

## **Effects of filtration using soil and fibre Mediums in improving the quality of Stormwater**

### **ABSTRACT**

Water shortage problems occurred when insufficient quantities or only poor quality of water available for consumption . In some places, while fresh water is abundantly available for domestic use, high demand at industrial site and agricultural area requires the need to investigated alternative method of treatment for non-domestic water supply. In this study, effects of treatment unit using Odec and Sulaman soils, fibre and fibre-soil combinations were investigated towards their ability to filtrate and improve the quality of stormwaters collected from SST Lake, Likas River and Odec Sea. For comparison, treatment was also conducted for soy bean water. Stormwater quality tested include the chemical oxygen demand (COD), pH, turbidity and suspended solid. It was found that Sulaman soil medium yielded 100 % removal rate of suspended solid compared to ODEC and fibre medium while fibre medium showed the least effective filter. The removal rate of COD of all medium was low. All the medium failed to filter soya water due to the high concentration of chemical compound. The study concluded that when the parameters measured is chemically-related such as COD and pH, the soil medium filter less effectively. The effectiveness in filtering non-chemical parameter such s suspended solid is affected by the grain size and distribution, texture and the structure of the mediums.