

Geochemical characterization of Moroccan Tarfaya Oil Shale

M. El Mostaine, H. Sellami, A. Chakor Alami, ONHYM

The Tarfaya oil shale deposit is located in the southern part of Morocco, between the cities of Agadir and Laayoun, and has an area of 710 km². It is one of the most important Moroccan oil shale deposits and contains ~23 billion bbls of shale oil.

The oil shale is Upper Cretaceous in age and Fisher assay yield reaches more than 130 l/t. The Rock-Eval IV analysis results show samples with values greater than 600mg HC/g rock, indicating a marine depositional environment. The maturation modelling indicates that oil shale sediments could be mature at the south of Tarfaya basin. Geochemical results and maturity parameters of outcrops, bore holes, and wells samples will be discussed. They showed that the exploitation of Tarfaya oil shale could be either by *in situ* process or by a conventional surface retorting process.

The high PCS values of Tarfaya oil shale (more than 1000 kcal/kg) make the use of the oil shale combustion for electrical energy generation possible.