For a solution gas drive reservoir, below the bubble point:

1) $$RF = \frac{(B_o - B_{oi}) + (R_{si} - R_s) B_g}{B_o + (R_p - R_s) B_g}$$

For any given set of reservoir properties and abandonment pressure, B_o, B_{oi}, R_{si}, R_s, and B_g are constant. Equation 1 then simplifies to:

$$RF = \frac{C}{R_p + C}$$

Which indicates that for given conditions, the recovery factor is dependent solely on the Cumulative Produced GOR (R_p).

Assumptions:

A) No initial gascap.

B) Negligible water influx

C) Hydrocarbon pore volume (HCPV) reduction is negligible

Nomenclature:

B_o = *Oil formation volume factor at abandonment*

B_{oi} = *Initial oil formation volume factor*

R_s = *Solution gas oil ratio*

R_{si} = *Initial solution gas oil ratio*

B_g = *Gas formation volume factor*

R_p = *Cumulative produced gas oil ratio*

C = *Constant*

RF = *Recovery factor*

BEFORE EXAMINER STOGNER
OIL CONSERVATION DIVISION
TEXACO EXHIBIT NO. 4
CASE NO. 10431