

NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

C.S.F.
Form C-122
Revised 6-65

RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special					Test Date 7/7/80		JUL 23 1980	
Company Southland Royalty Company					Connection Northern Natural Gas		O. C. D.	
Pool Undesignated <i>Atoka</i>					Formation Atoka		Unit ARTESIA, OFFICE	
Completion Date 7/7/80		Total Depth 11,750'		Plug Back TD 11,650'		Elevation 3558.2' Gr		Farm or Lease Name Empire ¹ / ₄ Fed ¹ / ₄ Comm
Csg. Size 4 1/2"	Wt. 13.5#	d 3.92	Set At 11,650'	Perforations: From 10,752' To 10,778'		Well No. 1		
Tbg. Size 2 3/8"	Wt. 4.7#	d 1.995	Set At 10,607	Perforations: From To		Unit Sec. Twp. Rye. C Sec 27, T-18-S		
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single					Packer Set At 10,607		County Eddy	
Producing Thru tubing		Reservoir Temp. °F 185 @ 10765		Mean Annual Temp. °F 60.0		Baro. Press. - P _a 13.2		State New Mexico
L 10765	H 10765	Gg 0.640	% CO ₂ 0.01	% N ₂ 0.	% H ₂ S 0.	Prover 0.	Meter Run 2.1	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							3715.	75.			24.0
1.	2.07 X 1.250			270.	26.0	73.	3215.	77.	0.	0.	1.0
2.	2.07 X 1.250			270.	45.0	67.	3010	78.	0.	0.	1.0
3.	2.07 X 1.250			270.	51.0	65.	2790.	80.	0.	0.	1.0
4.	2.07 X 1.250			390.	62.0	64.	2400.	80.	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	8.12	85.81	283.2	0.9877	1.2500	1.0265	883
2	8.12	112.89	283.2	0.9933	1.2500	1.0272	1169
3	8.12	120.18	283.2	0.9952	1.2500	1.0275	1247
4	8.12	158.11	403.2	0.9962	1.2500	1.0396	1662
5							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
1.	0.42	533.	1.44	0.949	A.P.I. Gravity of Liquid Hydrocarbons <u>57.5</u> Deg.
2.	0.42	527.	1.42	0.948	Specific Gravity Separator Gas <u>0.640</u> X X X X X X X X
3.	0.42	525.	1.42	0.947	Specific Gravity Flowing Fluid <u>X X X X X</u> <u>0.640</u>
4.	0.60	524.	1.41	0.925	Critical Pressure <u>671</u> P.S.I.A. <u>671</u> P.S.I.A.
5.					Critical Temperature <u>371</u> R <u>371</u> R

P _c 3709.4 P _c ² 13760				
NO.	P _r ²	P _w	P _w ²	P _c ² - P _w ²
1	10421.	3210.	10306.	3454.
2	9140.	3008.	9048.	4714.
3	7858.	2787.	7766.	5993.
4	5824.	2407.	5793.	7967.
5				

(1) $\frac{P_c^2}{P_r^2 - P_w^2} = 1.7271$ (2) $\left[\frac{P_c^2}{P_r^2 - P_w^2} \right]^n = 1.5128$

AOF = Q $\left[\frac{P_c^2}{P_r^2 - P_w^2} \right]^n = 2514.$

Posted 10-2-80
with 7-30-80
SI

Absolute Open Flow <u>2514.</u> Mcfd @ 15.025	Angle of Slope θ <u>52.9</u>	Slope, n <u>0.758</u>
Remarks:		
Approved By Commission:	Conducted By: B.J. Well Service	Calculated By: Ray F. Nokes
		Checked By: Don R. Craig