

UNIVERSITI TEKNOLOGI MARA



LEACHETE TREATMENT BY ABSORPTION  
METHOD ; A CASE STUDY ON SEMELING  
DUMPSITE LEACHATE

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## **DECLARATION BY THE CANDIDATE**

I Norfadilah Binti Idrus, 2003479825 confirm that the work is my own and that appropriate credit has been given where reference has been made to the work of others.

\_\_\_\_\_ 9 March 2007

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## **ABSTRACT**

Absorption is a mass transfer operation in that a constituent in the liquid phase is transferred (absorbed) to the solid phase. The objectives of this research are to remove the concentration of COD, SS, Zn, Cr, color and pH in leachate by using leachate recycling method to accelerate absorption mechanisms. This treatment is important to ensure that the value of parameter fulfilled the Environment Quality (Sewage and Industrial Effluents) Regulation, 1979 based on the maximum effluent parameter limits Standard A and B. In order to achieve these objectives, the sample of leachate that was used in this treatment was taken from Semeling Dumpsite, Sungai Petani, Kedah. The process involved in this treatment is attached growth process which is one of the types of biological treatment process. The media that was used in this experiment is a low cost material which is solid waste collected from Semeling Dumpsite. Comparison between the influent and the final effluent concentration was determined to evaluate the effectiveness the solid waste as a media to treat leachate. These results indicated that this treatment can remove Zn and Cr up to 75% and SS up to 60% by comparing the influent for 1 hour detention time with final effluent for 2 hours detention time. Solid waste was not effective in order to lowering color of leachate because decaying occurs in solid waste. COD value very high although after treatment because in the new leachate it contain more organic matter and the pH value increased because it easy to degrade the organic matter. The detention time should be prolonged and additional oxygen should be provided to get better result and the pump should be operated 24 hours to ensure the treatment more effective.

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