

**Petrophysical evaluation and reservoir quality of Ilam Formation  
East Paydar oil field, South west of Iran**

By

**Mahsa Heidari**

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First Supervisor: Dr. Telm Bover Arnal

Second Supervisor: Dr. Mohammad Hosein Adabi

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## **Abstract**

Ilam Formation belongs to the Bangestan Group of the Middle Cretaceous (Coniasin-Santonin) age is one of the most important oil carbonate reservoirs in the southwestern region of Iran.

Petrophysical characteristics such as shale volume, lithology, porosity, permeability and water saturation are important in evaluating the petroleum potential of a reservoir. In this study the petrophysical evaluation carried out by using petrophysical digital logs and analyzing core data in Geolog software (7.1). The results indicated that Ilam Formation in East Paydar oil field (south west of Iran) consists lithologically of limestone, dolomitic limestone and also very less quantity of shales as sparse. Based on petrophysical characteristics distribution, the reservoir was divided into four zones.

The shale volume, calculated using gamma ray logs as a shale indicator, is less than 10% indicating a clean formation. The volume of clay minerals is small but it has a severe impact on petrophysical parameters. Average effective porosity and water saturation of Ilam Formation are 14% and 26%. The estimated permeability is 8 mD.

Based on the results, the middle section of Ilam Formation (zones 2 and 3) defined as oil potential zone and having higher hydrocarbon reserve, compared to the other parts (zones 1 and 4).

**Keywords: Bangestan Group, Ilam Formation, Petrophysical Evaluation, Porosity, Permeability.**