

Master's Dissertation in Geotechnical Engineering



EGENSKAPER VID DEPONERING AV ANRIKNINGSSAND FRÅN GRUVOR

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Report

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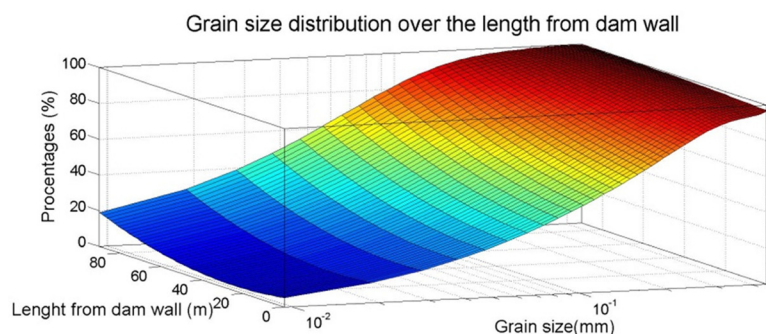
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In mining operations, when enrichment of metals occurs, there will as well be produced residues, such as tailings. It is an inescapable requirement that tailings are to be deposited, because of content of high levels of metal compounds. Therefore, the use of tailings is not suitable for other purposes. Tailings dams are impermeable in order to recycle water in a closed system, and to prevent leaks of leachate to the environment and as well to reduce water consumption.

Generally, there are three different types of constructions of tailings dams, which are upstream, downstream and centerline construction. There are several pros and cons, for each method. When utilizing the upstream construction method, the primary benefit is reduced material use in the construction of the dam's dikes. However, the use of

upstream method implies requirement that the previously deposited tailings are used in rise of the dam's heights of dikes. Therefore, it is essential that adequate investigation of properties of the previously deposited tailings have been executed, in order to use that material to construct upon.

The purpose of this Master's dissertation is to investigate the deposited materials properties in the tailings dam Ryllehytt's tray in Garpenberg for Boliden and Sweco. Properties, which will be investigated, shall later on be used for the description of the processes occurring at the landfill. Furthermore, the properties investigated shall also be utilized as guidance for designs and optimum construction of Ryllehytt's tray tailings dam's slopes, with respect to the use of upstream construction method.