

Study of Hydraulic and Tectonic Fracturation within Zemlet El Beidha Area (North Chott Range)

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Abstract : The study of fluid pressure and its evolution have a critical importance as they lead to understanding the tectonic history of the region. Therefore, the present work focuses on a microtectonic study of tectonic and hydraulic fracture at the anticline structure of Zemlet El Beidha (North Chott range). The study and the analysis of several stations of tectonic and hydraulic fracture allow revealing the witnesses of a paléosurpression in the deposits of Lower Cretaceous (Bouhedma Formation). In fact, we noticed that the overpressure is directly involved in the creation of various types of fractures as evidenced by the different measures and the stereographic projections. Thus, the orientations of fibers of mineralization that fills the Beefs type fracture have the same direction as the main constraint. Furthermore, we discussed the different overpressure build-up mechanisms. The results showed that tectonics is likely, responsible for this anomaly. This is confirmed by the description of the fibers and the projection of the different measurements of Beefs. The mineralization transformation from gypsum to anhydrite is heavily involved in this stress regime especially in the presence of all necessary conditions of dehydration of gypsum.

Keywords : Zemlet El Beidha, overpressure, tectonic fracture, hydraulic fracture, gypsum beefs

Conference Title : ICEG 2016 : International Conference on Engineering Geology

Conference Location : Paris, France

Conference Dates : July 25-26, 2016