

M E M O R A N D U M

To: Mr. John Mason

March 22, 1965

Re: Special Core Analyses on Core Samples from Moore "D" No. 1, Moore "B" No. 1, and Humberg "A" No. 1, Schaben Field, Ness County, Kansas

Special flow studies including air permeabilities, porosities, water permeabilities, oil permeabilities with connate water, connate water saturations, water-oil relative permeability ratios, residual oil saturations, and permeabilities to water at floodout have been run on core samples from the Moore "D" No. 1, Moore "B" No. 1, and Humberg "A" No. 1, Schaben Field, Ness County, Kansas.

The tests were run using 28.0 cp mineral oil as the oil in place and 25,000 ppm NaCl brine solution for both the connate water and the injection water. The sample from the Moore "D" No. 1 at 4383 ft depth developed a fracture when the pressure was increased to 20 atmospheres when water was injected into the core. This can be noted from the increase in permeability to air of 0.64 md to the permeability to oil with connate water in place of 8.8 md. Connate water saturations were extremely high in the samples. This is probably a function of the type of fractures which are present. Oil recoveries varied from 18 to 25%.

Complete data are shown on the attached table and curves.



R. V. Maul

RVM/maw

MOORE "B" #1
CEN. SE SE SEC. 30-19-21W
NESS COUNTY, KANSAS

Core Description

Core #1, 4326-4351, Rec. 25'

4326-4330.6 Tan, finely crystalline, hard, dense limestone with high angle and vertical fractures; irregular shale partings. No saturation.

4330.6-4332.4 Black coaly shale.

4332.4-4333 Green gray shaly limestone, shaly and sandy.

4333-4337.6 Shaly limy hard well indurated, fine to medium, fine sand, becoming cong. in bottom 2.6'. Looks wet. No saturation.

4337.6-4347.5 Crumbly red, green, gray, black, slightly coaly (mudstone) shale.

4347.5-4350.5 Green, brown, very calcareous shale; very shaly, finely crystalline limestone. No saturation.

4350.5-4351 Crumbly red shale. No saturation.

LTB:ER