

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special					Test Date 5/3/95				
Company MARATHON OIL COMPANY				Connection PIPE LINE					
Pool <i>Indian Basin Morrow</i> DAGGER DRAW FIELD				Formation MORROW				Unit F	
Completion Date MARCH 17, 1995		Total Depth 9460		Plug Back TD 9460		Elevation 3711 G.L.		Farm or Lease Name NORTH INDIAN BASIN UNIT	
Csq. Size 7.000	Wt. 23	d 6.366	Set At 9480	Perforations: From 9309 To 9327		Well No. 15			
Thq. Size 2.875	Wt. 6.5	d 2.441	Set At 9244	Perforations: From 9369 To 9384		Unit Sec. Twp. Rye. S2-T21S-R23E			
Type Well - Single - Bradenhead - G.G. or G.O. Multiple SINGLE (GAS)					Packer Set At 9236		County EDDY		
Producing Thru GAS - TBG		Reservoir Temp. °F 148 @ 9347		Mean Annual Temp. °F 60.0		Baro. Press. - P _a 13.2		State NEW MEXICO	
L 9347	H 9347	G _g .581	% CO ₂ .71	% N ₂ .08	% H ₂ S .00	Prover .0	Meter Run 3.000	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							2549	60			72
1.	3.00 X 2.000			676	4.0	71	1903	79	0.	0.	1.2
2.	3.00 X 2.000			684	9.6	71	1467	80	0.	0.	1.3
3.	3.00 X 2.000			684	13.6	71	1011	79	0.	0.	1.3
4.	3.00 X 2.000			684	16.0	71	699	78	0.	0.	1.2
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	21.53	52.49	688.9	.9901	1.3119	1.0525	1545
2	21.53	81.86	697.2	.9901	1.3119	1.0531	2411
3	21.53	95.06	697.2	.9901	1.3119	1.0531	2800
4	21.53	105.62	697.2	.9901	1.3119	1.0531	3111
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NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio _____ 0 _____ Mcf/bbl.
1	1.02	531	1.51	.903	A.P.I. Gravity of Liquid Hydrocarbons _____ 0 _____ Deg.
2	1.03	531	1.51	.902	Specific Gravity Separator Gas _____ .581 _____ X X X X X X X X
3	1.03	531	1.51	.902	Specific Gravity Flowing Fluid _____ X X X X X _____ .581
4	1.03	531	1.51	.902	Critical Pressure _____ 676 _____ P.S.I.A. _____ 676 _____ P.S.I.A.
5					Critical Temperature _____ 351 _____ R _____ 351 _____ R

P _c 2562.2 P _c ² 6565				
NO.	P _r ²	P _w	P _w ²	P _c ² - P _w ²
1	3672	1907	3638	2927
2	2191	1486	2209	4355
3	1049	1052	1107	5458
4	507	769	592	5973
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.0990$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 3413$

(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.0970$

Absolute Open Flow _____ 3413 _____ Mcfd @ 15.025	Angle of Slope _____ 45.6 _____	Slope, n _____ .980 _____
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Remarks: CHOKE SIZES: 1ST RATE = 10/64, 2ND RATE = 14/64, 3RD RATE = 18/64, 4TH RATE = 64/64

Approved By Division	Conducted By: ARC PRESSURE DATA, INC.	Calculated By: JIM SMITH	Checked By: CHAD MAJOR
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