COMPARISON OF STORMWATER SOLIDS ANALYTICAL METHODS FOR PERFORMANCE EVALUATION OF MANUFACTURED TREATMENT DEVICES

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ABSTRACT

As more manufactured stormwater treatment devices enter the market, stormwater managers are searching for effective and rapid methods for evaluating device performance. Many agencies require vendors to test full-scale versions of their devices under controlled conditions. The most common parameter used to document performance is suspended solids for several reasons: (1) many pollutants attach to solids, (2) a solids simulant is relatively easy to generate, and (3) solids are comparatively easy and inexpensive to quantify. However, a controversy still exists in the profession and some regulatory agencies as to whether total suspended solids (TSS) or suspended sediment concentration (SSC), or both, should be measured. This paper focuses on the comparability of the two methods/protocols used for sample solids analysis, including lessons learned during recent evaluations of two manufactured treatment devices. Analysis of 215 sample pairs (where both TSS and SSC were measured on aliquots of the same sample) showed that statistically the TSS measured using the wide-bore pipet method and SSC results were indistinguishable from one another and from the original simulant mixture.