Petrochemistry-2013
World Congress on
Petrochemistry and Chemical Engineering
November 18-20, 2013 Hilton San Antonio Airport, USA

Gamma ray spectrometry logs as a hydrocarbon indicator for clastic reservoir rocks in Egypt

I.M. Al-Alfy
Exploration Division, Nuclear Materials Authority, B.O. 530 El-Maadi, Kattameya, Cairo, Egypt

Abstract

Petroleum oil is an important source for the energy in the world. The Gulf of Suez, Nile Delta and South Valley are important regions for studying hydrocarbon potential in Egypt. A thorium normalization technique was applied on the sandstone reservoirs in the three regions to determine the hydrocarbon potentialities zones using the three spectrometric radioactive gamma ray-logs (eU, eTh and K % logs). The conventional well logs (gamma-ray, deep resistivity, shallow resistivity, neutron, density and sonic logs) are analyzed to determine the net pay zones in these wells.

Indices derived from thorium normalized spectral logs indicate the hydrocarbon zones in petroleum reservoirs. The results of this technique in the three regions (Gulf of Suez, Nil e Delta and South Valley) are in agreement with the results of the conventional well log analyses by ratios of 82%, 78% and 71% respectively.