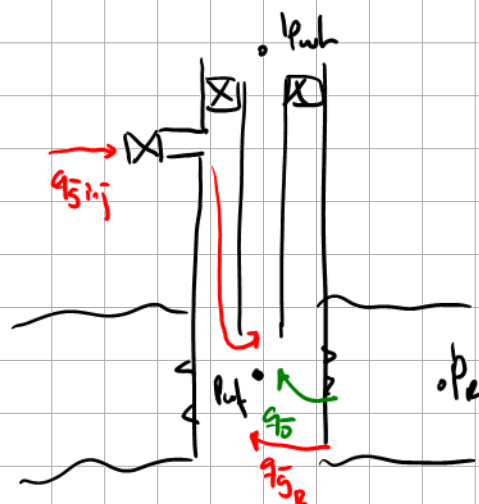
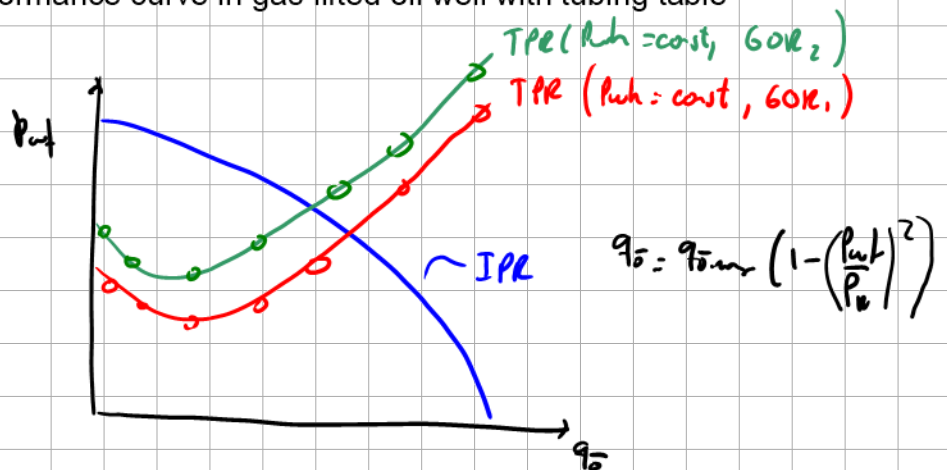


Ex. 10.1: Flow equilibrium and gas lift performance curve in gas lifted oil well with tubing table



$$G_{02} = R_{p2} = \frac{q_{gk}}{q_{fs}}$$



$\text{ln} = \text{cost}$
 Cost_i

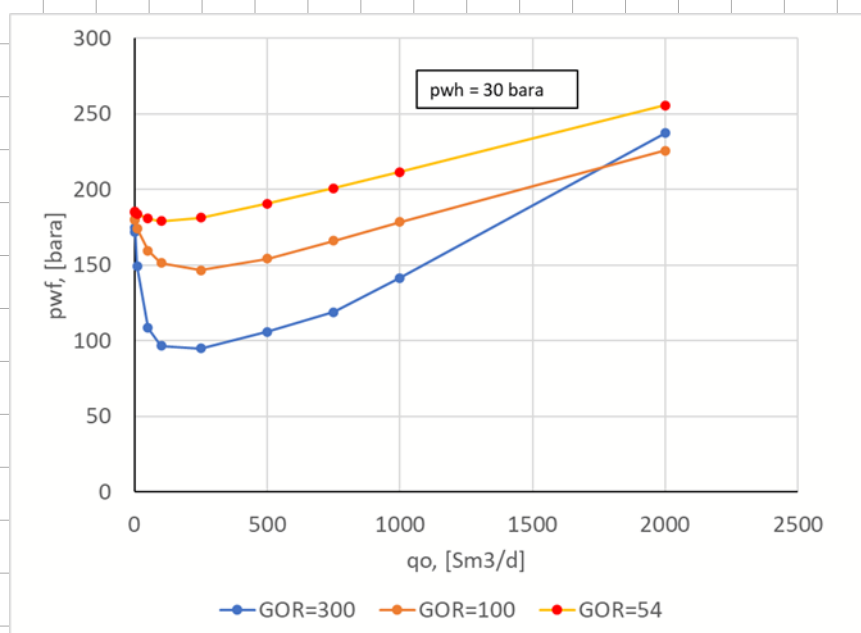
q_i	ln
1	1
2	2
3	3

$P_{\text{inh}} = \text{cost}$

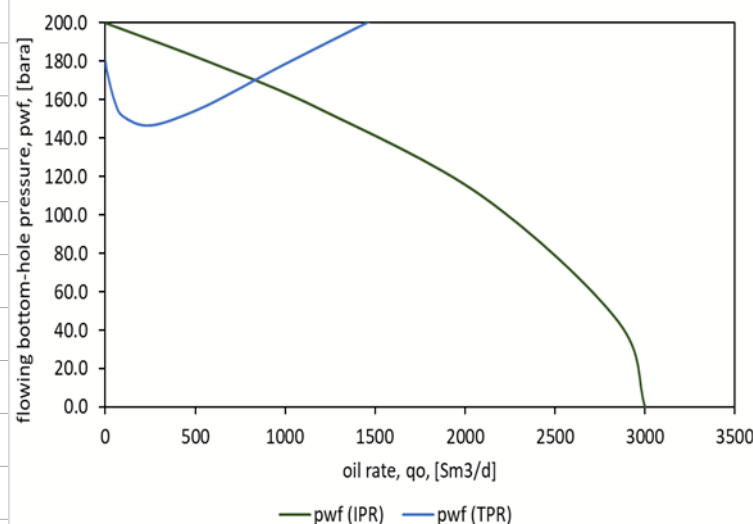
GOAL₂

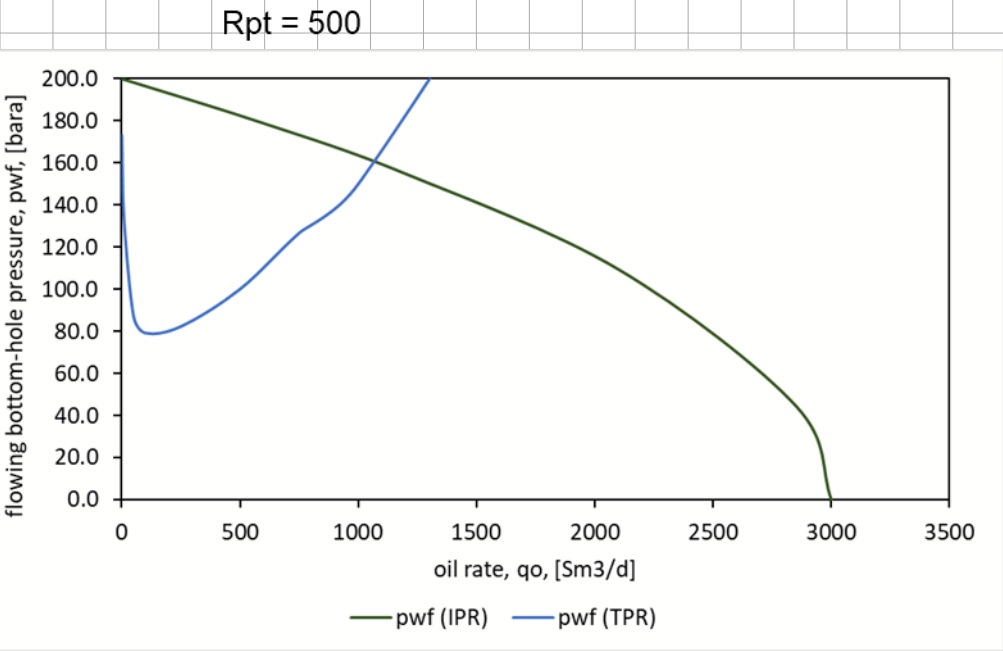
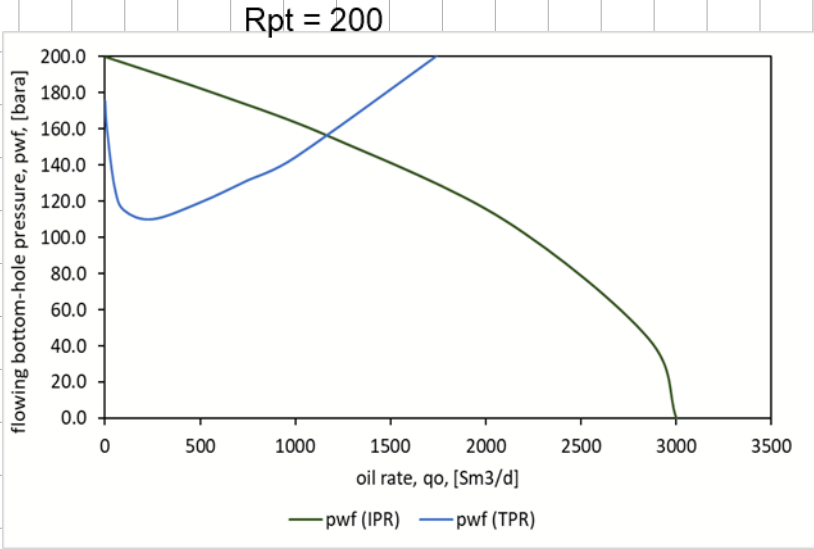
q_2	P_{inh}
.	.
.	.
.	.

qo	GOR	pwf
[Sm3/d]	[Sm3/Sm3]	[bara]
0.1	54	185.3
1	54	185.1
10	54	183.9
50	54	180.7
100	54	179.2
250	54	181.2
500	54	190.8
750	54	200.9
1000	54	211.4
2000	54	255.6
0.1	100	180.4
1	100	179.7
10	100	174.3
50	100	159.7
100	100	151.3
250	100	146.7
500	100	154.3
750	100	166.1
1000	100	178.6
2000	100	225.6
0.1	200	175.4
1	200	173.8
10	200	159.7
50	200	127.9
100	200	115
250	200	110.1
500	200	119.9



IPR			TPR				
pR	[bara]	200	pwh	[bara]	30		
qomax	[Sm3/d]	3000					
WC	[-]	0					
GOR (Rp)	[-]	100					
			R _{PT}	100			
qo/qomax	qo	pwf (IPR)	qo	pwf (TPR)	qgT	qgR	qginj
[-]	[Sm3/d]	[bara]	[Sm3/d]	[bara]	[Sm3/d]	[Sm3/d]	[Sm3/d]
0.00	0	200.0	0.1	180	1.00E+01	1.00E+01	0.00E+00
0.20	600	178.9	1	180	1.00E+02	1.00E+02	0.00E+00
0.40	1200	154.9	10	174	1.00E+03	1.00E+03	0.00E+00
0.70	2100	109.5	50	160	5.00E+03	5.00E+03	0.00E+00
0.95	2850	44.7	100	151	1.00E+04	1.00E+04	0.00E+00
1.00	3000	0.0	250	147	2.50E+04	2.50E+04	0.00E+00
			500	154	5.00E+04	5.00E+04	0.00E+00
			750	166	7.50E+04	7.50E+04	0.00E+00
			1000	179	1.00E+05	1.00E+05	0.00E+00
			2000	226	2.00E+05	2.00E+05	0.00E+00





Determine the equilibrium point:

Flow equilibrium solver									
q _o	R _{pt}	pwf (IPR)	pwf (TPR)	error	q _{gr}	q _{gtotal}	q _{ginj}	q _o	R _{pt}
[Sm ³ /d]	[Sm ³ /Sm ³]	[bara]	[bara]	[bara]	[Sm ³ /d]	[Sm ³ /d]	[Sm ³ /d]	[Sm ³ /d]	[Sm ³ /Sm ³]
939.97	700	166	166	0	9.40E+04	6.58E+05	5.64E+05	939.97	700

change, until
equals zero

Repeat for R_{pt} from 100 to 700:

