

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 1-28-90	
Company Union Oil Company of California		Connection Flared	
Pool Unders. Quail Ridge Morrow		Formation Morrow	
Completion Date 1-27-90		Total Depth 13,645	Plug Back TD 13,620
Elevation 3611		Farm or Lease Name Federal 6 Com.	
Csg. Size 5-1/2"	Wt. 17#	d 5-1/2"	Set At 13645
Perforations: From 13240 To 13,338		Well No. 1	
Thg. Size 2-7/8"	Wt. 6.5#	d 2.441	Set At 13154
Perforations: From To		Unit C Sec. 6 Twp. 20-S Rge. 34-E	
Type Well - Single - Bradenhead - G.C. or G.O. Multiple Single		Packer Set At 13,154	County Lea
Producing Thru Tbg	Reservoir Temp. °F 182° 13154	Mean Annual Temp. °F	Baro. Press. - P _a
State New Mexico			
L 13154	H	G _g 0.653	% CO ₂ 0.49
% N ₂ 0.52	% H ₂ S --	Prover	Meter Run 3.068
Taps Flange			

FLOW DATA							TUBING DATA		CASING DATA		Duration of Flow
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. hw	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	
SI											
1.	3 x 1.75			315	10	74	2542		0		24 hrs
2.	3 x 1.75			410	19	73	2415	65	0		1 hr
3.	3 x 1.75			400	44	72	2322	67	0		1 hr
4.	3 x 1.75			400	81	70	2300	65	0		1 hr
5.							2250	65	0		1 hr

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow O, Mcfd
1	15.61	57.29	328.2	.9868	1.2375	1.030	1,125
2	15.61	89.67	423.2	.9877	1.2375	1.042	1,783
3	15.61	134.84	413.2	.9887	1.2375	1.041	2,681
4	15.61	182.95	413.2	.9905	1.2375	1.041	3,644
5.							

NO.	P _f	Temp. °R	T _f	Z	Gas Liquid Hydrocarbon Ratio 43.95 Mcf/bbl.			
1		534			A.P.I. Gravity of Liquid Hydrocarbons 57.6 at 60°			
2.		533			Specific Gravity Separator Gas .653			
3.		532			Specific Gravity Flowing Fluid X X X X X			
4.		530			Critical Pressure 670 P.S.I.A.			
5.					Critical Temperature 375 R			

P_c 3814.2		P_c^2 14,548						
NO	P_i^2	P_w	P_w^2	$P_c^2 - P_w^2$	(1) $\frac{P_c^2}{P_c^2 - P_w^2} =$	$\frac{6.592}{}$	(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n =$	$\frac{6.592}{}$
1		3683	13564	983.6				
2		3620	13104	1,443.7				
3		3564	12702	1,846.0				
4		3513	12341	2,206.9				
5								

$AOF = Q$ $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \frac{24.021}{}$

$$AOF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 24.021$$

Absolute Open Flow 24,021 Mcfd @ 15.025 Angle of Slope 45 Slope, n 1.00

Remarks: P_w is bottomhole pressures measured using downhole pressure gauges.

MAR 07 1990

Approved By Division	Conducted By: Kenneth Poole	Calculated By: Charles E. Pietsch	Checked By: Charles E. Pietsch
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MAR 6 1990

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HOBBS OFFICE