



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

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Geochemical Evaluation of Abu Gabra source rock formation in Hamra oilfield

التقييم الجيوكيميائي لتكوين صخر المصدر
أبوجابرة في حقل حمرا

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Dedication

To our country martyrs

To our beloved parent,

Brothers & sisters,

Friends & colleagues,

Our teachers...

Tnx

Acknowledgement

It is our great pleasure to have chance in order to say thank you to our teachers in College of Petroleum Engineering, Our supervisor:

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Abstract

The objective of this study is to evaluate the Abu Gabra source rock formation in Hamra oilfield, Muglad basin, Sudan. This is done using results of analysis of “38” samples from the shales of the Abu Gabra formations in Hamra oilfield from Hamra SE-1 and Hamra SW-2 wells. The samples have been analyzed using the geochemical method of Rock–Eval pyrolysis and results of the analysis were provided by CPL. The analysis shows that the total organic carbon content lies between 0.15 and 2.13 wt%.

It also shows that kerogen is a mixture of type I and III that is dominant, and is deposited in the lacustrine environment under prevailing reducing conditions. This type of kerogen is prone to gas and oil/gas production. The geochemical diagrams show that all the studied samples have fair to good quantity and lies in the mature stage.

Furthermore, the total organic carbon TOC has been calculated all over Abu Gabra formation within Hamra oilfield using the trendline equation generated from the cross-plotting of GR log reading against TOC values obtained from the core.

التجريد:

الهدف من الدراسة هو تقييم صخور أبوجابرة في حقل حمرا حوض المجلد السودان. تم الدراسة باستخدام نتائج تحليل ٣٨ عينة من صخور أبوجابرة من بئرين حمرا SE-1 وحمرا SW-2.

تم تحليل العينات باستخدام طريقة Rock-eval في معامل النفط المركزية وتم الحصول على قيمه الكربون العضوي الكلي والتي تقع بين 0.15-2.13 % wt.

تم تحديد نوع الكيروجين والذي يتكون من خليط من النوعين الأول والثالث والنوع السائد هو النوع الثالث الذي تكون من بقايا نباتات ارضية وطحالب في بيئة نهريّة مختزله، لذلك فانه ينتج الغاز بصورة أساسية بالإضافة الي خليط الزيت والغاز المنتجة من النوع الأول.

المخططات الجيوكيميائية توضح ان صخور المصدر ذات جودة مقبولة الي جيدة كما تقع في مرحلة النضوج الحراري.

بعد ذلك تم حساب قيمه الكربون العضوي الكلي في تكوين أبوجابرة في حقل حمرا باستخدام المعادلة المنتجة من مخطط قرات أشعة غاما مع قيم الكربون العضوي الكلي المقاسة من العينات اللبية.

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