

**Reservoir analysis of Jurassic Datta Formation using wireline log data of Chanda-1 and Chanda Deep-1 wells, Chanda Oil Field, Khyber Pakhtunkhwa, Northwest Pakistan**

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**Abstract**

Chanda oil field, first discovered in 1999 by Oil and Gas Development Company Limited (OGDCL), is located in the Shakardara area of Kohat district, Khyber Pakhtunkhwa. The oil field includes Chanda-1, Chanda-2, Chanda-3, and Chanda Deep-1 wells producing from Datta and Kingriali formations. The main producing reservoir in Chanda oil field is Datta formation, encountered in several other wells in the Kohat Potwar region including Manzalai, Makori East, Sumari Deep-1, Marwat-1, Pezu-1, Toot-1 and Dhulian. The present work delineates reservoir properties of producing Datta formation in the Chanda oil field of Kohat Basin using well log data. Datta sandstone interval in two wells Chanda-1 and Chanda Deep-1 is analyzed for calculation of petrophysical parameters including gross thickness, net thickness, net to gross ratio, porosity, permeability and water saturation. The Datta sandstone represents good to excellent porosity in the range of 7 to 13%. The water saturation show low values lying in the range of 31 to 36%. Datta formation is interpreted from the gamma ray log trends where sand packages dominantly represent left box car and irregular trend. Crossplots such as RHOB/NPHI, GR-RHOB and GR-NPHI and Th-K are used for lithological identification in the studied wells indicating arkosic and micaceous sandstone as dominant lithology with shale. Formation evaluation of petrophysical parameters shows that the Datta sands have high hydrocarbon saturation in the area.