

innovative turf solutions

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Construction Site Sediment Basins

The USEPA has developed treatment requirements to mitigate storm water contamination in the construction industry. These requirements are implemented through Best Management Practices included within the state approved Storm Water Pollution Prevention Plan (SWPPP).

The current methods of reporting within the SWPPP are collecting rain water samples during storm events at designated points on the construction site.

One of the most commonly used BMPs (Best Management Practices) are sediment ponds to slow the velocity of the stormwater in able to settle the larger sediment particulate. This BMP has been effective in reducing the turbidity (NTU) values from the runoff water, but are not efficient in removing the fines in the stormwater runoff therefore leaving high turbidity (NTU) values not meeting current limitations.

An effective BMP used to “flocculate” these fines in sediment ponds and stormwater runoff currently in use are “flocculants”. With the use of these products along with other BMPs the NTU values are able to be mitigated to be in compliance of current state limitations.

Floc Socs were installed into a sediment basin on a current North Carolina Deptment of Transportation (NCDOT) jobsite in Lee County, NC #C-202331 on August 18, 2011. Four 4 lb. Floc Socs were installed in the sediment basin. Total volume of water in the sediment pond was 4,000 gallons and filtration capacity of the Floc Bags is 4 lbs/1,000 gallons. NTU value sampling was done before installation of Floc Socs and then 24 hours after installation. Results are shown below:

NTU Value Untreated	NTU Values Treated
1040	692

NTU values were taken again in the above sediment basin on Septemeber 14, 2011. Amount of rain the basin received is unknown therefore input turbidity from the surrounding unstabilized soils is unknown. Starting turbidity reading from August 19, 2011 was then used for the beginning value on the next reading shown below.

NTU Value (8/18/11)	NTU Value (9/14/11)
692	404

The site received 1.5” of rain on Septemeber 21, 2011 and reading was taken on Septemeber 22, 2011. Site had little construction activity. Using the beginning NTU Values from Septemeber 14, 2011 readings are below:

NTU Value (9/14/11)	NTU Value (9/22/11)
404	488

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NTU Values were taken again on September 28, 2011 after a 2/10" rain event on September 27, 2011 and levels spiked to 781 (increased construction activity as contractor is placing fill in this area), reading was taken again on September 30, 2011 after another 2/10" rain event on September 28, 2011, the reading spiked to 1,530 (contractor has placed large boulders in half of the basin to accommodate fill placement). Sampling was not able to be taken again after the rain events as the basin was filled in. These numbers after the rain event although show the spike in turbidity after each rain event due to the surrounding soils and fill.

A second basin with a skimmer was treated with 8-4 lb. Flocc Socs on the same day containing 9,000 gallons of water. Turbidity readings were taken the following day as well. NTU value was 573 mg/l. Although the beginning NTU Value was not read on this basin before the installation of the Flocc Socs, all of the prior readings had been in the 1,000's.