

“Malam Geologis Muda IV/Young Geologist Nite IV”

Wednesday, 11th October 2000
Dept. of Geology, University of Malaya

Leaching column tests on three estuarine alluvial soils from South Wales, United Kingdom

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Laporan (Report)

In this Malam Geologis Muda IV, held at 5.00 pm at the Geology Department, University of Malaya, two speakers were down to present their findings, however, only Dr. Wan showed up.

Dr. Wan Zuhairi Wan Yaacob gave a well illustrated and informative talk on leaching column tests on three types of estuarine alluvial soils collected at active landfill sites in South Wales, United Kingdom. There was a good discussion after the presentation.

Abstrak (Abstract)

Leaching column tests have been utilised to evaluate the attenuation capacity of three types of estuarine alluvial soils collected at active landfill sites in South Wales, United Kingdom. All soils have been tested with acidified leachate spiked with Pb, Cu and Zn to provide an extreme condition for the leaching column experiments. Concentrations of Pb, Cu and Zn collected in the effluents were analysed to produce breakthrough curves, which indicated that almost 99% of these heavy metals were retained in the soils with their relative concentration values ranging from 10^{-3} to 10^{-4} . Analysis on the soil slices after the termination of the leaching column tests produced the retention and migration profiles of Pb, Cu and Zn through the soil columns. All soils retained Pb, Cu and Zn mainly at the top part of the columns. Pb showed the highest amount retained; therefore least migration through the soil columns. On the other hand, Zn showed the lowest retained, hence highest mobility through the columns. The results also showed correspond high pH values of the effluents and pore waters, which indicated good buffering capacity of the soils against extreme acidic leachate after five pore volumes of leaching.

