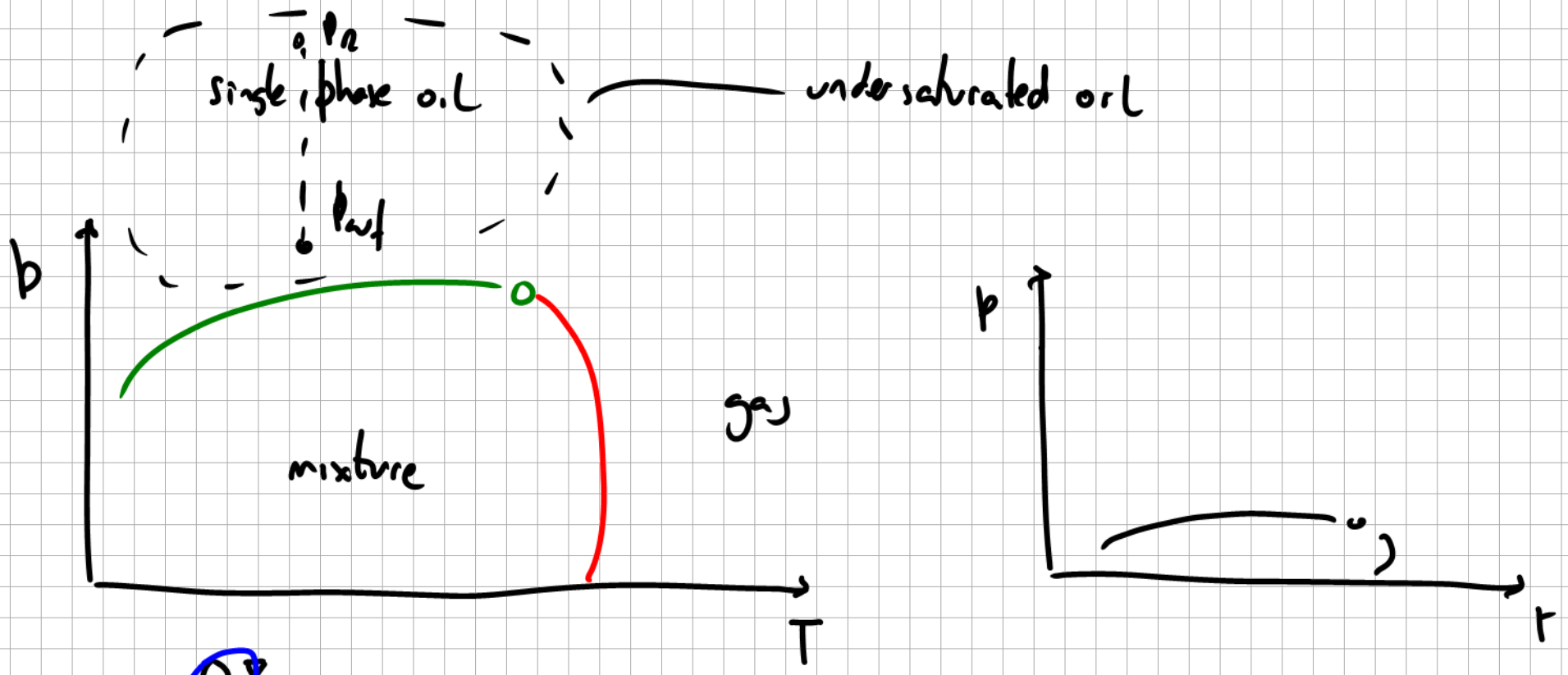


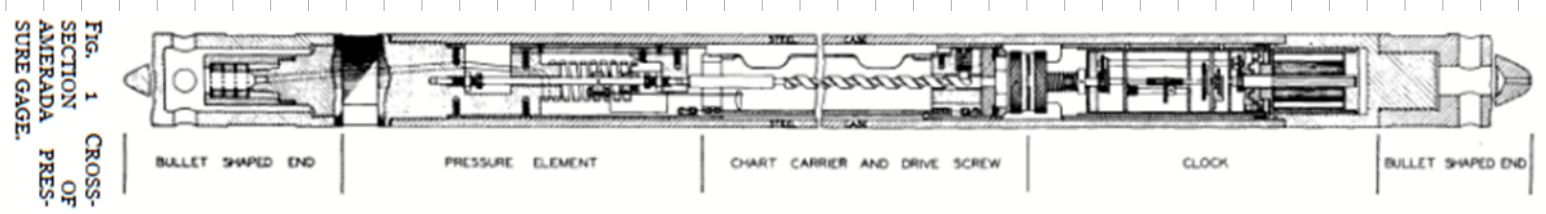


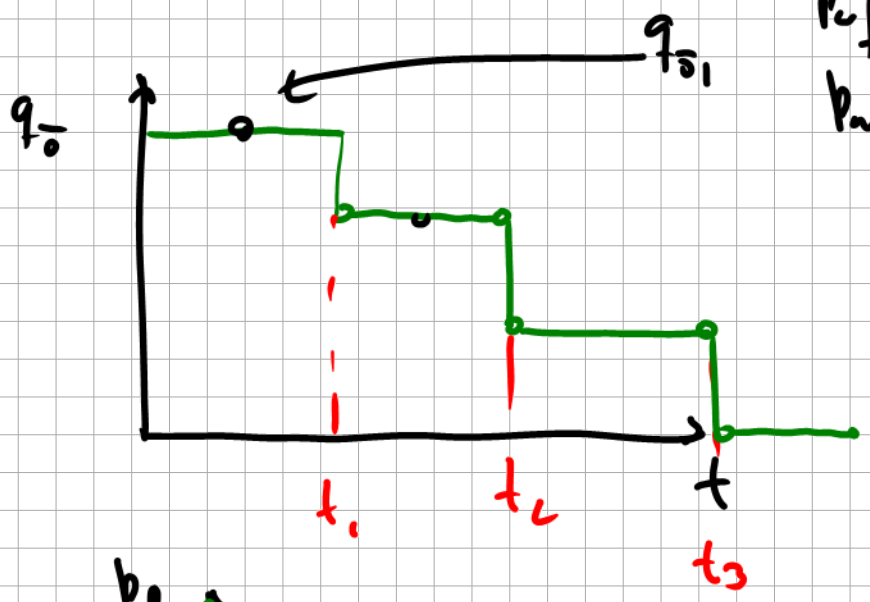
FIG. 1 CROSS-SECTION OF AMERADA PRESSURE GAGE.

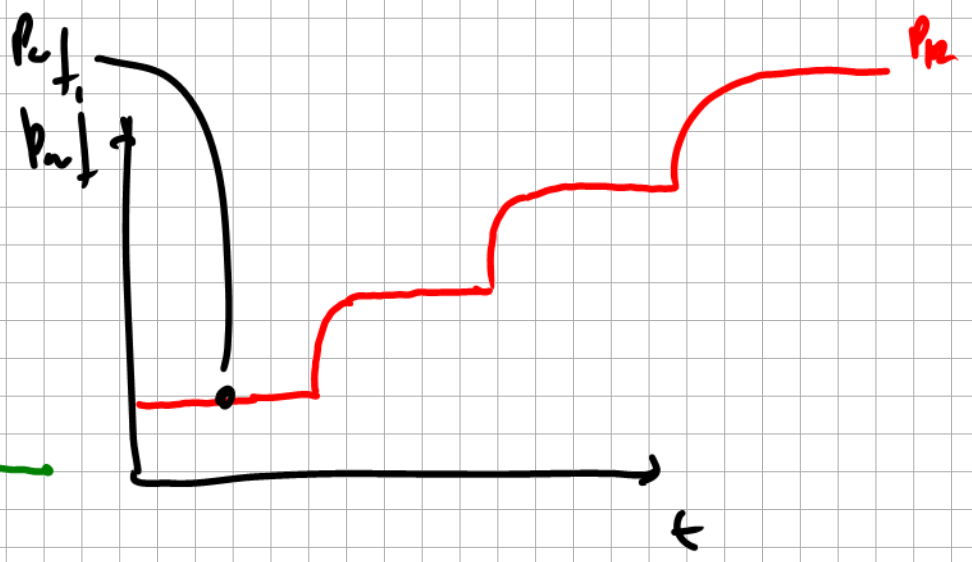
Bottom-hole Pressures in Oil Wells[1]

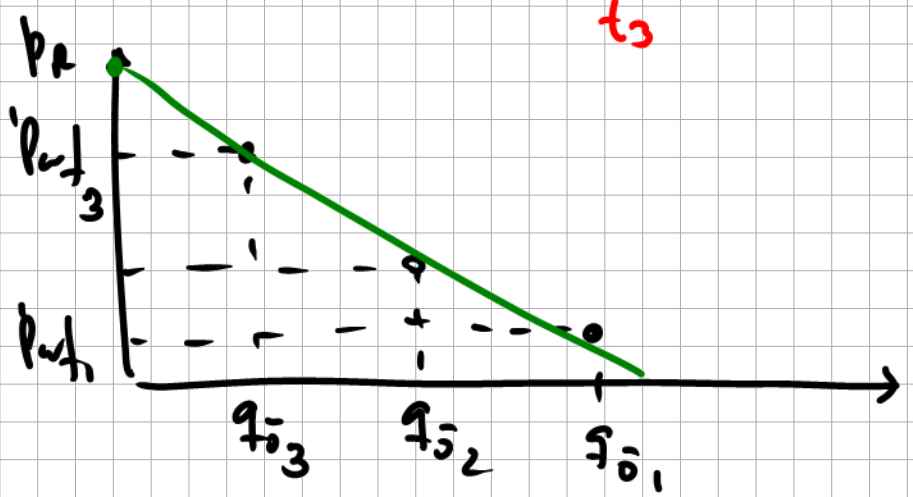
BY CHARLES V. MILLIKAN,[2] TULSA, OKLA. AND CARROLL V. SIDWELL,[3] SEMINOLE, OKLA.

(Tulsa Meeting, October, 1930)

THERE is nothing more important in petroleum engineering than a definite knowledge of the pressure at the bottom of an oil well at any existing operating condition, and the relation of this pressure to the pressure within the producing formation. A knowledge of bottom-hole pressures is fundamental in determining the most efficient methods of recovery and the most efficient lifting procedure, yet there is less information about these pressures than about any other part of the general problem of producing oil.





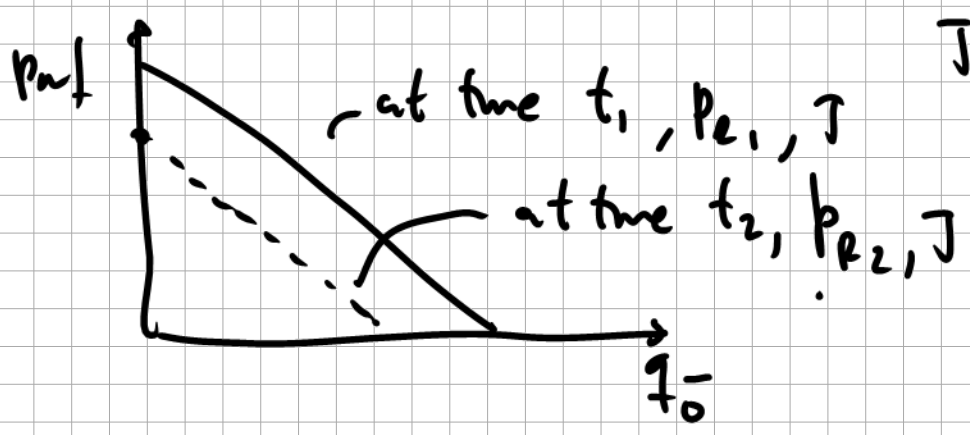


$$q_o = J\,(P_R - P_{wf})$$

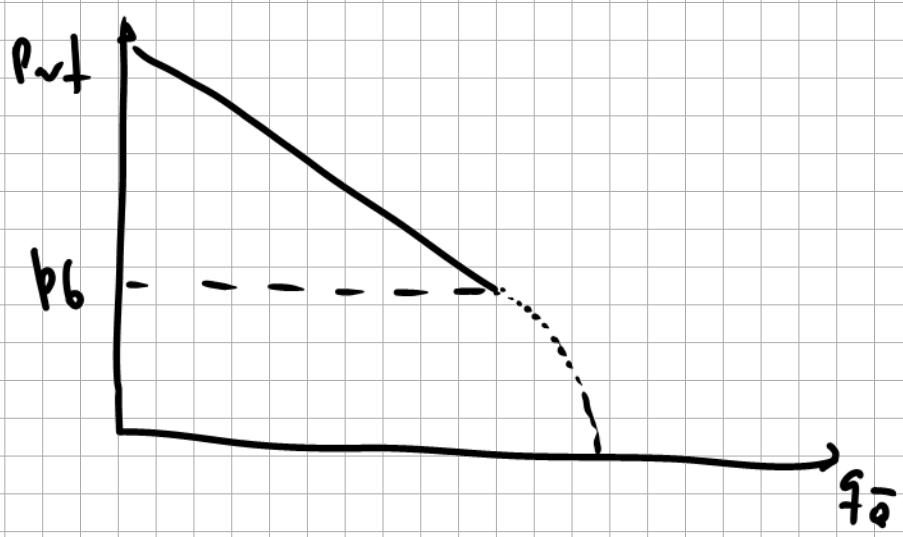
q_o: Sm^3/d — $(P_R - P_{wf})$: bara

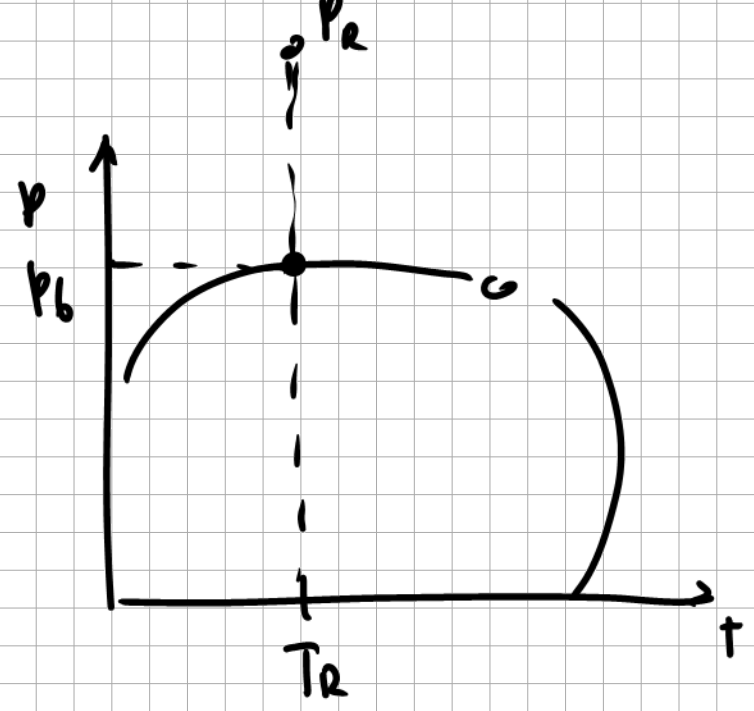
J: productivity index

$$J = \left[\frac{Sm^3/d}{bara}\right]$$



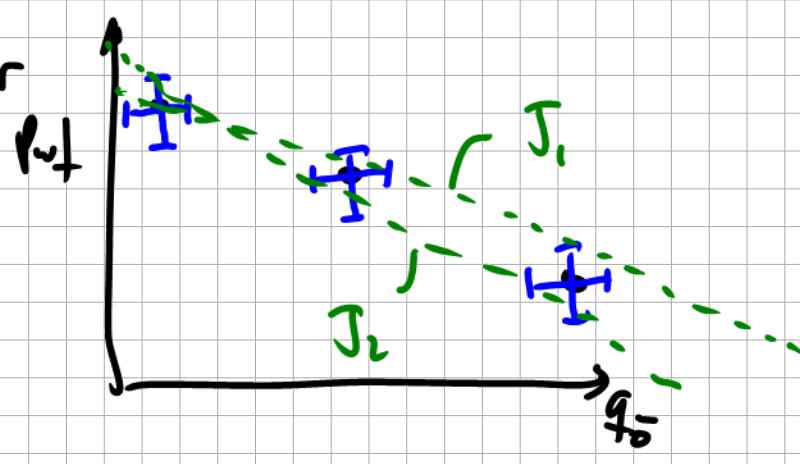
J usually doesn't change with depletion





- effect of measurement errors and variability

P = value ± error



if one point is available, and reservoir pressure is known

P_{wf_1}, q_{o_1}

$$q_{o_1} = J\,(P_R - P_{wf_1})$$

$$J = \frac{q_{o_1}}{(P_R - P_{wf_1})}$$