



Southland Royalty Company

May 10, 1978

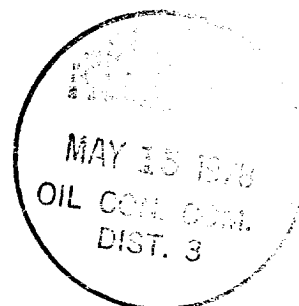
New Mexico Oil Conservation Commission
1000 Rio Brazos Road
Aztec, New Mexico 87410

Gentlemen:

The following is the deviation record for Southland Royalty Company's Harper #1A well located in Section 14, ~~T32N~~^{31N}, R12W, San Juan County, New Mexico.

Dev. 1/4° at 222'
Dev. 1/2° at 706'
Dev. 1/2° at 960'
Dev. 3/4° at 1483'
Dev. 1° at 1976'
Dev. 1-1/4° at 2325'
Dev. 1-1/2° at 2807'

Dev. 1-1/2° at 3090'
Dev. 1-3/4° at 4674'
Dev. 1-3/4° at 3110'
Dev. 2° at 5471'



Yours truly,

SOUTHLAND ROYALTY COMPANY

L. O. Van Ryan
District Production Manager

LOVR/dg

State of New Mexico
County of San Juan

The foregoing instrument was acknowledged before me this 10th day of May, 1978, by L. O. Van Ryan of Southland Royalty Company, on behalf of said Company.

My Commission Expires: 11-20-78

NOTARY PUBLIC

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

Form C-122
 Revised 9-1-65

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 5-2-78	
Company Southland Royalty Company		Connection Southern Union Gathering	
Pool Blanco		Formation Mesa Verde	
Completion Date 4-19-78		Total Depth 5471'	Plug Back TD 5432'
Elevation 6251' GR		Farm or Lease Name Harper	
C.G. Size 7.000 4.500	Wt. 20# 10.50#	d 6.456 4.052	Set At 3090 2942-5465
Perforations: From 4920' To 5400'		Well No. #1A	
Tbg. Size 2.375	Wt. 4.7#	d 1.995	Set At 5405'
Perforations: From To		Unit Soc. Twp. Rgt. G-14-31N-12W	
Type Well - Single - Bradenhead - C.G. or G.O. Multiple Single		Packer Set At ----	County San Juan
Producing Thru Tbg	Reservoir Temp. °F ρ	Mean Annual Temp. °F	Baro. Press. - P _a 12.2
State New Mexico			
L	H	G _g .700	% CO ₂
		% N ₂	% H ₂ S
Prover		Meter Run	Taps

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.	
SI							675		677	
1.	2"	X	3/4"				260		600	1 hr
2.							219		588	2 hrs
3.							215		578	3 hrs
4.										
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. Comp. Factor, F _{pv}	Rate of Flow Q, Mhd
1	12.365		227.2	1.0000	.9258	1.0000	2,601
2.							
3.							
4.							
5.							

NO.	P _f	Temp. °R	T _f	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
1.					A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
2.					Specific Gravity Separator Gas _____ X X X X X X X X
3.					Specific Gravity Flowing Fluid _____ X X X X X
4.					Critical Pressure _____ P.S.I.A. _____ P.S.I.A.
5.					Critical Temperature _____ R _____ R

NO.	P _f ²	P _w	P _w ²	P _f ² - P _w ²
1	689.2	590.2	348,336	126,661
2				
3				
4				
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 3.7501$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 7,009$

(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2.6949$

Absolute Open Flow	7,009	Mcf @ 15.025	Angle of Slope θ	Slope, n
Remarks: Unloading slugs of water and heavy mist through test				

Approved By Commission:	Conducted By: Jim Bacon	Calculated By: James Smith	Checked By:
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