

NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

RECEIVED

C/SF C-122

APR 19 1982

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 2-22-82		APR 19 1982	
Company Yates Petroleum Corporation ✓				Connection Transwestern Pipeline Co.		O. C. D. ARTESIA, OFFICE	
Pool Pecos Slope Abo Gas				Formation Abo		Unit	
Completion Date 12-4-81		Total Depth 4260		Plug Back TD 4209		Elevation 3800.2 GL	
Field or Lease Name Godfrey "MP" Federal				Well No. 6		Unit Sec. Twp. Range I 10 7S 25E	
Csg. Size 4-1/4"	Wt. 9.5#	d 4.090	Set At 4235	Perforations: From 3684 To 3985		Well No.	
Tub. Size 2-3/8"	Wt. 4.7#	d 1.995	Set At 3790	Perforations: From To		Unit Sec. Twp. Range I 10 7S 25E	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single				Packer Set At None		County Chaves	
Producing Thru tubing		Reservoir Temp. °F 103° 3835		Mean Annual Temp. °F 62°		State New Mexico	
L 3790	H 3790	Gg .642	% CO ₂ 0.33	% N ₂ 5.97	% H ₂ S 0	Prover -	Meter Run 2"
							Flanged

FLOW DATA							TUBING DATA		CASING DATA		Duration of Flow
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h _w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	
SI							1077				days
1.	2.067	x	1.250	210	4.4	62	943	60			24 hrs
2.	2.067	x	1.250	220	7.4	63	909	60			24 hrs
3.	2.067	x	1.250	215	15.8	64	764	60			24 hrs
4.	2.067	x	1.250	220	35.0	63	529	60			24 hrs
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor F _t	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mscf
1	8.120	31.2	223.2	.9981	1.248	1.020	322
2	8.120	41.5	233.2	.9971	1.248	1.020	428
3	8.120	60.1	228.2	.9962	1.248	1.020	619
4	8.120	90.3	233.2	.9971	1.248	1.020	931
5.							

NO.	P _t	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Dry	Mcf/Std
1	.34	522	1.47	.962	A.P.L. Gravity of Liquid Hydrocarbons	Dry	Deg.
2.	.35	523	1.47	.961	Specific Gravity Separator Gas	.642	X X X X X X X X
3.	.35	524	1.48	.962	Specific Gravity Flowing Fluid	X X X X X	.642
4.	.35	523	1.47	.961	Critical Pressure	659	P.S.I.A. 659 P.S.I.A.
5.					Critical Temperature	355	R 355 R

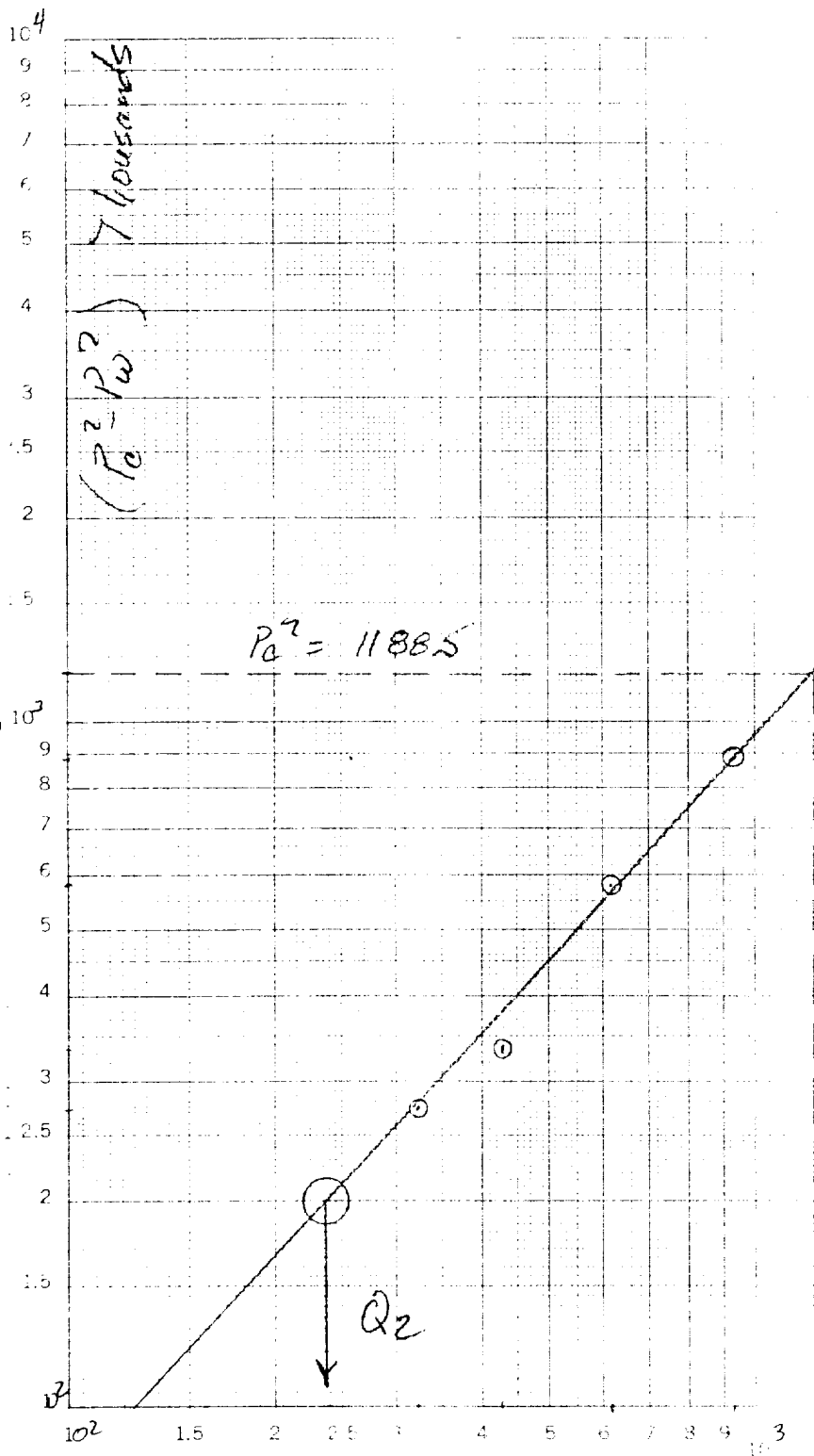
P _c 1090.2 P _c ² 1188.5				(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.3472$		(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.3153$	
NO.	P _t ²	P _w	P _w ²	P _c ² - P _w ²	AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1225$		
1	914.3		915.7	272.8			
2	850.5		852.8	335.7			
3	604.0		609.1	579.4			
4	294.0		305.9	882.6			
5							

Absolute Open Flow 1225 Mscf @ 15.025		Angle of Slope °		Slope, n .920	
Remarks:					
Approved By Commission:		Conducted By: David Weaver		Calculated By: Al Springer	
Checked By:					

ILLEGIBLE

LINE	Rate #1	Rate #2	Rate #3	Rate #4
1 Q_m	.322	.428	.619	.931
2 T_w (W.H. °R)	.520	.520	.520	.520
3 T_g (B.H. °R)	.563	.563	.563	.563
4 $T = \frac{(T_w + T_g)}{2}$	.541.5	.541.5	.541.5	.541.5
5 Z (Est.)	.866	.871	.889	.920
6 T_c	468.54	471.65	481.39	498.18
7 CH_2Z	5.188	5.159	5.054	4.881
8 e^s (Table XIV)	1.215	1.213	1.209	1.201
9 $1-e^s$ (Table XIV)	.199	.196	.193	.187
10 P_t	956.2	922.2	797.2	542.1
11 $P_t \times 2/1000$	944.3	856.5	604.0	294.0
12 F_t (Table XV)	.01825	.01823	.01823	.01823
13 $F_c = F_t T Z$	8.549	8.548	8.496	9.082
14 $F_c Q_m$	2.953	3.680	5.432	8.455
15 $L/H (F_c Q_m)^2$	7.599	13.542	29.509	91.490
16 $F_w = L/H (F_c Q_m)^2 (1-e^s)$	1.341	2.383	5.105	11.939
17 $P_w^2 = P_t^2 + F_w$	915.7	852.8	609.1	305.9
18 $F_s^2 = e^s P_w^2$	112.5	1034.5	736.5	367.4
19 F_s	10.64.8	1010.1	858.2	605.1
20 $P = \frac{P_t + P_s}{2}$	1005.5	969.6	810.7	574.2
21 $P_t = P/P_{ct}$	1.53	1.49	1.24	.89
22 $T_p = (T/T_{ct})$	1.53	1.53	1.53	1.53
23 Z (Table XI)	.866	.871	.889	.920

Yates Petroleum Corp
 Godfrey MP Fed. #6
 (I) sec 10-45-25E
 Oklaes, N.M.



AOE = 1225 mcfpd

Q mcfpd

$$(P_o^2 - P_w^2)_1 = 2,000$$

$$(P_o^2 - P_w^2)_2 = 200$$

$$Q_1 = 1,990$$

$$Q_2 = 239$$

$$\log Q_1 = 3.29747$$

$$\log Q_2 = 2.3775$$

$$n = .11972 \quad n = .920$$