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Operational Factors Affecting Maturity of Production Units for U6 Trona Seam in Beypazarı Trona Mine

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Abstract

Solution mining is used for extracting trona ore in the Beypazarı trona mine. Two vertical and one directionally drilled wells are combined in a target trona seam as a production unit. Solvent containing 2-3 % Total Alkalinity at a temperature between 60-80 °C (140-176 °F) is injected from horizontal well and brine is taken from vertical wells with 14-15 % Total Alkalinity (TA) with a temperature of 40-50 °C (104-122 °F). When brine concentration of units reaches design parameters, production unit is called as mature unit.

There are some operational factors affecting maturity of production unit. In this study, injection temperature and injection flow rate is observed as operational factors of production units depending on time. To see how operational factors, affect increasing brine concentration, units drilled in U6 trona seam were chosen from mining area and regression analysis is done for these units to estimate maturity time of units with the help of operational and external factors.

Key words: trona, solution mining, injection temperature, solvent flow rate, maturity

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