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# Study of Liquefaction Potential at Jaigarh Port Using Standard Penetration Test Data and Consequences: A Case Study

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## Abstract

Indian ports are rapidly expanding their infrastructures all along the coastlines. Many of the important ports are located in seismically active zones. The paper presents the study of liquefaction Potential and analysis is carried out for Jaigarh Port at Ratnagiri, Maharashtra. The focus is mainly on determination of liquefiable layers in the region of multi-layered soil stratigraphy. The SPT data shows that the ground is composed of loose sand with silt underlain by basalt rock (-15 m from Natural Ground Level or NGL). The water table at shallow depth and loose sand in the reclaimed fills make the area susceptible to liquefaction hazards. The IS 1893 Part 1: 2016 is used to figure out the ground safety factor (FOS) against liquefaction for the Port. The soil tests and subsequent quantitative analysis suggest potential liquefaction of loose upper layers.

**Keywords:** Liquefaction, SPT, Reclaimed fill