to five years, but as proposed by the CBP at this time, localities are not required to report their findings in the first inspection cycle). For projects reported to the CBP, EPA grants one year to fix issues found during the verification period. If the BMP cannot be fixed, the locality can no longer take credit for it. Scott Crafton proposed that MTDs awarded a pilot use designation or conditional use designation would keep the credits assigned to them; adjustments in the credits awarded, either up or down, would occur at the end of the assessment period. A committee member noted that while DCR may acknowledge what it approved, EPA may not, and that could cause issues for MS4 localities.

Scott Crafton explained that the subcommittee discussed possible ways to fund the evaluation of non-proprietary BMPs. One suggested method to support testing of non-proprietary BMPs would follow the Washington state model whereby Phase I MS4 communities could be required to test a non-proprietary BMP of their choice during each permit cycle, as a way of getting non-proprietary BMPs tested to the VTAP standard. Scott added that SWEMA appears to be in support of such an approach, but he was not sure that the Virginia Association of Counties (VACo) and the Virginia Municipal League (VML) would support it. Scott added that the Land Development Design Institute, a collaborative effort of the Virginia Department of Civil & Environmental Engineering at Virginia Tech and development industry practitioners, approached Melanie Davenport about establishing a research consortium. They would want funding assistance from the General Assembly to kick start such a program. All of that is up in the air at this time.

A member of the public asked if DCR will be issuing a policy statement as suggested by the subcommittee, and Scott Crafton replied that it is the agency's intent to do so. Scott offered to notify SWEMA when the statement had been drafted and to post it on the Clearinghouse website.

A committee member asked when the next subcommittee is scheduled to meet, and Scott Crafton explained that it would need to be after the move to DEQ, so after July 1, 2013.

### **Next Meeting Dates**

The upcoming meetings were announced. Scott Crafton explained that David Sample has a conflict with the July meeting and proposed that the date be changed if agreeable to the majority of committee members. Jane Walker offered to poll the committee members for an alternative meeting date. The upcoming fall and winter meetings are scheduled for October 28, 2013 and January 27, 2014, respectively.

### **General Comments**

Scott Crafton announced that Ryan Janoch will be stepping down as SWEMA's representative on the Clearinghouse Committee following the October 2013 meeting. David Sample announced that he has convened an academic panel to address the protocol for evaluating non-proprietary BMPs.

### **Adjourn**

With no further business, Scott Crafton adjourned the meeting.