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See Rule 401 & Rule 1122

State of New Mexico
Geology, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

RECEIVED

Form C-122 *dst*
Revised 4-1-91 *File*

MAR 01 1993

O. C. D.
APPROVED

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator HALLWOOD PETROLEUM						Lease or Unit Name CATCLAW DRAW UNIT					
Type Test ☒ Initial (Recamp) ☐ Annual ☐ Special						Test Date 2-11-93			Well No. 4		
Completion Date 2-7-93		Total Depth 10700		Plug Back TD 10515		Elevation 3387' KB			Unit Lr. - Sec. - TWP - Rge. Sec 24 T21S 25E		
Csg. Size 5 1/2	Wt. 17. #	d 20. #	Set At 10700	Perforations: From: 10454 To: 10508			County Eddy				
Tbg. Size 2 3/8	Wt. 4.7	d 1.995	Set At 10377	Perforations: From: To:			Pool Catclaw Draw (Morrow)				
Type Well - Single - Bradenhead - G.G. or G.O. Multiple single						Packer Set At 10377			Formation MORROW		
Producing Thru csg		Reservoir Temp. °F 166		Mean Annual Temp. °F 60		Baro. Press - P _a 13.2			Connection VENTED		
L 10320	H 10320	Gg .582	% CO ₂ .91	% N ₂ .20	% H ₂ S	Prover		Meter Run 4.026		Taps flg.	

FLOW DATA					TUBING DATA		CASING DATA		Duration of Flow	
NO.	Prover Line Size	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						3400		Pkr.		70 hr.
1.	4 X	2.750	200	9.00	78	3330		"		45min
2.	4 X	2.750	210	18.00	76	3275		"		45min
3.	4 X	2.750	270	24.00	74	3160		"		45min
4.	4 X	2.750	300	27.00	80	3110		"		30min
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, F _{spv}	Rate of Flow Q, Mcfd
1.	41.10	43.80	213.2	.9831	1.311	1.016	2357
2.	41.10	63.39	223.2	.9850	1.311	1.017	3422
3.	41.10	82.42	283.2	.9868	1.311	1.022	4479
4.	41.10	91.96	313.2	.9813	1.311	1.024	4979
5.							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Dry Gas	Mcf/bbl.
1.	.31	538	1.53	.968	A.P.I. Gravity of Liquid Hydrocarbons	Dry	Deg.
2.	.33	536	1.53	.966	Specific Gravity Separator Gas	.582	XXXXXXXXXX
3.	.42	534	1.52	.957	Specific Gravity Flowing Fluid	XXXXXX	
4.	.46	540	1.54	.953	Critical Pressure	672	P.S.I.A. P.S.I.A.
5.					Critical Temperature	350	R R

P_c **3432.9** P_c² **11784.8**

NO.	P _t ²	P _w	P _w ²	P _c ² - P _w ²
1.		3386.1	11465.7	319.1
2.		3345.9	11195.1	589.7
3.		3298.5	10880.1	904.7
4.		3271.1	10700.1	1084.7
5.				

1) $\frac{P_c^2}{P_c^2 - P_w^2} = \frac{10.865}{P_c^2 - P_w^2}$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \frac{4.204}{P_c^2 - P_w^2}$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \frac{20,932}{P_c^2 - P_w^2}$

Absolute Open Flow 20,932 Mcfd @ 15.025		Angle of Slope θ 59	Slope, n .602
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Remarks: * BHP INSTRUMENT SET @ THIS DEPTH
WELL MADE 1/2 BBL H₂O DURING TEST

Approved By Division	Conducted By: PRO WELL TESTERS	Calculated By: BM	Checked By: BM
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