

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 6/18/01			
Company PHILLIPS PETROLEUM COMPANY				Connection				
Pool Osudo; Morrow, West (Gas)				Formation MORROW				Unit
Completion Date 05/21/01		Total Depth 13,475'		Plug Back TD 13390'		Elevation 3705'		Farm or Lease Name BUTKUS "2" STATE
Csg Size 4.5 Liner	Wt. 13.5	d 3.920	Set At 13475	Perforations: From 13104' To 13207'			Well No. 1	
Tbg Size 2.375	Wt. 4.7	d 1.995	Set At 13190	Perforations: From To			Unit Sec Twp Rge P/16 2 21S 34E	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple SINGLE					Packer Set At 13018		County LEA	
Producing Thru TUBING		Reservoir Temp. °F 180 @ 13156		Mean Annual Temp °F 60		Baro. Press. - P _a 13.2		State NM
L 13156	H 13156	G _g 0.596	% CO ₂ 0.502	% N ₂ 0.365	% 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. h _w	Temp °F	Press. p.s.i.g.	Temp °F	Press. p.s.i.g.	Temp °F	
SI						3568	86			66.0
1.	3.068	2.0	694	8.4	93	3501	89			1.0
2.	3.068	2.0	709	38.3	97	3357	91			1.0
3.	3.068	2.0	708	98.8	83	3093	94			1.0
4.	3.068	2.0	708	162.9	72	2807	99			1.0
5.										

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 Q, Mcfd
1.	21.32	77.10	707.6	0.9696	1.2953	1.0480	2167
2.	21.32	166.33	722.3	0.9660	1.2953	1.0475	4657
3.	21.32	266.92	721.1	0.9784	1.2953	1.0526	7606
4.	21.32	342.69	720.9	0.9883	1.2953	1.0571	9903
5.							

NO	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio 96.317 Mcf/bbl
1.	1.05	553	1.56	0.911	A.P.I. Gravity of Liquid Hydrocarbons 50.4 Deg.
2.	1.07	557	1.57	0.911	Specific Gravity Separator Gas 0.596 XXXXXXXXXX
3.	1.07	543	1.53	0.903	Specific Gravity Flowing Fluid XXXX 0.626
4.	1.07	532	1.50	0.895	Critical Pressure 674 P.S.I.A. 673 P.S.I.A.
5.					Critical Temperature 355 R 365 R

P _c 3543.1	P _c ² 12553		
NO	P _r ²	P _w ²	P _c ² - P _w ²
1.	3494	12206	347
2.	3426	11739	814
3.	3337	11133	1420
4.	3263	10647	1907
5.			

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 6.5842$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 5.3803$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 53283$

Absolute Open Flow 53283 Mcfd @ 15.025	Angle of Slope θ 48.3	Slope, n 0.892
Remarks:		

Approved By: <i>[Signature]</i> Paul Dodson	Conducted By: ARC Pressure Data, Inc.	Calculated By: Rod Dodson	Checked By:
--	--	------------------------------	-------------

GAS WELL BACK-PRESSURE CURVE

PHILLIPS PETROLEUM CO.
BUTKUS "2" STATE #1
LEA COUNTY, NM
6/18/01

$n = 0.892$

$\theta = 48.3^\circ$

AOF = 53283 Mcf/day

