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## **Petrophysical and Reservoir Quality Evaluation of the Shuaiba Formation in the Reshadat Field, Offshore Iran**

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In this paper as a case study the petrophysical and reservoir quality of the Shuaiba Formation were evaluated using different methods in the Reshadat Field, offshore Iran. The geological setting and sedimentary environment of this formation is determined as well. All the available data from current 32 wells were used in the project concluded for Iranian Offshore Oil Company (IOOC). The sedimentary environment of the Shuaiba Formation was found to be the deeper part of a shallow carbonate shelf which was dominating in Reshadat Field region in the time of the Shuaiba deposition in Aptian. Porosity is not significantly changing field wide, but generally is better towards the crest and eastern flank of the field. This can be related to microfractures, which observed on the cores. The dominant type of chalky porosity forms preliminary as result of Aptian unconformity. Water saturation was computed using Archie equation and it is 49% in average. Bukles plot was used to determine irreducible water zones. The constant of 0.07 was obtained for Swir zones, which means zones with Bukles constant lower than 0.07 is considered to be in Swir status. Permeability is not good in the formation and is 3-4md in average. Three petrophysical zones are proposed in the Shuaiba Formation, of which the uppermost one (zone-1) has the best petrophysical quality (best porosity and permeability and lowest water saturation) and is the main oil producing interval. It indicates that the Aptian unconformity had major effect on reservoir quality of the formation, mostly in upper part.

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