

MOISTURE DRAINAGE & SEEPAGE ANALYSIS IN STOCKPILES

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ABSTRACT

Stockpiles are widely used in mining plants, ports, and industrial processes to handle and store large quantities of bulk materials at rest. But they are not free of trouble and may experience different flow problems related to water drainage and seepage.

The purpose of this article is to highlight a simulation technique using FEA to model the flow of liquids within a porous media and determine the final moisture retained in the bulk material after gravity drainage.

In addition, two real examples of the application and usefulness of this approach are presented; including experimental results of a drainage pipe test developed by J&J engineers and filled with wet crystalized salts, and the infiltration plus runoff of rainwater in iron ore stockpiles.

Keywords: Stockpile, Stockpile Drainage, Moisture Drainage Analysis, FEA