

CLAY BARRIERS AS FINAL COVER IN LANDFILL: A LABORATORY INVESTIGATION

By

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ABSTRACT

Land filling has been the most common method of waste disposal practiced in Malaysia. However, the adverse impacts of improper land filling have become the major concern of public awareness. The purpose of this study is to determine the amount of leachate production from municipal solid waste when subjected to different thickness of clay cover and to evaluate the effectiveness of clay cover in landfills. This study involved field and laboratory activities. The municipal solid waste for laboratory work was taken from Mawar Hostel, UiTM Shah Alam. The waste collected were organic wastes such as food waste and kitchen waste. Reactors for landfill had been fabricated and experiment was conducted in Environmental Laboratory, UiTM. The wastes collected are assumed to represent composition of the worst case scenario for leachate production. A methodology was developed for conducting an experiment to collect the amount of leachate production. The results from this study show that clay cover can reduce the amount of leachate produced. At 60 mm and 30 mm clay cover, amount of leachate collected are between 1.5-8.5 ml and 2.5-9.0 ml respectively. Furthermore, it was established that clay cover is effective in reducing leachate production. The presence of clay cover, water cannot infiltrate directly into solid waste to become part of leachate.

Keyword: different thickness of clay cover, effectiveness of clay cover, worst case scenario, reducing leachate production, cannot infiltrate directly

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