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## Shuaiba Formation, An Unconventional Reservoir in Kuwait

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Shuaiba Formation An Unconventional Reservoir in Kuwait By Rod Blackford With special contributions from Meshari Al Awadi Moinuddin Quidwai Fathi Atta Fathi Terry O'Hearn Mubarak Al-Hajeri

This paper investigates the potential of the Shuaiba Formation as an unconventional, (low pressured with extreme permeability) oil and gas bearing reservoir in northern Kuwait. Potentially large reserves of oil and gas with high production rates are expected. This paper will discuss how the Shuaiba Formation was recognized as an unconventional reservoir. A variety of conventional exploration methods interpreted differently is the key to recognizing the unconventional nature and potential of the Shuaiba.

This paper discusses the unique interpretation of typical exploration methods used to evaluate unconventional formations. Interpretation of the results from routine methods such as drill cuttings analysis, petrophysical analysis, mud logging, geochemistry, through casing temperature logs, seismic review and pressure determination, as well as, drilling records will be reviewed to highlight the unconventional interpretation.

Maps, well logs, cross-sections, geochemistry, drilling records and seismic demonstrate the need for a multi-disciplinary approach to evaluate and exploit these types of reservoirs even more so than conventional reservoirs. Many low pressured carbonate reservoirs may have been over looked world wide but with a logical interpretation approach of the information; many new reservoirs can be established.

To exploit unconventional reservoirs fully under-balanced drilling methods will be explained why they must be applied. In November of 2005 an under-balanced drilling test of the Shuaiba formation in the Raudhatain Field will be conducted in North Kuwait. High production rates are expected based upon current disposal well injection rates, establishing the Shuaiba formation as a major oil producer. The results from the well tests will be given at the Geo 2006 convention.

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