

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS

Type Test: ☒ Initial ☐ Annual ☐ Special		Test Date: 10-11-85		O. C. D. ARTESIA, OFFICE	
Company: Mesa Petroleum Co.		Connection: Northern Natural			
Pool: Diamond Mound Atoka		Formation: Morrow		Unit: L	
Completion Date: 10-9-85		Total Depth: 9260'	Plug Back TD: 9167'	Elevation: 3621'	Form or Lease Name: Mesa State Com
Csg. Size: 4.5000	Wt.: 11.60	d:	Set At: 9259'	Perforations: From 9042' To 9050'	Well No.: 3
Tbg. Size: 2.3750	Wt.: 4.70	d:	Set At: 8945'	Perforations: From 0 To 0	Unit: L Sec. 31 Twp. 15S Rge. 29E
Type Well: Single - Bradenhead - G.G. or G.O. Multiple			Packer Set At: 8945'	County: Chaves 28	
Producing Thru: tubing		Reservoir Temp. °F: 161 @ 9046'	Mean Annual Temp. °F: 60°	Baro. Press. - P _g : 13.20 psia	State: New Mexico
L: 9046	H: 9046	G _g : 0.660	% CO ₂ : 0.33	% N ₂ : 0.61	% H ₂ S: 0
Prover: 0		Meter Run: 4.0	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							2609	70°			72.0
1.	4.03 x 2.250			390	7.0	70°	2472	84°	0	0	1.0
2.	4.03 x 2.250			400	16.0	61°	2417	80°	0	0	1.0
3.	4.03 x 2.250			420	26.0	54°	2250	80°	0	0	1.0
4.	4.03 x 2.250			450	50.0	40°	1978	78°	0	0	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 Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	25.64	53.13	403.2	0.9905	1.2309	1.0395	1727
2	25.64	81.31	413.2	0.9990	1.2309	1.0431	2675
3	25.64	106.13	433.2	1.0058	1.2309	1.0479	3531
4	25.64	152.18	463.2	1.0198	1.2309	1.0570	5178
5							

NO.	P _r	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	0.60	530	1.41	0.925	26.022	56.3	0.660	XXXXXX	670	375
2	0.62	521	1.39	0.919				XXXXXX		
3	0.65	514	1.37	0.911						
4	0.69	500	1.33	0.895						
5										

NO.	P _c	P _w	P _w ²	P _c ² - P _w ²
1	2609.3	6809	2465	6079
2			2439	5948
3			2303	5303
4			2121	4499
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.9476$

(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2.8137$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 14,569$

Absolute Open Flow: 14,569 Mcfd @ 15.025

Angle of Slope: 46.25

Slope, n: .957

Remarks:

Approved By Division	Conducted By: Bennett & Cathey	Calculated By: Bennett & Cathey	Checked By: <i>Charles Cummings</i>
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