# Supercritical Fluid Extraction of Hydrocarbons from both spiked and natural polluted soils using ethane

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Six different natural polluted soils and one spiked soil with a Mexican crude oil were treated with supercritical ethane, at temperatures ranging from (308 to 338) K and pressures ranging from (17 to 34) MPa in a device built in our laboratory that can be used in batch or continuous mode. The amount of extracted organic compounds from the solid matrixes was determined gravimetrically whereas the residues of the different treated samples were subjected to soxhlet extraction with acetone/dichloromethane (50:50) in order to determine the extraction capacity of ethane.
Pressure is the thermodynamic variable that shows greater effect on the extraction capacity of ethane. We have obtained values for the extraction capacity of about 85 % at the highest value of pressure studied in this work. These results are well correlated with the density of pure ethane as a function of pressure and temperature.
Some of the extracts from the spiked soil have been characterized by gas chromatography coupled whit mass spectrometry and the results show that ethane selectively dissolves saturated paraffines.