Case Study

Building Site Run-off

Treatment Using FilterBales ® and Safe Sox®
Project Manager: The NSW Department of Public Works and Services

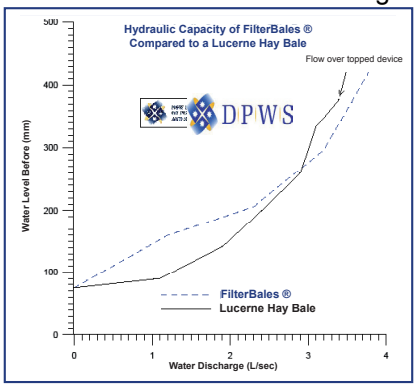
Enviro-media is a specifically engineered infiltration medium that uses selected organic matter or a blend of selected organic matter and minerals such as sand and soil that is used to physically, biologically and chemically treat contaminated air, soil and water. Treatment is achieved by physically filtering sediments and contaminants, chemically binding contaminants to organic matter and biologically degrading contaminants.

In 2000, The NSW Department of Public Works and Services took control of a development site in Bower St. Manly that had previously been fined for discharging sediment laden storm water on to nearby Fairy Bower Beach. A $1,500 fine had been imposed on the previous contractor each time an offence occurred. Recent changes under the Protection of the Environment & Operations (POE&O) Act gave responsibility of policing such offences to local councils.

With three traffic lanes each way and substantial paved surfaces, the potential for large volumes of surface run-off to cause erosion to sensitive areas is a major environmental concern. Although drainage systems are in place there are a number of areas that could have potential erosion problems. These problems were caused by the use of ineffective run-off control measures while extensive earth works were in progress. Hay bales used by the previous contractor allowed sediment to freely migrate from the construction site.

The NSW Department of Public Works and Services and it's new contractor Multiplex decided to trial FilterBales ® and Safe Sox ® as an alternative to conventional practices such as hay bales and silt fences. Before installing on-site, both parties decided to trial recycled organic products at the NSW Department of Public Works and Services Hydrology Laboratory at Manly Dam.

The laboratory testing compared the performance of FilterBales ® that use a specific type of Enviro-media as a filtration medium with the sort of hay bale generally used for erosion and sediment control. The test involved comparing the ability of each product to retain and filter sediment-laden storm water similar to that experienced on construction sites and road run-off. A rig was set up in which running water containing sediment had to pass through each product.

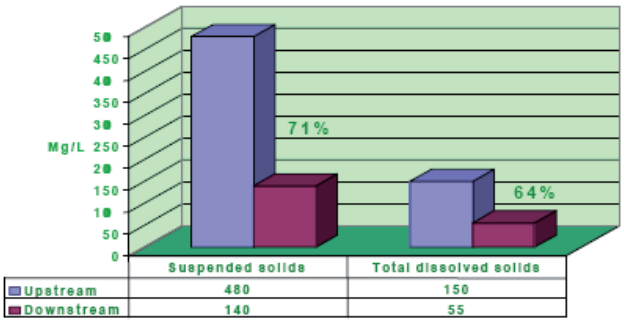


Hydraulic Performance Chart

The preceding chart indicates the ability of each product to retain water over a given period of time. The level of rose higher, earlier with the filter bale as compared with the hay bale. The results also indicate that under extreme hydrological conditions the water flowed over the top of the hay earlier than with the filter bale.

FilterBales ® are constructed of a rigid, recycled plastic frame that is resistant to deterioration and can be reused indefinitely. Safe Sox ® were also used on the site.

The following test results from Manly Hydraulics Laboratory also demonstrated the superior performance of FilterBales ® in comparison to the hay bale. The following chart illustrates the comparative removal rates of suspended and dissolved solids typically found in construction site and road run-off.



Sediment Removal Performance Chart

A visit to the testing laboratory was arranged during the Healthy Parks & Gardens Program where a demonstration trial illustrated the superiority of the recycled organics product over the hay bale. The site visit attendees, including representatives from councils, Northern Sydney Waste Board, Roads and Traffic Authority and the Department of Public Works and Services clearly witnessed how the hay bale discharged discoloured water where as the filter bale using Enviro-media discharged clear water. One of the visitors to the testing laboratory, Councillor Barbara Aird from Manly Council stated: " The demonstration clearly showed a significant difference in the water quality passing through the filter bale as opposed to the commonly used hay bale. Now that we have best practice our challenge is to make these new, environmentally superior products common practice."

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