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Innovations

In Stormwater Clarification

Shadow Hill Subdivision

Summer 2006

During the summer of 2006, Centex Homes faced a significant challenge at its Shadow Hill Subdivision in Elgin, Illinois. Ground disturbing activities at the site were impacting the clarity of surface water being discharged from the site. These activities included pond construction, underground work and landscaping.

The contractor had initially planned to pump the turbid water through a filter bag system prior to discharge from the site, but in this case, this method failed to meet the required clarity standards.

In search of a solution to this problem, Centex Homes Director of Environmental Compliance Kari Crosson contacted ERO-TEX sales representative Dan Salsinger, CPESC. Kari suggested the construction of a temporary storm water treatment channel, using APS polymers, in this case Floc Logs and Silt Stop powder, to treat the turbid water as it was being pumped.



To determine the most appropriate polymers to use, the site soil was tested. This testing helped determine the reaction time required to cause sediment to drop out of the turbid storm water. Then, after assessing the expected flow rate, the treatment channel could be designed and sized accurately.

The treatment channel was constructed eight feet wide and 150 feet long. It was lined first with geo-textile fabric, and then with a layer of jute matting. APS Floc Logs were positioned in the channel, and the jute matting was treated with APS Silt Stop powder. Construction, requiring four laborers working with a backhoe, took about one hour.

The turbid water was then pumped into the drainage channel. As the water moved through the channel, it was being treated by both the Floc Logs and the polymer treated jute matting. After treatment, the stormwater was discharged directly into the storm drain system.

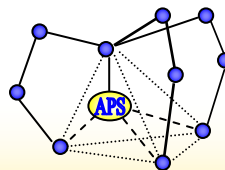
The polymers in the Floc Logs reacted with the suspended sediment in the turbid water, binding the soil particles together and allowing them to drop out of the run off. The jute matting provided a surface area for the resulting sediment to adhere to. The Silt Stop powder enhanced the soil particle collection capabilities of the jute matting, and also provided a final polishing effect by targeting fine soil particles still in suspension.



By the time the water flowed down the entire channel, the water was well within discharge clarity requirements, and with no aquatic toxicity potential, could be directed into the storm drain system with no further treatment.

Total cost of materials and installation on this project were approximately \$ 3,400. The positive results however, far out-weigh the costs. Centex Homes took a proactive approach to a difficult job-site problem, and in doing so avoided the possibilities of construction delays, fines or possible project shut down. The benefits, like the water being discharged from the site, were very clear.

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