# ORIGIN AND EVOLUTION OF OILS AND CONDENSATES FROM ONSHORE AND OFFSHORE TRINIDAD: THEIR EXPLORATION SIGNIFICANCE

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## ABSTRACT

Forty oils and condensates from onshore and offshore Trinidad were analyzed with whole oil gas chromatography, detailed C-7 gas chromatography, and saturate and aromatic gas chromatography-mass spectrometry. The results show that the observed variations within the liquid hydrocarbons were caused by multiple alteration processes (biodegradation and water washing, gas-condensate mixing, gas stripping and evaporative fractionation) occuring in different combinations on genetically related oils of similar maturity. The C-7 data provided new insight into the alteration processes in general and indicated the range of expulsion temperature (and equivalent thermal maturity) of the unaltered oils, the residual oils and the evaporative gas-condensates, as well as of the gas-condensates fractions in the mixed oils. This paper discusses the oil alteration processes in relation to the tectonic evolution of the basin and also outlines their significance in exploration.