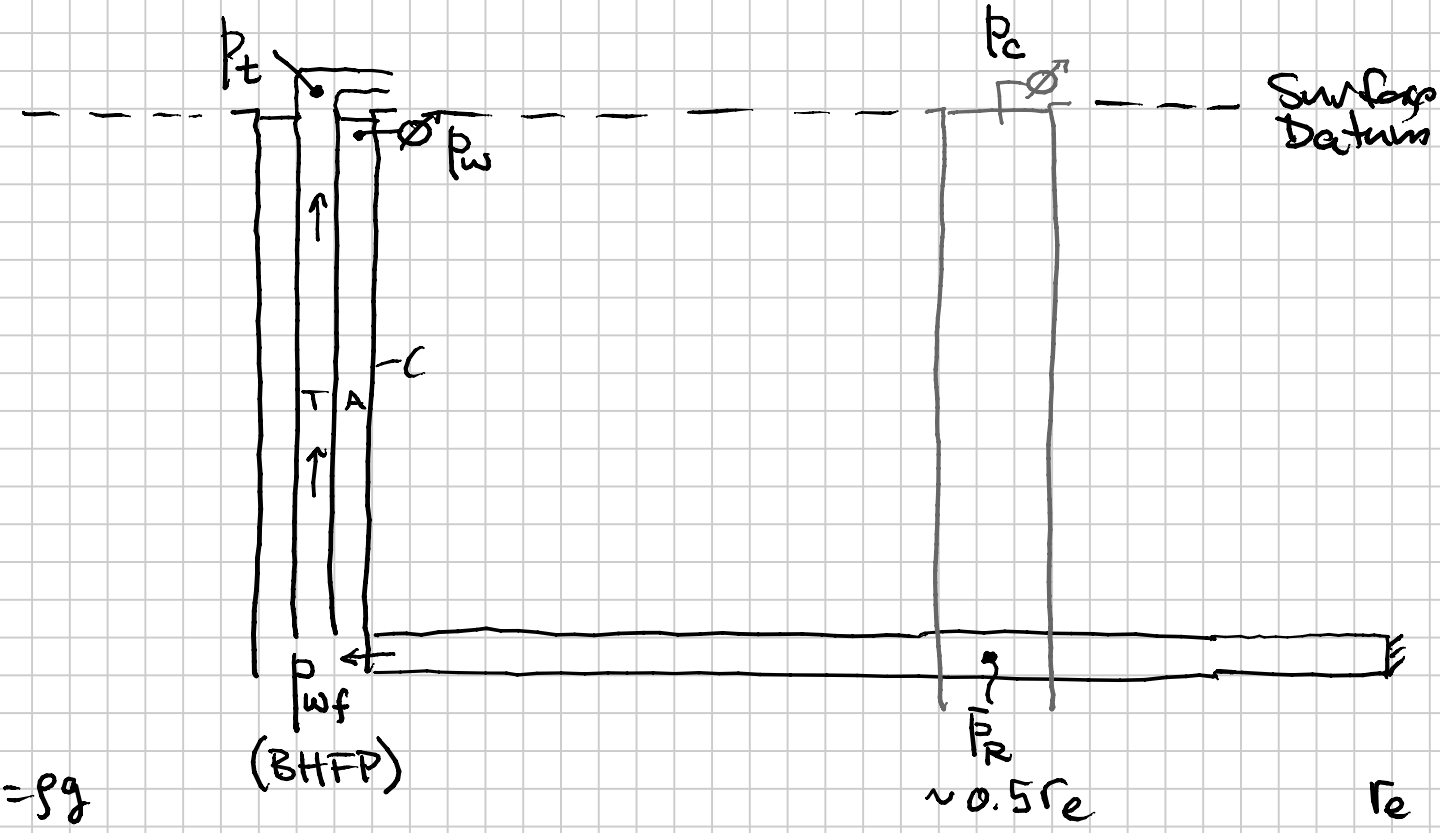
Q & A (Exam) TPG 4145

Note Title 12/5/2007

$P_{wf} \rightarrow P_t$: G, F

$q_g = C_T (\underbrace{P_w^2 - P_t^2}_{\text{"F"}})$

Pressure Definitions



$\frac{dP}{dz} = \rho g$

$\left(\frac{P_{wf}}{P_w}\right)_{\text{Static Gas Column}} = \text{constant}(TVD, \bar{\rho}_g) \cong \frac{\bar{P}_R}{P_c} = e^{S/2}$

γ_g or M_g, $\bar{T}$, $\bar{Z}$, TVD → S

Gas Mat. Bal.

$\frac{P_R}{Z} = \left(\frac{P}{Z}\right)_i \left(1 - \frac{G_p}{G}\right)$

No Aq
No c_w
No c_f
} HCPV = const

@Current

$\frac{e^{S/2}}{e^{S/2}} \left[\left(\frac{P_R}{Z}\right)\left[1 - c_e\left(P_i - P_R\right)\right]\right] = \left(\frac{P}{Z}\right)_i \left(1 - \frac{G_p}{G}\right) e^{S/2}$ @ R datum

A_Q, c_w, c_f, S_{wc} → t_0 (Previous Time Step)

c_e ✓

$(p/z)_i$ ✓

$(G_p/G)^{n-1}$ ✓

solve for $\frac{p_R}{p_c}$; $Z(p_R)$

Hand Check p_c @ 1 year

$p_c = 361.03$ bara

$c^{s/2} = 1.5792$

$p_R = 570.14$ bara vs Cell Q 570.12 ✓

$z_R = 1.359$ Cell T ; checked if you want $(T_r, p_r) \Rightarrow$ Fig. Ch.3

$(p/z)_i = 423.68$ bara

$p_i = 586.05$ bara

$c_e = 3.40 \cdot 10^{-4}$ 1/bar ; check

! $(G_p/G)_{1yr} = 0.01521$ Column N

$$\frac{570.14}{1.359}\left[1-(3.40\cdot10^{-4})(586.05-570.14)\right] = \text{LHS}$$

✓

$$423.68(1-0.01521) = \text{RHS}$$

AOFP : ~~q_g for $P_t = P_{tmin}$~~

$$B\,q_g^2 + A\,q_g - (P_c^2 - P_t^2) = 0$$

B: (BWH + TWH) A: AWH P_{tmin}

Solve for q_g

$B =$
$A =$
$q_g =$
$P_c =$
$P_{tmin} =$

$= 0$?

$q_g^* =$

- $q_{AOF} < q_{gmin} \Rightarrow q_g^* = 0$ well dies from loading

$t > t_p$

$$\min\left(q_{AOF}, \frac{q_{Field}}{N_w}\right)$$

$t \le t_p$

if $q_{AOF} \cdot N_w < q_{Field}$

$q_g^* = q_{AOF}$

else

$q_g^* = q_{Field} / N_w$

N_w = if $t < t_p$

$$N_w = \min\left(\frac{q_{Field}}{q_{AOF}}, N_{max}\right)$$

else

$$N_w^n = N_w^{n-1}$$

Ch. 6 PVT Lab

Ch. 4

vdW

ρ, M

$\rho_{H_2O} = 992\ kg/m^3$

What is the molar volume

$M_{H_2O} = 18$

$$v = \frac{M}{\rho} = 0.05\ \frac{m^3}{kg\text{-mole}}$$

(a) (b) H_2O = $a =$

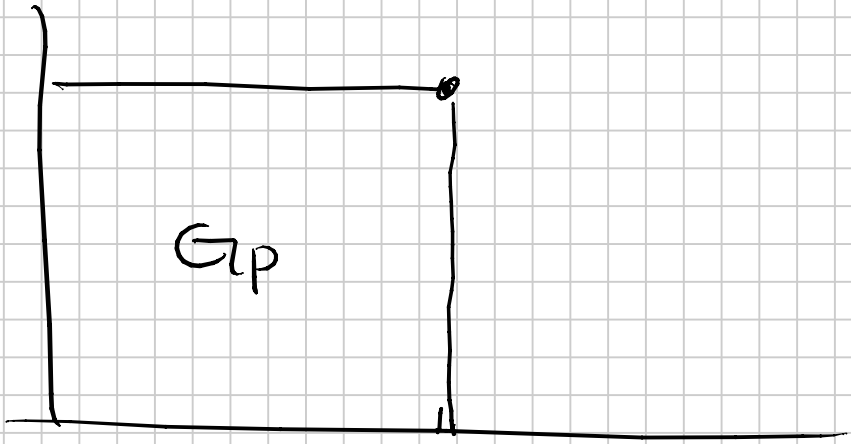
$P =$

RR (Phase Split) Ch. 4

- Problem
- Lecture

z_i K_i y_i x_i F_v

$$h(F_v) = \Sigma$$



$(G_p / G)_{end\ plateau}$

↓

P_R

↓

P_c A B → q_{max}

P_{Ri} high

$$q_g = \frac{Kh\,(P_R^2 - P_{wf}^2)}{\mu_g Z_i \ln \frac{r_e}{r_w} + s + Dq_g}$$

$$\frac{1}{\mu_g B_g} \sim \frac{P}{\mu Z}$$