

ASCE/EWRI Task Committee on  
Guidelines for Certification of Manufactured Stormwater BMPs

Meeting Minutes  
May 16, 2007

Attendees

Jeffrey Benty, Yuan Cheng, Shirley E. Clark, Hans DeBruijn, Gordon England, Qizhong (George) Guo, John S. Gulliver, William F. Hunt, Charlene Johnston, Uday Khambhammettu, James H. Lenhart, Jonathan McDonald, Omid Mohseni, Kwabena Osei, Scott Perry, Sri Rangarajan, Robert M. Roseen, Betty Rushton, John J. Sansalone, Scott Struck, Tim Williams; Brian Roberts, Walt Stein, Fariar Kohzad, Raymond Hozalski, Jon Hathaway, Linda Pechacek, David Dee (TAC ExCom member).

Phone conference participants were as follows: Mark Miller of AquaShield, Don Wade of Magruder Construction, Shohreh Karimipour of NY DEC-Albany, and Ravi Patraju of NJ DEP.

George Guo of Rutgers University kicked off the meeting.

Committee Statistics

Prior to the meeting the enrollment was at 45 committee members, the statistics are as follows:

- 13 Universities
- 11 Government
- 11 Consultants
- 10 Manufacturers/Working for Vendors

Review of Purpose and Objective

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.

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.

Review of Milestone Dates

- May 2007: Kickoff Committee Meeting (this meeting)
- October 2007: Complete review of existing certification programs
- May 2008: Identify new development needs. Present session at 2008 ASCE/EWRI Congress in Hawaii
- October 2008: Complete preliminary development of new guidelines

May 2009: Complete final development of the new guidelines.  
Present a session or paper at 2009 ASCE/EWRI Congress.  
New guidelines document will be published by ASCE and a peer-reviewed journal paper will be prepared and submitted to ASCE.

#### Development of Scope of Work

Mr. Guo opened the meeting up to discussion to develop the scope of work. Comments made by attendees are as follows:

- Future regulations will likely include pollutants outside of the TSS parameter
- We must be careful that we only have 2 years to resolve this mission, watch for scope creep
- Provide guidance to regulatory agencies on how to determine limits
- Unresolved problems with TSS and SSC
- Larry Roesner, WERF just completed report on solids
- We should rely upon work done by others previously
- Get handle on solids/particle size distribution
- Gross Solids Committee is finalizing the gross solids monitoring guidelines
- Develop uniform method, different methods produce different output
- Measurement problems with sampling
- Leave sizing to the agencies because of different regional differences
- Start with WERF particle size guidelines (full spectrum of solids)
- Can't buy 20 micron material, look to commercially graded materials for testing
- When tested, particle removal is tested at a constant, established flow rate
- It is hard to use one flow rate given that different devices respond differently within certain ranges, loading rates
- It is possible to come up with some sort of performance, based on uniform loading rates
- Look at the mass loading going thru the devices
- Possible problems with mass loading related to PSD, spikes, first flush
- Particle separation is a unit operation (not a chemical, biological process)
- Suggest two subcommittees: front end testing and back end evaluation of data

Mr. Guo asked if we had consensus on focusing on particle physical separation?

- Discussion over whether particle separation was appropriate to describe both the unit processes: hydrodynamic separators and filtration
- Guidelines have to provide loading rate
- Loading rate varies per technologies, but reporting nomenclature does not have to vary

The consensus was to focus on physical separation of particles (the full spectrum of stormwater-borne non-dissolved solids).

A question was posed inquiring what the guidelines are achieving: Are we letting the regulatory agencies or are we certifying?

Mr. Guo answered that guidelines are meant to let regulatory agencies develop their own certification program.

Further discussion:

- What are we incorporating into our scope: interpret or dictate
- Letting regulators write their own certification program can be difficult

- Standard reporting protocol suggested for how they evaluate
- NY DEC just went thru new certification programs, trying to adopt from established certification programs with inconsistencies/discrepancies with the protocols
- Field work if you remove material to find out what the contents are before it goes through the system, that provides a bias
- Humungous errors occur in the field
- How are the results reported, include in our scope a defined loading rate (allow scaling)
- Laboratory versus field testing, many issues to consider
- Subcommittee could focus on different testing issues
- Model tests in the lab, may not be transferable (not same removal efficiencies)

### Formation of Subgroups

- Important functions: scaling, lab protocol, field sampling, particle size distribution
- Suggest subcommittees as follows: Lab testing, Scale Up, Field Testing, Data Evaluation/Interpretation, Maintenance
- Worried that leaves/litter will be excluded from testing, because they are definitely getting into the unit process
- University of Minnesota has done field testing replicating lab testing
- Use e-mails/e-rooms to discuss within subcommittee
- Consider opportunity for every subcommittee to make presentation (next year)
- Lab test group should deal with scaling, those go hand in hand
- Certain lab tests are full scale, appropriate test
- Lab tests are mostly done on smaller scale device, have to scale up
- Test one real model, then scale up
- Hydraulics/similitude verify but scaling is a big issue into itself...magnitude of the issue should be a separate subcommittee
- Comes down to an issue of synthesis, because similitude with particles has been studied for many years
- More solid guidelines needed on how to keep track of the maintenance
- Give Public Work Director guidelines to know how often to maintain systems
- Add a Subcommittee: standard nomenclature
- Recommend Metcalf and Eddy for standard nomenclature
- Add a Reporting Subcommittee with definitions, content, here's what you have to be provided
- ASTM uses format that could be referenced
- Chair of ASTM asked Ernie Carrasco to report back on this Task Committee's progress
- This committee would like to work together with ASTM
- ASTM is good at procedures, test methods...our value is in understanding the science

### How can we interact with ASTM?

- It is early on both sides (ASTM and this Task Committee), ASTM doesn't have clear direction which way they are going.
- Typically, takes them 3-5 years to do a standard.
- We would produce a product that they can consider for their standard.
- Suggest that we add to our scope that we keep ASTM informed
- Do we need to attend a committee meeting
- Do we want to be consistent with them? Yes. Official Liaison: Ernie Carrasco

The group summarized. At this point, the subcommittees needed are as follows:

## Lab testing, Scale Up, Field Testing, Data Evaluation/Interpretation, Maintenance, Data Reporting

- Scour needs to be included
- Scour issues can be handled in lab testing and maintenance subcommittees
- Agreement.

Mr. Guo asked are we missing anything?

- There ought to be a section that helps regulators with the programmatic function
- TAPE established but issues with conducting and executing their program
- Key people leave and program starts to fall apart
- Agreement. We need guidance on how to execute program
- Data reporting has to be simple enough that it doesn't take a scientist to review it; keep it simple
- Disagreement: simplicity got us into the TSS/SSC problem
- Boil fundamental science down to be easy to interpret
- Typical reports include executive report to boil down the process
- International BMP database only accepts 3<sup>rd</sup> party studies. Suggest set up a program that allows 1<sup>st</sup> party studies, if defensible with peer review level work
- Haven't got a good grip on evaluating performance. Be careful that it can't be interpreted in a loose sense. Interpret applicable to them but don't think go to extent that we simplify and lose technical info
- The way around this problem is to provide examples on how to use the data.
- Agreement. Provide examples
- Provide reams of data but end interpretation needs to be relatively simple, so it doesn't take a PhD in the office to interpret the guidelines
- End product, needs to be a useable tool, audience down to the county level
- Useable such that it will be adopted nationwide and implementable
- Disagreement: Washington and TARP process being adopted across the US
- Regulators are eager to adopt. Nobody wants to start something new
- TAPE and TARP have problems though, and we don't want the problems repeated elsewhere
- A literature search is part of this scope
- Backing of ASCE/EWRI will make it easier to get guidelines adopted
- Want to develop a technical guidance document with the ASCE/EWRI name on it, but not viewed as a standard guidance (don't want to be on the front line)
- Again, these are guidelines
- Indications of trouble with wording in the title
- Again, this is a guideline to help agencies for their certification process. This is not supplying certification

### Task Assignments

Shohreh Karimipour: Data evaluation and lab testing

Betty Rushton: Field testing

Sri Rangarajan: Review

Charlene Johnston: Data reporting

John Gulliver: Field testing

Rob Roseen: Field testing and data reporting

Jon McDonald: Laboratory testing and evaluation

Omid Mohseni: Laboratory testing and maintenance

Uday Khambhammettu: Field testing and data evaluation

Hans de Bruijn: Laboratory testing and maintenance  
John Sansalone: Field testing and scale up  
Walt Stein: Reporting  
Shirley Clark: Laboratory testing and data interpretation  
Scott Perry: Laboratory testing and maintenance  
Kwabena Osei: Laboratory testing and scaling  
Jeff Benty: Field testing  
Bill Hunt: Field testing and data reporting  
Ernie Carrasco: Field testing, data reporting, data evaluation  
Yuan Cheng: Reporting  
Jon Hathaway: Field testing  
Jim Lenhart: Field testing and data evaluation  
Mark Miller: Laboratory testing, field testing, maintenance  
Fariar Kohzad: Laboratory testing  
Gordon England: Maintenance  
George Guo: Scaling, maintenance  
Tim Williams: Reporting, laboratory testing, field testing

#### Chairs of the Subcommittees

Laboratory Testing: Omid Mohseni  
Scale Up: John Gulliver  
Field Testing: John Sansalone  
Data Evaluation: Shirley Clark  
Data Reporting: Rob Roseen  
Maintenance: Bill Hunt

#### New Member Recruitments

Mr. Guo reminded the group that we need to keep the subcommittees balanced (academics, consultants, regulators, and vendors/manufacturers), so no subcommittee or the overall committee is biased towards one group.

Some members are on our Committee list for review. We will allow additional people as needed but new member recruitment will come through officers as a draft.

It may make sense to recruit people from commercial lab from analytical lab. We will handle this on an as needed basis.

#### Communication, Venue, Frequency

Communications: George will explore how he can put the information on a website/FTP site. Control group members (subcommittee chairs and officers) commit to a conference call every 2 months to begin and adjust as needed. Subcommittees can have separate phone conferences as needed. Potential for a meeting and phone conference at StormCon.

2008 Congress: Control group members must attend 2008 Congress. One member of each subcommittee should present a paper on their progress. Propose 2 sessions under

Richard Fields' Urban Watershed Symposium (may need to place hold for the subcommittees). 8 papers: 6 subcommittee papers, one overview paper (officers), and one other paper. By June 29<sup>th</sup>, we have to give name of sessions for 2008 congress to EWRI.

#### Confirmation of Officers and Control Group Members

Mr. Guo named the existing officers as George Guo, Chair; Gordon England, Vice Chair; Charlene Johnston, Secretary. Mr. Guo explained officers were selected during Stormwater Infrastructure Committee phone conference to be able to submit the proposal to the Exec Committee. This is a Task Committee not a standing committee. The positions can be rescinded.

Jim Lenhart moved that the existing officers remain. Shirley Clark seconded the motion. The motion passed.

Mr. Guo explained the budget was \$2,500. This money is ear marked for travel for control members. An officer is an automatic control group member. There is a per diem \$100 (for one night hotel) and flight reimbursement available. People who are doing the work will be control members. 9 control members: 6 subcommittee chairs and 3 officers

#### Other Items

Liaisons:

Jim Lenhart, Liaison WERF

Ernie Carnasco, Liaison ASTM

Get the word out: Encourage members to present to other organizations/conferences. Beware of the copyright issue with ASCE; if you submit a paper and rewrite, it must be revised by at least 40%. Use StormCon as an opportunity to announce what's coming.

Use NextMeeting to schedule future phone conferences.

#### To Do

- Each subcommittee will provide the officers with an outline by July 2<sup>nd</sup>
- First Committee phone conference call: July 20<sup>th</sup>, 1 PM EST
- Presenters at StormCon will get the word out, including Larry Roesner, Gordon England, and Rob Roseen's group.
- The officers will write an article for Stormwater.
- Next meeting in Hawaii (finished by 8 PM EST, prefer an early morning time slot)