

DESIGN GUIDELINE FOR SALT SOLUTION MINING IN THAILAND

Kittitep Fuenkajorn

Geological Engineering Program, School of Geotechnology
Institute of Engineering, Suranaree University of Technology

Abstract

A general guideline has been developed for the design of salt solution-mined caverns in Sakon Nakorn and Khorat basins. Laboratory testing calibrates the mechanical and rheological properties of the salt formation. Via a series of numerical analyses, conservative configurations of the solution mine caverns are determined. It is recommended that the caverns be arranged in an array of single well system and should have the maximum diameter and height of 80 m and 60 m, respectively. The minimum spacing is estimated to be 240 m. The cavern field would yield an extraction ratio of $1.96 \times 10^6 \text{ m}^3$ of rock salt per one square kilometer. The salt roof and floor should be greater than 200 m to prevent excessive movement of the cavern ground.