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A Combined Technique based on Flow Unit and Sedimentological study is used for a better reservoir characterization and Reservoir Modelling of Hassi R'Mel South field Development, Algeria

The tectonic of the Hassi R'Mel South Field is very complex, it presents a normal network faults, where the major fault directions are North North West - South South East. The through somewhere is very important which could result in a Horst Grabben system. Two Triassic reservoir have determined based on the drilling of 30 wells in this region. An A-Sand oil reservoir with gas cap support consist of a very good reservoir characteristics, with another oil accumulation in the lower part, exactly in the Shaly-Sand zone of the Serie Inferieure which consist of an average reservoir characteristic. These two reservoir lie in discordance on the hercynienne surface. The present work consist of a sedimentological study and a reservoir characterization using the flow unit approach, with the objectives: - To explain the geological nature of the facies heterogeneity - To characterize the reservoir in order to build a predictive model for a simulation study - To determine the optimum Hassi R'Mel South field development. To achieve these objectives a study has been conducted by: - A detailed core well description - A sedimentological subdivision in correlable chronostratigraphical units through the field - Determine the correlation profiles through this zone, which are the base of all the generated Cartography The Somulation study of the A-Sand Triassic reservoir of the Hassi R'Mel South Field involves the following steps: - Build a 3-D reservoir model using a black oil simulator - A preliminary scenario with 20-year forecast using only vertical wells - A preliminary scenario with 20-year forecast using only horizontal wells - A mixed development plan using vertical and horizontal wells including the best candidates of each type of well (vertical or horizontal) per area - An economic assessment for different development plans.