A E Radwan et al., J Geol Geophys 2017, 6:5 (Suppl)
DOI: 10.4172/2381-8719-C1-0011

New simulation technique to estimate the hydrocarbon type for the two untested members of belayim formation in the absence of pressure data at Badri Field, Gulf of Suez, Egypt

A E Radwan and **M A Elkhawaga**
Gulf of Suez Petroleum Company, Egypt

Determination of the fluid type in a reservoir is considered one of the main essential purposes of the formation evaluation processes. Badri field is one of the most prolific areas in the Gulf of Suez, which locates in the southern part of Gulf of Suez. Presence of sandstone streaks in Baba and Sidri members within Belayim Formation in some wells among this field of comparitively high resistivity signature in Electric logs is that the main reason to analyze its petrophysical parameters, to delineate the most characterization of those sands and to judge their ability for hydrocarbon accumulation and production. This study aims to estimate the fluid varieties in these two untested members; particularly they are sandwiched between two productive sandstone zones; Hammam Faraun Member and Kareem Formation. The fluid type can be determined using formation pressure and pressure gradient, which play a great role to differentiate between the different formations fluids (oil, gas and water). Because of the absence of pressure information in studied wells, a new simulation technique was applied using well logging crossplot responses within the totally different hydrocarbon types (oil and/or gas), which were tested before to estimate the fluid type in the untested two studied zones. These include (Density-Neutron, Sonic-Neutron, M-N and MID) crossplots. This can be performed by correlation of the crossplot responses within the two productive sandstone zones; Hammam Faraun and Kareem Formation Member versus the untested studied Sandstone zones of Sidri and Baba members, depend upon the similarities and therefore the variations between the crossplot responses or signatures in the oil and gas fluids. The results of this approach revealed that the most fluid type in (BDR-A8) and (BDR-B9) wells is gas in Baba and Sidri zones and oil in the (BDR-A9) well for Baba zone.

Biography

A E Radwan is a PhD student and Geologist at Gulf of Suez Petroleum Company which is a joint venture of British Petroleum, Egypt. He has published more than 5 papers in reputed journals. He has participated with SEG, AAPG and SPE and in a lot of conferences in Europe and Egypt. He volunteered some organizations in Egypt related to Science and Education.

radwanae@yahoo.com

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