

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 2-26-91	
Company BHP PETROLEUM AMERICAS INC.		Connection FLARE	
Pool WILDCAT <i>Montoya</i>		Formation MONTOKA	
Completion Date 2-23-91		Total Depth 6810	
Plug Back TD 6600		Elevation 3940	
Form or Lease Name PUFFER STATE		Well No. #1	
Coq. Size 5.50	Wt. 15.5	d 4.950	Set At 6810
Thq. Size 2.875	Wt. 6.5	d 2.441	Set At 6265
Perforations: From 6371 To 6452		Perforations: From - To -	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple SINGLE (GAS)		Packer Set At 6265	
Producing Thru TBG. (GAS)		Baro. Press. - P _a 13.2	
Reservoir Temp. °F 128 @ 6412		Mean Annual Temp. °F 60.0	
County CHAVES		State N.M.	
L 6412	H 6412	G _g 0.660	% CO ₂ 1.70
		% N ₂ 4.37	% H ₂ S 0.0
Prover 0		Meter Run 4.0	
Taps FLG.			

FLOW DATA						TUBING DATA		BHP 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									2450	128	72.0
1.	4.00 x 1.500		520	26.0	72	0	0	0	2325	128	1.0
2.	4.00 x 1.500		520	34.0	72	0	0	0	2290	128	1.0
3.	4.00 x 1.500		520	58.0	68	0	0	0	2204	128	1.0
4.	4.00 x 2.000		520	61.0	62	0	0	0	1788	128	1.0
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, Mcfd
1	10.85	117.74	533.2	0.9887	1.2309	1.0458	1625
2	10.85	134.64	533.2	0.9887	1.2309	1.0458	1858
3	10.85	175.86	533.2	0.9924	1.2309	1.0471	2440
4	19.83	180.35	533.2	0.9981	1.2309	1.0493	4611
5							

NO.	P _t	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	A.P.I. Gravity of Liquid Hydrocarbons	Specific Gravity Separator Gas	Specific Gravity Flowing Fluid	Critical Pressure	Critical Temperature
1	0.80	532	1.47	0.914	0	0	0.660	XXXXXX	669	362
2	0.80	532	1.47	0.914			XXXXX	0.660		
3	0.80	528	1.46	0.912						
4	0.80	522	1.44	0.908						
5										

NO.	P _t ²	P _w ²	P _w ²	P _t ² - P _w ²
1	5468	1948	3794	412
2	5303	1919	3681	525
3	4916	1848	3417	790
4	3243	1508	2273	1934
5				

(1) $\frac{P_t^2}{P_t^2 - P_w^2} = 2.1754$

AOF = Q $\left[\frac{P_t^2}{P_t^2 - P_w^2} \right]^n = 7910$

(2) $\left[\frac{P_t^2}{P_t^2 - P_w^2} \right]^n = 1.7155$

Absolute Open Flow	7910	Mcfd @ 15.025	Angle of Slope θ	55.2	Slope, n	0.694
--------------------	------	---------------	------------------	------	----------	-------

Remarks: CHOKE SIZES 7.5/64 , 9/64 , 11/64 , 14.5/64

Approved By Division	Conducted By: BENNETT-CATHEY	Calculated By: JIM SMITH	Checked By:
----------------------	---------------------------------	-----------------------------	-------------