ECONOMICALLY EFFECTIVE TREATMENT METHOD TO IMPROVE THE QUALITY OF EFFLUENT OF SMALL SCALE VEHICLE SERVICE STATIONS

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by

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Abstract

Vehicle service stations are considerable waste water generators which are now increasing rapidly in number all around the world. In Sri Lanka, the treatment plants operating in these service stations functioning poorly .Specially the service stations located in the rural areas have very poor treatment methods. Present study carried out to introduce a low cost and effective simple treatment method to the effluent of small scale service stations.

In the study, characterized homogenized effluent sample collected from small scale service station was passed through Slow Sand Filter which is constructed by using sand, burnet brick clay & partially burnt rice husk. Then filtered samples were analyzed for the parameters of Chemical Oxygen Demand (COD),Biological Oxygen demand(BOD), oil and grease,Turbidity and lead concentration. Filters were operated for three different flow rates in replicates. Selected flow rates for the study are 0.69 ml/min., and 16.67ml/min. Percentage removal of oil and grease, lead and percentage reduction of COD were calculated for each flow rate.

Resulted reduction percentage of above parameters was grater at the flow rate of 0.69ml/min compare to other flow rates. Reduction percentage of COD,BOD, Oil & Grease, Turbidity and Lead are 64 %, 67.75% , 87.06% ,76.47% and 98.7%respectively. Also, results indicate that flow rate is a key parameter effect on parentage removal of Oil & Grease and Lead. Father studies are required to optimize the flow rate for maximum removal of Oil & Grease and Lead from the effluent.

KEYWORDS: Treatment of service station effluent, partially burnt rice husk as a filter media, slow sand filter.