

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 7/18/84			
Company HNG Oil Company				Connection Trans Western					
Pool Pitch Fork Ranch				Formation Morrow				Unit	
Completion Date 1/27/84		Total Depth 15160'		Plug Back TD 15080'		Elevation 3432' GL		Farm or Lease Name Madera 32 State	
Cas. Size 5 1/2"	Wt. 20.0	d	Set At 14338'	Perforations: From 14932' To 15026'				Well No. 2	
Trg. Size 2 7/8"	Wt. 7.9	d	Set At 14033'	Perforations: Open Ended From To				Unit Sec. Twp. Rge. J 32 24s 34e	
Type Well - Single - Bradenhead - G.C. or G.O. Multiple Single						Packer Set At 14033'		County Lea	
Producing Thru Tubing		Reservoir Temp. °F -		Mean Annual Temp. °F 60		Baro. Press. - P _a 13.2		State New Mexico	
L 15026'	H -	G _g 0.5925	% CO ₂ 0.527	% N ₂ 0.170	% H ₂ S -	Prover -	Meter Run 4.026	Taps F	

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. DWT	Temp. °F	Press. p.s.i.g.		Temp. °F
SI							6315	63	PACKER		24.0 hrs
1.	4.026		2.125	800	6	79	6224	63			1.0 hr
2.	4.026		2.125	810	13	84	6149	63			1.0 hr
3.	4.026		2.125	820	27	83	6000	63			1.0 hr
4.	4.026		2.125	820	56	84	5725	62			1.0 hr
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, Mscf/d
1	22.60	69.85	813.2	0.9822	1.299	1.058	2130.93
2	22.60	103.45	823.2	0.9777	1.299	1.057	3138.55
3	22.60	149.99	833.2	0.9786	1.299	1.057	4554.70
4	22.60	216.01	833.2	0.9777	1.299	1.057	6553.48
5							

NO.	R _i	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	389.944	Mcf/24hr.
1	1.20	539	1.54	0.894	A.P.I. Gravity of Liquid Hydrocarbons	50.2	Deg.
2	1.22	544	1.55	0.895	Specific Gravity Separator Gas	0.5925	XXXXXX
3	1.23	543	1.55	0.895	Specific Gravity Flowing Fluid	XXXXX	
4	1.23	544	1.55	0.895	Critical Pressure	675	P.S.I.A.
5					Critical Temperature	350	°R

P _c 8051.2 P _c ² 64821.8				(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 52.53$		(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 11.38$	
NO.	P _i ²	P _w ²	P _w ² *	P _c ²	P _c ² - P _w ²		
1		7974.2	63587.9	1233.9			
2		7922.2	62761.3	2060.5			
3		7786.2	60624.9	4196.9			
4		7572.2	57338.2	7483.6			
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Absolute Open Flow		24250	Mcf/d @ 15.025	Angle of Slope @	58° 27'	Slope, n	0.614
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Remarks: * BOTTOM HOLE PRESSURE @ (-11594)15026' USED FOR PRESSURE CALCULATIONS

Approved By Division	Conducted By: Duke Services, Inc.	Calculated By: Joe A. Coleman	Checked By: PE #2208 Joe A. Coleman
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