

ASCE/EWRI
Task Committee on Certification Guidelines for Stormwater Manufactured BMPs
Meeting Minutes (draft)
May 16, 2008 (Friday)
Hilton Hawaiian Village, Honolulu Room
Honolulu, HI
6-9 pm

In attendance:

de Bruijn, Hans*	Lenhart, James (Jim) H.
Bryant, Graham*	Davis, Matthew (Matt) D.
England, Gordon *	Guo, Qizhong (George)
Gulliver, John S.	Stein, Walt
Hunt, William (Bill) F.	Wu, Jy S.*
Kim, Jong-Yeop (for Sansalone, John)	Osei, Kwabena
McDonald, Jonathan (Jon)	Karimipour, Shohrah *
Mohseni, Omid	Roseen, Robert (Rob) M.
Clark, Shirley E.	Rangarajan, Sri
Johnston, Charlene E. **	Betty Rushton**
Jacobs, Tom ***	Anderson, Mathew***
Baldwin, Lily ***	

* On the phone

** Additional members attended the committee conference session (the first part of the committee meeting), 1:30-3:00 p.m.

*** Non-members attended the committee conference session as well as expressed an interest in being on the committee mailing list

The Afternoon Conference Session (The First Part of Committee Meeting):

(The notes taken by Charlene Johnston)

George Guo of Rutgers University introduced himself and 4 additional presenters (Dr. Roseen, Dr. Kim, Dr. John Gulliver, and Dr. Bill Hunt). Each presentation is available on the TC website (<http://watertech.rutgers.edu>).

1. George Guo (Rutgers University) presented "Development of Certification Guidelines for Manufactured Stormwater BMPs." Mr. Guo presentation was a progress report for the Committee.
 - a. Objectives: review existing verification/certification programs, seek input on methods from a variety of stakeholders, and develop new guidelines for verification/certification
 - b. May 2007: Kickoff Committee Meeting
 - c. 6 Subcommittees formed: Laboratory Testing, Field Testing, Scaling, Data Evaluation, Data Reporting, Maintenance

- d. Subcommittees have met independently and reviewed existing certification procedures and protocols: NJ TARP, WDC & WDNR 2007, etc.
 - e. Discussion about the absence of lab testing protocols for filtration devices. NJ has a draft protocol.
2. Rob Roseen (University of New Hampshire) presented "Data Reporting Guidelines for Certification of Manufactured Stormwater BMPs"
- a. Subcommittee report on Data Reporting for the Guidelines
 - b. Objective: consistent data reporting guidelines to be used when reporting to regulatory agencies.
 - c. Factors: testing environment, experimental design, testing methodologies, statistical analysis, and data presentation.
 - d. Subcommittee completed: review of existing protocols (TARP, TAPE, etc.), consensus on a reporting framework, paper to EWRI
 - e. TAPE considered very good starting place for data reporting
3. Dr. Kim (University of Florida) presented "Field Verification of Manufactured BMPs Subject to Rainfall-Runoff Loadings"
- a. Presented on behalf of John Sansalone's Subcommittee, Field Testing.
 - b. Each watershed is different and unique with respect to BMP loadings of hydrologic, chemical, biological, and particulate matter quantities
 - c. Must collect sufficient representative data
 - d. Very disparate methodologies of particulate matter protocols: range from gravimetric index tests, TSS to SSC to particle size distributions (PSDs)
 - e. Auto sampler usually cannot sample entire gradation of particles, especially large particulate matter that settles
 - f. Leaning towards use of PSDs: entire gradation of PM should be representatively characterized for a BMP, in particular the suspended fraction
4. Dr. Gulliver (University of Minnesota) presented "Scaling relations for manufactured stormwater BMPs"
- a. Subcommittee report on Scaling
 - b. Experimental tests need to be scaled to another size of device in order to meet demand
 - c. 3 scaling issues to be addressed for hydrodynamic separators:
 - i. settling of heavier-than-water particles out of the flow
 - ii. rise of lighter-than-water compounds such as oils and trash out of the flow field
 - iii. tendency to entrain in high flow (after separation accomplished)
 - iv. Pressure differential effects for filter operations
 - d. Recommends similitude
 - e. Scour is next challenge

Discussion: Jim Lenhart suggests that an aspect ratio be held. Dr. Gulliver reminded the group that a scaling criterion is not used to design the device but to scale up an already designed device.

5. Bill Hunt (North Carolina State University) presented "Inspection and Maintenance Guidance for Manufactured BMPs"
 - a. All but one member convened in Raleigh for a meeting to discuss the maintenance needs of manufactured stormwater BMPs
 - b. 7 major topics selected during that meeting were included in the paper:
 - i. designing for maintenance
 - ii. defining standard maintenance triggers
 - iii. defining maintenance fundamentals for all manufactured BMPs
 - iv. defining maintenance tasks by BMP design
 - v. identifying entities best able to maintain manufactured BMPs, and training requirements
 - vi. identifying entities to train maintenance providers
 - vii. reviewing recommended disposal techniques for captured pollutants

Discussion: Jim Lenhart warned about heavy duty requirements on the disposal of residues and decanting. Recommended noting residues should be removed for disposal at permitted landfill.

The Evening Meeting:

(The notes taken by Jon McDonald)

1. Introductions
2. Review of Purpose and Objectives

Committee Purpose (for publication in *ASCE Official Register*)

The proposed task committee will review existing certification programs for various manufactured stormwater Best Management Practices (BMPs) and seek input on certification methods and content from a variety of stakeholders including but not limited to engineers, scientists, regulators, manufacturers, vendors, and owners. This review and input will be used to develop new guidelines. The issues to be considered will include laboratory testing methods, field monitoring requirements, performance criteria, design flows or volumes, scaling laws, maintenance procedures and schedules, and other issues of relevance and importance.

Committee Objectives (Publication or other end product)

A document of developed guidelines (a technical guidance manual) will be published by ASCE. Intermediate and final products will be presented at the ASCE/EWRI Congress and possibly other professional meetings, and will be published in peer reviewed ASCE journals as well.

3. Review of Milestone Dates

George Guo reviewed the Task Committee timeline --

- Year 1: Review existing info and determine work plan/synergies
- Year 2: Work on guidelines
 - First 6 months (May-Oct): Produce draft
 - Second 6 months (Nov-Apr): Send out for comment, finalize

EWRI 2009 Congress abstracts concerning guidelines due in September.

4. Reports from Entire Committee and Six Subcommittees

Presented at afternoon session:

- George Guo – Entire Committee
- Robert Roseen -- Data Reporting
- Jong-Yeop Kim -- Field Monitoring
- John Gulliver – Scaling
- William Hunt – Maintenance

Hans de Bruijn, Tom McGuire (MASSDEP) submitted written comments on papers to George Guo.

Comments on papers requested ASAP – due date July 10. George Guo to send e-mail reminder.

Field Monitoring (captured discussion points):

De Bruijn, Bryant, England -- Field monitoring includes too many variables, no calibration for practical implementation.

Lenhart -- Modified protocol for field monitoring (excluding TSS) might be feasible – use lab testing for initial product variability

Roseen -- Lab testing needed for proof of concept but that variability of field necessary since all parameters can't be replicated in the lab. Should build from existing protocols to make as feasible as possible.

England -- Field data can be inconclusive and an undue financial burden on manufacturers if meaningful data not obtained. Need to look at gross solids sampling protocol to tie observations of collected sediments to TSS measurements. Sediments collected in the field are generally not measured by autosamplers.

Lenhart -- Protocol just needs to be changed for HD seps to reflect capability.

Hunt -- Certain jurisdictions mandate field monitoring.

Guo -- Encourages Kim (for Sansalone) to start from existing protocol, i.e., revised NJ protocol.

Kim -- Manual sampling to verify pollutant load may be necessary, maybe can't recommend that others do the same if not research. Need to make more feasible, simple and cost effective.

Roseen -- Consensus needed from all stakeholders.

England -- Difficulty of setting standards that will be accepted widely – give option for lab testing without field monitoring.

Bryant -- WI and ETV moving toward lab testing to simplify certification.
Lenhart -- More fundamental issue is that WI decided that HD seps are good for gross solids not "TSS."
Osei -- Questions whether TSS is appropriate method/measure.
Roseen -- TSS is defined by EPA.
Guo -- WERF report may help in extending measurable suspended solids.
Gulliver -- Monitoring is about watershed as much as about manufactured device. Only lab has accuracy required to determine what device is doing.
Roseen: -- Can do PSD on field samples as well.
Guo -- Need to characterize what's coming in.
Roseen -- Autosampler won't catch effluent above 250 um anyway, and PSD not economical.
Lenhart -- Need to be able to satisfy both. Use separate protocol for HD seps as pretreatment.
Osei -- Field subcommittee will decide what's needed, but perhaps can educate and change regulations.
Guo -- Need to focus on how to gather performance information on different sizes of solids so that agencies can make their own decision.
Lenhart -- Ideal is for committee to become steering committee for EPA recognized protocols.
Stein -- Field data not transferable to other sites, but can serve as model validation for lab data.

Data Analysis/Interpretation (captured discussion points):

Lenhart -- Heavy statistics in Clark draft report, should simplify for application. Address irreducible concentrations, % removals and % load reduction. Lenhart paper covering simpler approach – BMP expectation functions.

Lab Testing (captured discussion points):

Guo -- Mohseni to present on subcommittee; need EWRI result as well as ASTM work.
Mohseni -- Will distribute protocol review summary for discussion following EWRI. Mohseni presentation on ASTM C27.70...
Guo -- Need to go beyond evaluation of lab test protocols for HD seps to address filters.
Osei -- Scouring to be part of EWRI effort regardless of ASTM.

Data Reporting (captured discussion points):

Suggestion to include an appendix with a sample data reporting format in guidelines.

Miscellaneous (captured discussion points):

Wu -- Biological TP uptake etc. may be explored through field monitoring; large particles at influent not captured in samplers; field verification should be considered; look at watershed approach rather than just small units.

5. Review of Progress Made in the Past Year (including summary papers presented)

Covered previously.

6. Plans for Next Year's Activities

Need draft deliverable from each subcommittee within 6 months.

7. Draft Final Deliverables

Within 6 months.

8. EWRI 2009

EWRI scheduled for Kansas City, May 2009.

Need to submit abstracts for subcommittee presentations by Sep. 2008, papers by Jan. 2009.

Osei – next committee meeting (at EWRI) should occur prior to subcommittee presentations.

EWRI '09 will cover only environmental subjects. IAHR '09 in Vancouver will cover hydraulics. Suggestion made to also present at IAHR.

9. Other Items

None.

10. Next Meeting/Conference Call

Conference call TBD in 1-2 months.

Action Items

1. Guo to send e-mail reminder to full committee that comments on EWRI '08 subcommittee papers are due by July 10.
2. Guo to schedule conference call in 1-2 months.
3. Subcommittees to draft guidelines by Sep. 2008.
4. Subcommittee chairs to submit EWRI '09 abstracts by Sep. 2008, papers by Jan. 2009.