NEW MEXICO OIL CONSERVATION COMMISSION

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

Type Test: ☒ Initial ☐ Annual ☐ Special				Test Date: 12-3-75	
Company: Phillips Petroleum Company			Connection: Llano, Inc.		
Pool: Hat Mesa Morrow			Formation: Morrow		Unit
Completion Date: 4-20-75	Total Depth: 14700'		Plug Back TD: 14636'	Elevation: 3859' DF	Farm or Lease Name: Hat Mesa "COM"
Csg. Size: 5-1/2" / Wt.: 17 & 20 / d: / Set At: 14,640			Perforations: From 12710 To 13994		Well No.: 2
Tbg. Size: 2-7/8" / Wt.: 6.5 / d: 2.441 / Set At: 13,580			Perforations: From — To —		Unit: N / Sec.: 11 / Twp.: 21S / Rge.: 32E
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single			Packer Set At: 13540		County: Lea
Producing Thru: Tubing	Reservoir Temp. °F: 170 @ 13,700	Mean Annual Temp. °F: 60	Baro. Press. – P_a: 13.2		State: New Mexico

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
13,580	13,580	.643	—	—	—	—	X	F

	FLOW DATA					TUBING DATA		CASING DATA		
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	Duration of Flow
SI										
1.	3.000	1.5	585	4	58	4260	60	Packer		72
2.	3.000	1.5	580	12	62	3640	72	Packer		1
3.	3.000	1.5	590	18	62	3485	73	Packer		1
4.	3.000	1.5	600	30	60	3185	74	Packer		1
5.	3.000	1.5	600	30	60	2730	79	Packer		1

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	11.13	48.916	598.2	1.002	1.247	1.063	723
2.	11.13	84.371	593.2	.9981	1.247	1.061	1,240
3.	11.13	104.120	603.2	.9981	1.247	1.062	1,532
4.	11.13	135.631	613.2	1.000	1.247	1.065	2,005
5.							

NO.	P_t	Temp. °R	T_t	Z
1.	1.39	518	.89	.885
2.	1.40	522	.89	.888
3.	1.40	522	.90	.887
4.	1.39	520	.92	.881
5.				

Gas Liquid Hydrocarbon Ratio: 26,322 Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons: 58 Deg.
Specific Gravity Separator Gas: .643 XXXXXXXXX
Specific Gravity Flowing Fluid: XXXXX .750
Critical Pressure: 670 P.S.I.A. 667 P.S.I.A.
Critical Temperature: 373 R 408 R

P_c 4273.2 P_c^2 18260

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1	13346	3654.3	13354	4906
2	12237	3501.4	12260	6000
3	10228	3203.4	10262	7998
4	8084	2849.3	8119	10141
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = \frac{18260}{10141}$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.698$

$AOF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 3405$

Absolute Open Flow: 3,405 Mcfd @ 15.025 | Angle of Slope θ: 48 | Slope, n: .9

Remarks: Calculation made by electronic calculator. Program based on New Mexico Manual for back-pressure testing.

Approved By Commission	Conducted By:	Calculated By:	Checked By:
	Robert Lee D. L. Thorp, Jr.	D. E. Simpson	