



# UNIVERSITY OF MASSACHUSETTS AT AMHERST

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## MASTEP Technology Review

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**Technology Name:** Abtech Smart Sponge

**Studies Reviewed:** Evaluating the Stormwater Treatment Performance of AbTech Industries Smart Sponge Plus in Seabrook, New Hampshire; Effectiveness Evaluation of Stormwater Management Improvements, Scarborough Beach State Park Narragansett, Rhode Island; Environmental Technology Verification Report of the Low Cost BMP Study; Saint Claire Shores Catch Basin Insert Evaluation Project  
Laboratory Evaluation of Four Storm Drain Inlet Filters

**Date:** 12/08/2007

**Reviewer:** Jerry Schoen

**Rating:** 2

**Brief rationale for rating:** This rating is based primarily on the New Hampshire study, which was a well-organized field study. The primary deficiency in this study is that an insufficient amount of rainfall was captured over the course of the study to satisfy TARP protocols. The Rhode Island Study tested a unit that was extremely undersized: the amount of water flowing through the system amounted to only a few per cent of overall storm or base flow. Consequently, evaluation of the effectiveness of the system as a treatment strategy is not practical based on the RI study. The Low Cost BMP study did not provide sufficient information on influent particle size, flow rates or the impact of bypass to provide valid pollution removal efficiency data. Quality control problems encountered in the other studies limit their value for performance evaluation.

**TARP Requirements Not Met:** (referencing the New Hampshire study)

- *At least 50% of annual rainfall must be sampled.* Only 18% was sampled.
- *Minimum of 15" of precipitation must be sampled.* Only 8.39" was sampled.
- *Storm events should be consecutive where practicable.* No sampling was conducted from December 4 – March 31.
- Some sampling must be done under adverse weather conditions (spring snowmelt, heavy rainfall). No evidence of this. No snowmelt, no large storm (largest was 1.13" in 3 hours)

**Other Comments:**

- This product (Smart Sponge) is intended to remove bacteria and oil and grease. Both studies tested the anti-microbial filter media used for bacteria removal. In the New Hampshire study, Smart Sponge media was placed in an existing water quality inlet. In the Rhode Island study, the material was tested in two different configurations: packed in drainage pipes and in an Ultra-Urban Filter (a catch basin insert manufactured by Abtech). The Rhode Island study contains some useful information on packing densities for the drainage pipe configuration.
- Both the NH and RI study reports provided supporting quality control data.
- The Low Cost BMP study was conducted on 4 catch basin inserts, including the Abtech Ultra Urban Filter, Catch Basin Insert filter configuration. In addition to TSS, it tested removal of total petroleum hydrocarbons and dissolved zinc. This study did include an observational field monitoring component that generated helpful qualitative information on maintenance questions. It also contains cost information.

