

## TRACE ELEMENT DISTRIBUTION IN ROCKS EXTRACTED FROM CUBAN PETROLEUM WELLS

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### ABSTRACT

Seismic geology, stratigraphy, petrology and geophysics have been applied to prospecting and well-logging of Cuban oil and gasiferous deposits. Carbonate rocks are the most frequent reservoirs of these deposits. However, there are some geological formations which have volcanic, volcano-sedimentary, metamorphic (ophiolite) and mixed lithologies. Trace, and particularly rare earth, elements (REE) are very informative in revealing various chemical fractionation processes in geological systems. There are several ways to study the concentration of REE.

The main purpose of this work is to show the difference between chondritic normalised patterns and trace concentrations comparisons, and the mean values on the earth crust from similar and diverse rocks of different ages and origins in petroleum deposits from Cuba, as fingerprints of different geological formations. Geological information of the deposits studied are summarised as follows:

Petroleum Deposits	Place	Geological Formation	Dominant Lithology
Yumuri Boca Janico Varadero	North of Havana and Matanzas	Tectonostratigraphic Unit "Placetás"	clay (seal) limestone (reservoirs)
Pina	Central Basin	Greater Antilles Volcanic Island Arc	clay (seal) tuff and basalt, limestone (reservoirs)
Marti Mesa	West of Havana	Tectonostratigraphic Unit "Sierra del Rosario"	chaotic - mixed rocks of limestone, clay and diabase (seal and reservoirs)
Basilio cautel	North of Havana and Matanzas	"Zaza" terrain	ophiolite (seal and reservoirs)
Colorados	North of Havana and Matanzas	Tectonostratigraphic Unit "Colorados"	clay (seal) and limestone (reservoirs)
Marbella	North of Havana and Matanzas	Tectonostratigraphic Unit "Camajuani"	clay (seal) limestone (reservoirs)