The Gulf of Suez is a failed extensional rift basin. Rifting initiated during Early Miocene time and reached its peak at the end of Burdigalian. Three major fault trends are observed in the Gulf of Suez; rift parallel or clysmic. North oblique and rift orthogonal cross elements. The Gulf of Suez rift is divided into three dip provinces separated by two transfer zones. Each dip province has its own geologic characteristics which makes the hydrocarbon trapping mechanisms are different from one province to another. The southern province is dominated by SW dipping pre-rift sequences and characterized from the central and northern parts by more severe extension, faults are more frequent, smaller structural block size, thicker sand reservoir accumulations during in the Miocene syn-rift sequences, thinner pre-rift sequences and well developed Miocene salt diapirs. As a result, the southern GOS province is more favorable for Miocene and Pre-Miocene (including the Basement rocks) hydrocarbon traps. West Esh El Mallaha concession has oil production from three separate structural closures (Tanan-Tawoos, Rabeh and East Rabeh). Its total area is 52 km square with 45 wells have been drilled in the concession.

The structural style of West Esh El Mallaha fields are dominated by tilted fault blocks bounded by NW-SE oriented normal, down to the northeast faults and dissected by oblique and orthogonal faults. Reservoirs range in age from Cretaceous to Miocene.

The first commercial hydrocarbon in West Esh El Mallaha concession was discovered by Coplex in 1997 from Rabeh field. The discovered oil was placed on production on February 1998. Currently, the West Esh El Mallaha concession fields are operating by LUKOIL/ESHPETCO joint venture company. The concession cumulative oil production as of June, 2009 is 27.5 MMB, of which 90% is produced from Pre-Miocene Nubia and Matulla Fms and the remaining 10% from the Miocene reservoirs Nukhul and Rudeis.
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