

Identification and differentiation of anhydrite texture in sedimentary facies of the Asmari Formation, Mansouri Oil Field, Dezful Embayment

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Abstract: Evaporite minerals form when evaporation is more than precipitation. One of the most important evaporate minerals are calcium sulfate, that have extensive distribution in geologic time. Sedimentary and diagenetic processes, operating within different environments such as shallow margins to deep water, have an important role in the formation of these minerals. Due to the presence of anhydrite as a cement, as well as distributeon of this mineral in sedimentary facies of the Asmari Formation in Mansouri oil field, this mineral can affect on the reservoir quality in the studied reservoir. In this study, the fabric of anhydrite in production zones in the Mansouri oil field has been investhigated. Microscopic studies led to the identification of 11 microfacies that are formed from sabkha to open marine enviroment. Note that the textures of anhydrite is partly related to sabkha and lagoon environments (felted fabric and acicular crystals) and partly are related to diagenetic processes operated in shallow to deep burial (coarse crystals of anhydrite with cleavage) in grain-supported facies. Other anhydrite textures indentified in the Asmari Formation include layers, poikilotopik, pore filling and inclusive, nodular, nodular - burial, scattered and fracture filling.

Keywords: *Mansouri oil field; Asmari Formation; evaporite minerals; texture; anhydrite.*

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