

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test: ☒ Initial ☐ Annual ☐ Special				Test Date: 7-15-82	
Company: ARCO Oil and Gas Company				Connection: Northern Natural Gas Company	
Pool: Eumont				Formation: Queen	
Completion Date: 3-23-82		Total Depth: 3950		Plug Back TD: 3939	
Elevation: G.L. 3508.7		Farm or Lease Name: W. C. Roach			
Ceq. Size: 5 1/2"	Wt.: 15.5#	d: 4.95	Set At: 3950	Perforations: From 3476 To 3620	
Thq. Size: 2 3/8"	Wt.: 4.7#	d: 1.995	Set At: 3910	Perforations: From NA To	
Type Well: Single - Bradenhead - G.C. or G.O. Multiple				Packer Set At:	
Dual Eumont Queen Gas/Eunice Monument Grayburg SA 3661				County: Lea	
Producing Thru Csg.:		Reservoir Temp. °F: 98		Mean Annual Temp. °F: 60	
		3548		Baro. Press. - P _a : 13.2	
State: New Mexico					
L: 3548	H: 3548	G _g : .710	% CO ₂ : .029	% N ₂ : .033	% H ₂ S: .041
Prover: 2		Meter Run: 2		Taps: Flg.	

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									258		72 Hrs.
1.	4 x 1.00			89	7	78			257		1 Hr.
2.	4 x 1.00			91	14	78			257		1 Hr.
3.	4 x 1.00			93	28	81			255		1 Hr.
4.	4 x 1.375			95	27.5	81			254		1.5 Hrs.
5.	4 x 1.375			97	38.5	78			228		23.5 Hrs.

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	4.946	25.95	96.2	.9831	1.187	Nil	150
2	4.946	38.19	104.2	.9831	1.187	Nil	220
3	4.946	54.53	106.2	.9804	1.187	Nil	314
4	10.2	54.55	108.2	.9804	1.187	Nil	647
5	10.2	65.14	110.2	.9831	1.187	Nil	775

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	.14	538	1.38	Nil			.710		671	391
2	.16	538	1.38	Nil						
3	.16	541	1.38	Nil						
4	.16	541	1.38	Nil						
5	.16	538	1.38	Nil						

NO.	P _c	P _w	P _w ²	P _c ² - P _w ²
1	271.2	270.2	73.01	.54
2		270.2	73.01	.54
3		268.2	71.93	1.62
4		267.2	71.40	2.15
5		241.2	58.18	15.37

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 4.785$

(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 4.785$

AOG = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 3708$

Absolute Open Flow: 3708 Mcfd @ 15.025

Angle of Slope: 45°

Slope, n: 1.0

Remarks: No liquids produced.

Approved By Division:	Conducted By: Ross Trevino	Calculated By: J. Cogburn	Checked By: S. Smith
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