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Properties of a Lateritic Red Soil for Pollutant Containment

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ABSTRACT

In many regions of Brazil, lateritic clays are the natural candidates for the construction of compacted clay liners of waste disposal sites because of their availability and appropriate geotechnical characteristics. Lateritic soils have been extensively used in recent decades in dam and road construction, but little is known about the migration of pollutants through compacted layers of such soils. This paper describes the characteristics of a lateritic clay, representing a group of soils of significant occurrence in the State of São Paulo, to be employed in a clay liner of a waste disposal site. Laboratory tests to assess permeability, adsorption and diffusion of six metals through the compacted soil showed that permeability criterion may be met in the field, that the soil presents a modest capacity to retain cadmium and that constituent metal oxides may be dissolved from the soil grains by acidic solutions.

KEYWORDS

Compacted Clay Liner, Lateritic Soil, Permeability, Cadmium, Adsorption

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