Geophysical Research Abstracts
Vol. 17, EGU2015-1164, 2015
EGU General Assembly 2015

Wellbore stability in shale gas reservoirs, a case study of the Barnett Shale (USA).

Sid-Ali OUADFEUL (1) and Leila Aliouane (2)

(1) Algerian Peroleum Institute (IAP) , (2) Geophysics Department, Faculté des Hydrocarbures et de la Chimie, Université Mhamed de Boumerdes (UMBB)

Wellbore stability in shale gas reservoirs is one of the major problems during the drilling phase; bad stability can induce the breakouts and drilling induced fractures. Wellbore stability requires the good knowledge of horizontal maximum and minimum stress, the overburden stress and the pore pressure. In this paper, we show a case study of the wellbore stability and how to estimate the mud weight in shale gas reservoir of the Barnett shale formation before drilling. The overburden stress is calculated from the seismic inversion, the minimum stress is calculated using the poro-elastic model, and however the pore pressure is calculated using the Eaton's model.
Keywords: Wellbore stability, shale gas, maximum stress, minimum stress, overburden, mud weight, pore pressure.