World Academy of Science, Engineering and Technology
International Journal of Chemical and Molecular Engineering
Vol:16, No:12, 2022

Stability of the Wellhead in the Seabed in One of the Marine Reservoirs of Iran

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Abstract : Effective factors on the mechanical wellbore stability are divided in to two categories: 1) Controllable factors, 2) Uncontrollable factors. The purpose of geo-mechanical modeling of wells is to determine the limit of controlled parameters change based on the stress regime at each point and by solving the governing equations the pore-elastic environment around the well. In this research, the mechanical analysis of wellbore stability was carried out for Soroush oilfield. For this purpose, the geo-mechanical model of the field is made using available data. This model provides the necessary parameters for obtaining the distribution of stress around the wellbore. Initially, a basic model was designed to perform various analysis, based on obtained data, using Abaqus software. All of the subsequent sensitivity analysis such as sensitivity analysis on porosity, permeability, etc. was done on the same basic model. The results obtained from these analysis gives various result such as: with the constant geomechanical parameters, and sensitivity analysis on porosity permeability is ineffective. After the most important parameters affecting the wellbore stability and instability are geo-mechanical parameters.

Keywords : wellbore stability, movement, stress, instability
Conference Title : ICAPPE 2022 : International Conference on Advanced Petroleum and Petrochemical Engineering
Conference Location : Dubai, United Arab Emirates
Conference Dates : December 20-21, 2022