SMITH ZJ #1

FIELD DATA

Oil Gravity: 47.2° API
Gas Gravity: 0.968 (air = 1.0)
GOR: 969 cu ft/1 STBO
Actual Production = 6-21 to 7-20-84 = 8750 BO

From Electric Logs: Pay w/3% cut-off, h = 14 ft
Average porosity, ϕ = 6.0%
Average saturation, S_w = 27.8%

After Standing: Oil Viscosity in Reservoir, μ_o = 0.325 cp

Apparent Relative Permeability to oil (calc abv.) K_o = 3.70 md.

Exponential Production Decline Rate from Tobac Bough C - 160 ac or more - 2.65% per mo.
- 80 ac spacing - 3.33% per mo.

After Craze & Buckley (water drive systems):
Recovery factor: $.114 + .272 \log k + .265 S_w - .136 \log \mu - 1.538 \phi - .00035h = .309$

$$\text{Recoverable Oil} = \frac{7758\ \phi\ h\ (1-S_w)\ RF}{FVF} = \frac{7758\ (.06)(14)(.722)(.309)}{1.54} = 946.3\ \text{BO/ac}$$

Economic Limit: 75 BOPM will be reached in 170 months (14 years, 2 months)

$$\text{Ultimate Recovery} = Q\left[\frac{R^n - 1}{R-1}\right] = 8750\left[\frac{.9735^{170} - 1}{.9735 - 1}\right] = 326{,}750\ \text{BO}$$

$$\text{Drainage Area} = \frac{326750\ \text{BO}}{946.3\ \text{BO/ac}} = 345\ \text{acres}$$

YATES PETROLEUM CORPORATION
Case No. 8305
8/22/84 Examiner Hearing
Exhibit No. 6