

Baldeo Singh
Unocal Corporation, Brea, California

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EFFECT OF PRESSURE ON WETTABILITY RESTORATION AND
CRUDE CHARACTERIZATION USING INFRA-RED SPECTROMETRY

ABSTRACT:

Experiments were conducted to investigate the role of pressure on the process of wettability restoration. Cores from two North Sea fields were used for investigation. It is found that pressure has significant effect on the wettability restoration. Restoration of cores at pressures lower than the reservoir pressure resulted in cores which were more oil-wet. The wettability measurements were made using Amott method.

This paper also summarizes the proper care in handling the core as well as the oil being used. Drying of the core is probably the single most important factor that can damage the core permanently. And the oil oxidation by exposure to air can lead to forming chemicals that can alter the wettability of the core. The oil oxidation processes is simulated in the laboratory. Characterization of the oil using infra-red spectrometry is found to be better than the usual acid number approach.

It is recommended that the cores should be properly preserved and fresh un-oxidized crude should be used for tests where measurements at core native-state are desired.