

**From:** Gary Brower  
**To:** Maguire, Marcia  
**Date:** 6/5/2007 8:49:59 AM  
**Subject:** Fwd: comment on njac 7:9b-1.4 and 1.5

Docket 11-07-04/557

>>> "wsimmons" <wsimmons@co.monmouth.nj.us> 6/4/2007 4:30 PM >>>  
Gary J. Brower , Esq.  
Attn: DEP Docket Number 18-05-06/161  
Office of Legal Affairs  
Department of Environmental Protection  
P.O. Box 402  
Trenton, NJ 08625-0402

Monday, June 04, 2007

The following are comments on Proposed Rule NJAC 7:9b-1.4 and 1.5 by the Monmouth County Health Dept (Bill Simmons, Environmental Health Coordinator).

The DEP needs to reexamine the relevancy of using TSS as the parameter of choice to evaluate chemical water quality in streams in the Inner Coastal Plain being considered for Category 1. Either the standard is set too high, or the TSS method, originally developed to measure sewer effluent, is inappropriate for surface water monitoring.

The finer the soil particle that is eroded, the more the impairment to the aquatic biology and habitat. Turbidity is the conservative parameter for freshwater streams with soils with fine clay and silt sized particles, like glauconite. Using TSS in these streams will continue to underestimate impacts from runoff because, being weight based, it ignores the biological impacts of the finer soil sizes. Several years ago the USGS determined TSS was inappropriate and stopped using it in their surface water monitoring.

Attached is an MCHD report comparing TSS to turbidity testing at its stream sampling sites which demonstrates that TSS underestimates water quality impacts in glauconitic streams in the Coastal Plain.

Sincerely,

William Simmons  
Environmental Health Coordinator  
Monmouth County Health Dept  
3435 Rt. 9  
Freehold N.J. 07748  
Phone (732)431-7456  
Fax (732)409-7579  
[wsimmons@co.monmouth.nj.us](mailto:wsimmons@co.monmouth.nj.us)

**CONFIDENTIALITY NOTICE**

This e-mail, including any attachments, may be intended solely for the personal and confidential use of the sender and recipient(s) named above. The message may include advisory, consultative and/or deliberative material of the County of Monmouth, N.J., and, as such, would be privileged and confidential and not a public document. Access to this message by anyone else is unauthorized. If you are not the intended recipient, any disclosure, copying, distribution or an action taken, or omitted to be taken in reliance on it is prohibited and may be unlawful. If you have received this e-mail in error, you must not review, transmit, convert to hard copy, copy, use or disseminate this e-mail or any attachments to it and you must delete this message. Please notify the sender by return email. Tx

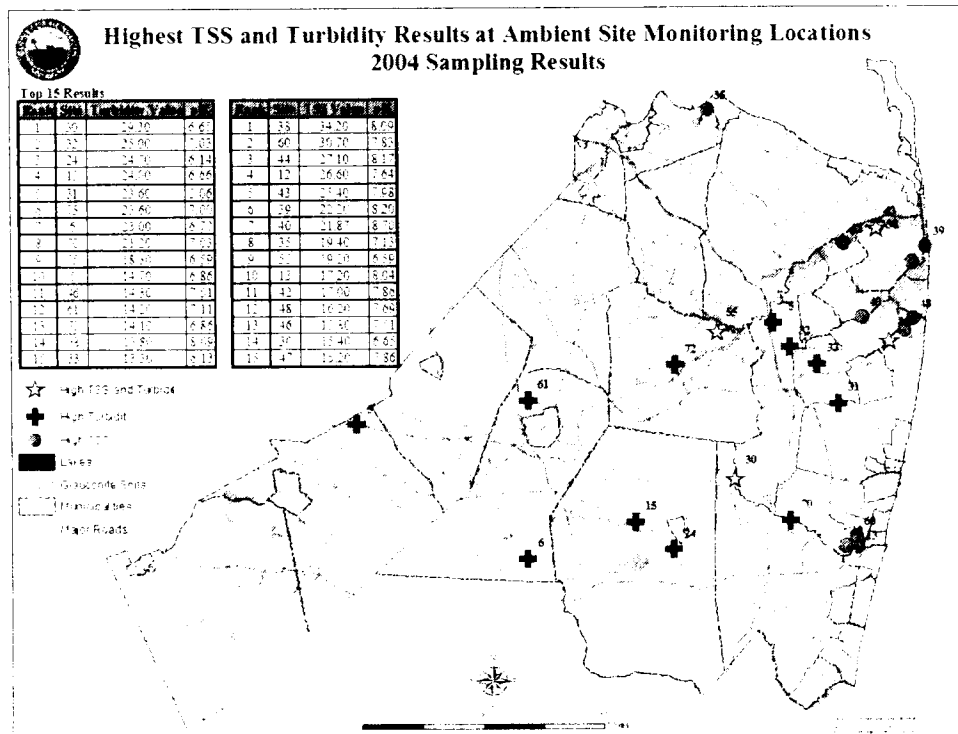
**CC:** Hammond, Debra

**MONMOUTH COUNTY HEALTH DEPARTMENT  
 COUNTY ENVIRONMENTAL HEALTH ACT  
 MCHD AMBIENT SAMPLING PROGRAM  
 2005**

Monmouth County tests 66 stream sites quarterly for various parameters, including both total suspended solids (TSS) and turbidity analysis. In 2004, the 15 highest TSS and turbidity values during dry weather were plotted over glauconitic and sandy soils on a County GIS coverage.

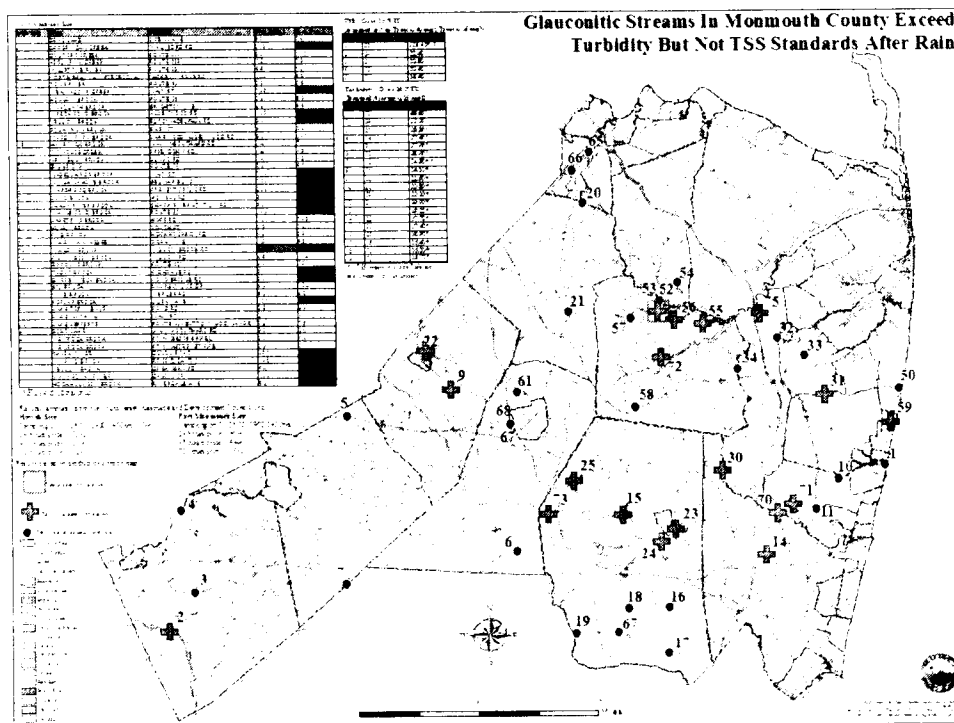
This results showed that streams in glauconitic soils had more elevated results for both tests as compared with streams in sandy soils. The glauconitic sites during dry weather had more iron floc and humates, which may be primarily characterizing the dry weather 'look' of these streams.

Almost all the TSS results that were elevated were in saline estuary sites instead of freshwater sites. It has been estimated that 80% of the soil particles discharged from freshwater into an estuary remain in the estuary because the fine particles clump together, gain mass and sink due to the ionic attraction of fine particles in saline water. TSS is a weight-based analysis.



TSS is currently used as the parameter of choice for all surface water analysis in New Jersey, regardless of the watershed's soil type. It is a weight-based analysis, with no regard for particle size (the water is dried on a filter and what is left is weighed). Turbidity measures the color of the water and so may be more suited to measuring the effects of fine particles that are colloiddally suspended and scatter light differently than larger particles.

In 2005, after reviewing the existing wet weather analysis and finding it insufficient, one day was set aside to sample all the freshwater ambients sites during a rainfall and preceded by at least one day of rain. The wet weather results (map below) showed that there were about 15 exceedences of the turbidity standard, but no valid exceedences of the TSS standard (the one TSS exceedence was about 100 units higher than the corresponding turbidity result, and is probably an artifact of sampling or analysis).



This again emphasizes the need for DEP to reexamine the relevancy of using TSS as the parameter of choice regarding watershed and BMP evaluation in streams in the Inner Coastal Plain. Either the standard is set too high, or the TSS method, originally developed to measure sewer effluent, is inappropriate for surface water monitoring.

The finer the soil particle that is eroded, the more the impairment to the aquatic biology

and habitat. Turbidity is the conservative parameter for freshwater streams with soils with fine clay and silt sized particles, like glauconite. Using TSS in these streams will continue to underestimate impacts from runoff because, being weight based, it ignores the biological impacts of the finer soil sizes. Several years ago the USGS determined TSS was inappropriate and stopped using it in their surface water monitoring.