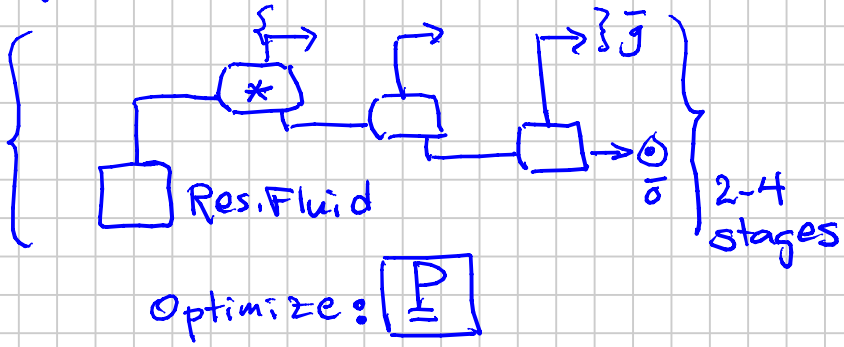
PVT LAB TESTS (Ch. 6 ; App. D-Oils)

Note Title 2013-09-27

PVT Laboratory Test	Reservoir Fluid Type: OIL	Reservoir Fluid Type: GAS CONDENSATE
*COMPOSITIONAL ANALYSIS (C.C.)		
– Bottomhole $\{w_i \rightarrow z_i$	✓	✓
– Separator Recombined $\{w_i \rightarrow z_i$	✓	✓
– $M_{\bar{o}}$ ($\rho_{\bar{o}}$)		
*CONSTANT COMPOSITION EXP (CCE) (MASS)	✓	✓
• $[p_s$ (BP, DP), $\rho(p \geq p_s)]$ @T_R (@$T<T_R$)	✓	✓
→ • $V_g, V_o (p < p_s)$	(✓)	✓
⊛ MULTI-STAGE SEPARATOR TEST (SEP)	✓	(✓)
		"Medium-Rich" C.C.
		$\frac{V_o}{V_g} \gtrsim 100 \frac{STB}{MMscf}$
		$560 \frac{Sm^3}{10^6 Sm^3}$
* DEPLETION TESTS (@T_R) $(V_g, V_o) = f(p < p_s), (\rho_g, \rho_o), (\mu_g/\mu_o)$ (y_i, x_i)	✓	✓
⊛ DIFFERENTIAL LIBERATION (DL)	✓	–
* CONSTANT VOLUME DEPLETION (CVD)	(✓)	✓



for multiple samples

"Compositions" pTx space

PVT Data Needed: [p @ T_R | p @ $T_R \rightarrow T_{sc}$]

- Surface Process (Separators)
- Pipeflow

- Phases # $\Rightarrow p_s$
- Amount of each phase
  - mass
  - volume
  - mole
- Phase Properties
  - Density
  - Viscosity
  - Compositions

} → "Surface Process"

Each PVT Test:

- Procedure Used
- Data Measured
- Data Reported

} → same sometimes / different —"—

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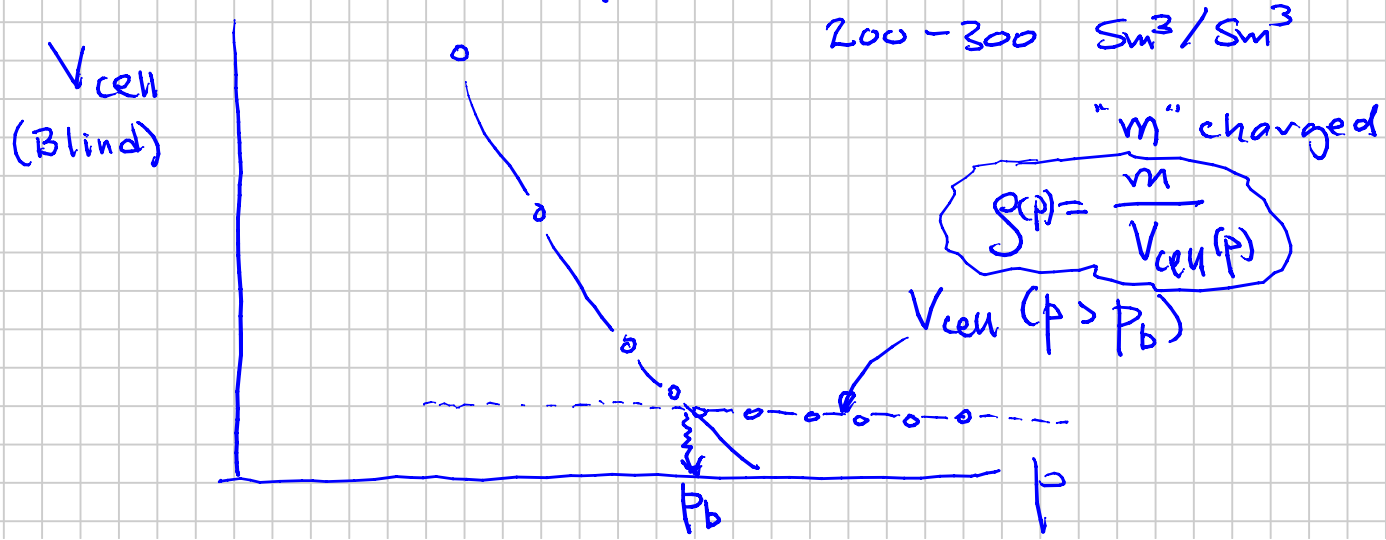
CCE: $p_s (T_R;\ T)$ $\rho (T_R,\ p > p_s)$

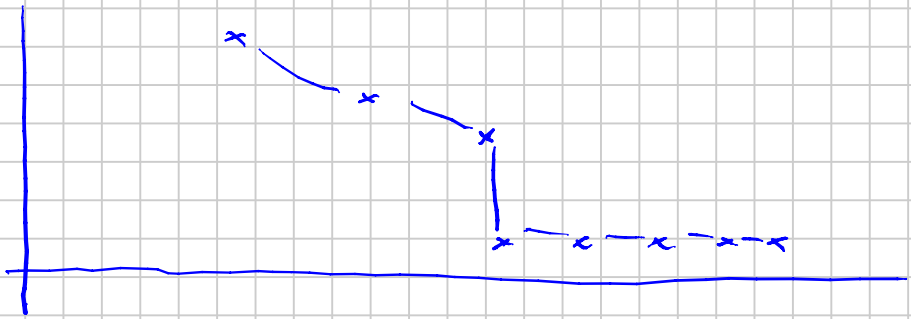
① OILS only - lower-medium GOR Oils

(GOR ≤ 1000-1500 scf/STB)

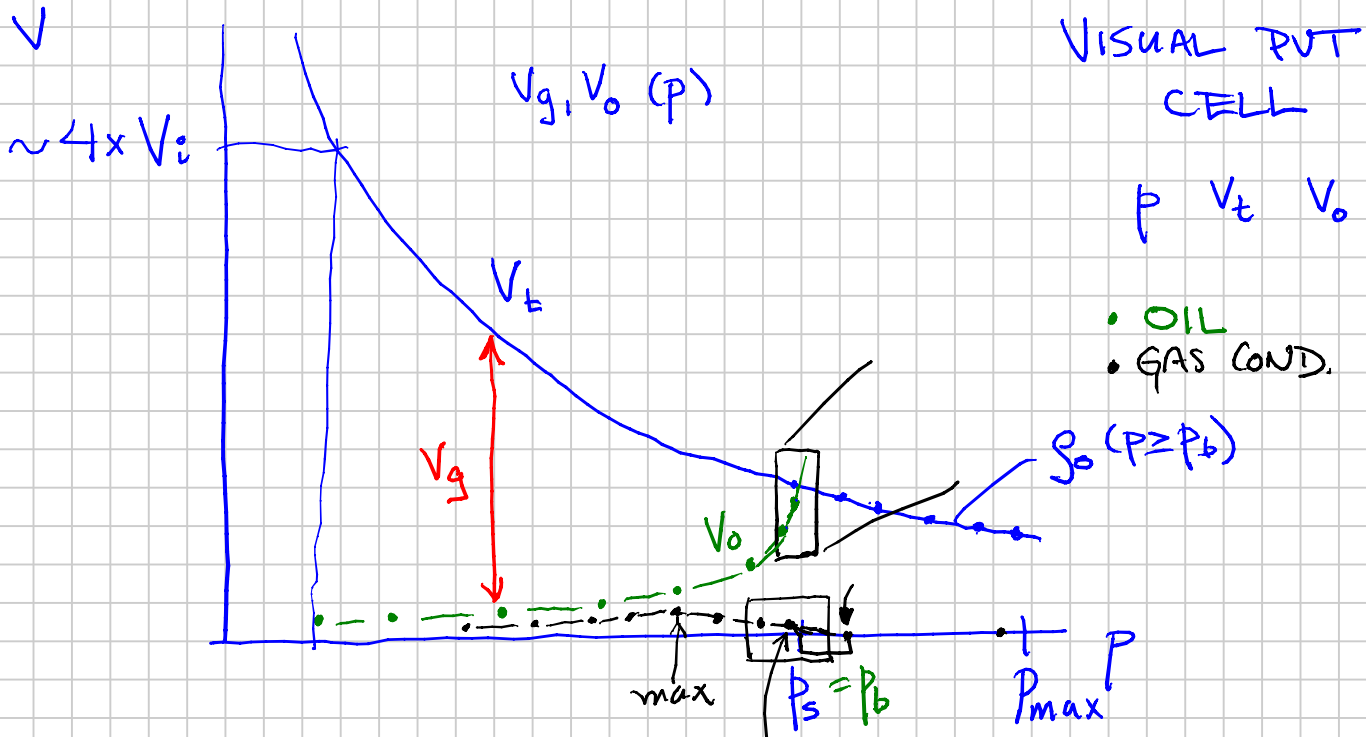
200-300 Sm^3/Sm^3

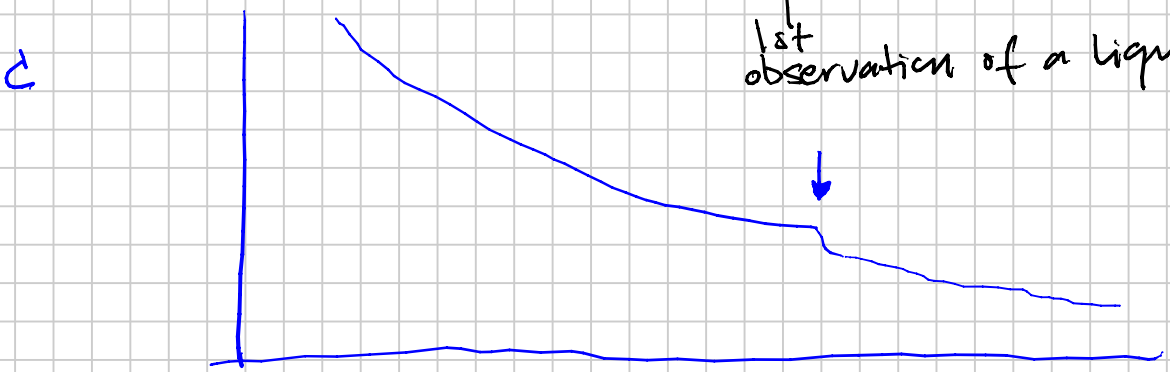


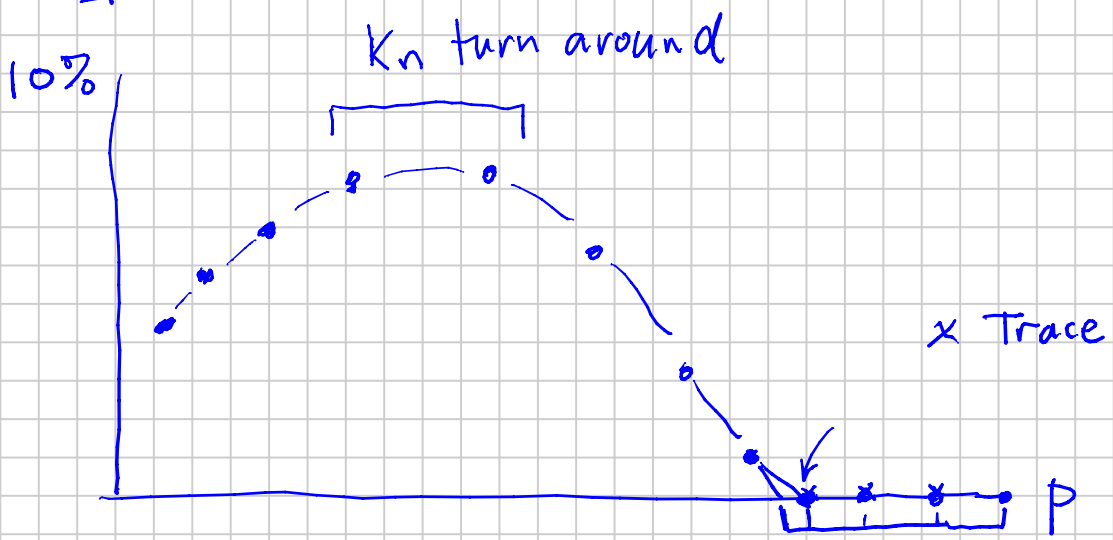
$c_o = \frac{1}{V}\frac{\Delta V}{\Delta p}$



(2) GORs ≥ 1500-2000 scf/STB OILS
300-400 Sm^3/Sm^3 ↓ GAS COND.







$P_d \pm 1 - \underline{100}$ bar

(250) Vale