

Fail Analysis of the Filter in a Land Dam

Authors : Guillermo Cardoso-Landa, Ana Julita Cuenca-Castro

Abstract : The present paper focuses to research the possible causes of curtain failure of dam "El Batan" in Querétaro, Mexico, including the design of the fineness of the employee filter during the construction of the curtain was verified since this depends greatly on the proper functioning of this filter. To carry out the required analysis, it was necessary to document elements provided understanding about the composition and behavior of the land curtain, and the main types of failure in these curtains. The general characteristics of the curtain dam "El Batan", the composition of the filter, as well as possible causes resulted in the failure were also analyzed. Once obtained data starting, the actual analysis was carried out by reviewing the following possible causes of failure: fails due to a poor constructive process of the curtain, failure due to hydraulic suppression, fails due to a structural design wrong, fails due to a geotechnical design wrong, fails due to a hydraulic design wrong, fails due to an inadequate design of the curtain filter. It is concluded that the type of the filter employed in the land dam curtain of "El Batan", located in the municipality of Querétaro, México, do not have adequate characteristics, outside of the ranges of design, using the curves: Terzaghi criteria, Sherard and Dunnigan criteria, UCSCS criteria, and Foster and Fell criteria.

Keywords : failure, dam, filter, curtain

Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020