عنوان مقاله:
Sanding Potential Prediction Based on a New True-Triaxial Failure Criterion

محل انتشار:
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خلاصه مقاله:
Sand production is an important challenge in upstream oil and gas industry, causing operational and safety problems that costs producers tens billion of dollars annually. Selection of an appropriate failure criterion is necessary for any sand prediction study. Mohr-Coulomb is the most commonly applied failure criterion in sanding onset prediction. As this criterion does not consider the effect of intermediate principal stress, it is conservative in sanding onset prediction. Recently Al-Ajmi and Zimmerman have developed three dimensions Mogi-Coulomb failure criterion and applied it in stability analysis. Based on their study, the Mogi-Coulomb criterion leads to the best prediction of required mud weight to prevent borehole collapse. After good results of this criterion in stability analysis, this research has applied Mogi-Coulomb failure criterion in sand prediction modeling for the first time. Results would be compared to other failure criteria. In addition, a sensitivity analysis reveals that cohesion, friction angle of rock and in situ stresses have the most significant effect on sanding potential

کلمات کلیدی:
Sanding onset prediction, Failure criteria, In-situ stress, Mogi-Coulomb, Modified Lade, Mohr-Coulomb

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