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appropriate district office.
See Rule 401 & Rule 1122

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

Form C-122
Revised October, 1999

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator PATTERSON PETROLEUM				Lease or Unit Name N. TWINBERRY 5 ST.			
Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 2/14/06	Well No. 1
Completion Date		Total Depth 13770		Plug Back TD 13665		Elevation	Unit Ltr - Sec - TWP - Rge
Csg. Size 5 1/2	Wt. 17#	d	Set At 13770	Perforations: From: 13337 To: 13665		County LEA	
Tbg. Size 2 3/8	Wt. 4.7	d 1.995	Set At 13197	Perforations: From: OPEN To: END		Pool VACUUM; MORROW	
Type Well-Single-Bradenhead-G.G. or G.O. Multiple SINGLE				Packer Set At 13197		Formation MORROW	
Producing Thru TBG		Reservoir Temp. °F 185 @ 13197		Mean Annual Temp. °F 60		Baro. Press. - P _a 13.2	
L 13197	H 13197	Gg 0.897	%CO ₂ 0.834	%N ₂ 2.834	%H ₂ S	Prover N/A	Meter Run 3.068
Taps FLG							

FLOW DATA				TUBING DATA				CASING DATA				Duration of Flow
No.	Prover Line Size	Orifice x 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						2125		PKR		48 HRS		
1		2"				2068				1 HR		
2		"				1879				1 HR		
3		"				1198				1 HR		
4		"				800				1 HR		
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 Compress Factor F _{pv}	Rate of Flow Q. Mcfd
1							530
2							901
3				TOTAL	FLOW	METER	1,510
4							1,280
5							

No.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	26.33	Mcf bbl.
1					A.P. I. Gravity of Liquid Hydrocarbons	58	Deg.
2		N/A			Specific Gravity Separator Gas	0.897	XXXXXXX
3					Specific Gravity Flowing Fluid	XXXXXX	Gmix = .997
4					Critical Pressure	P.S.I.A. * 657	P.S.I.A.
5					Critical Temperature	R. * 481	R

P _c 2138.2		P _{c2} 4571.9	
No.	P _t ²	P _w	P _w ²
1		2083.8	4342.1
2		1899.8	3609.1
3		1235.5	1526.5
4		844.9	713.9
5			

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = \frac{19896}{79825}$		(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \frac{4.447}{2.357}$	
AOF = Q			

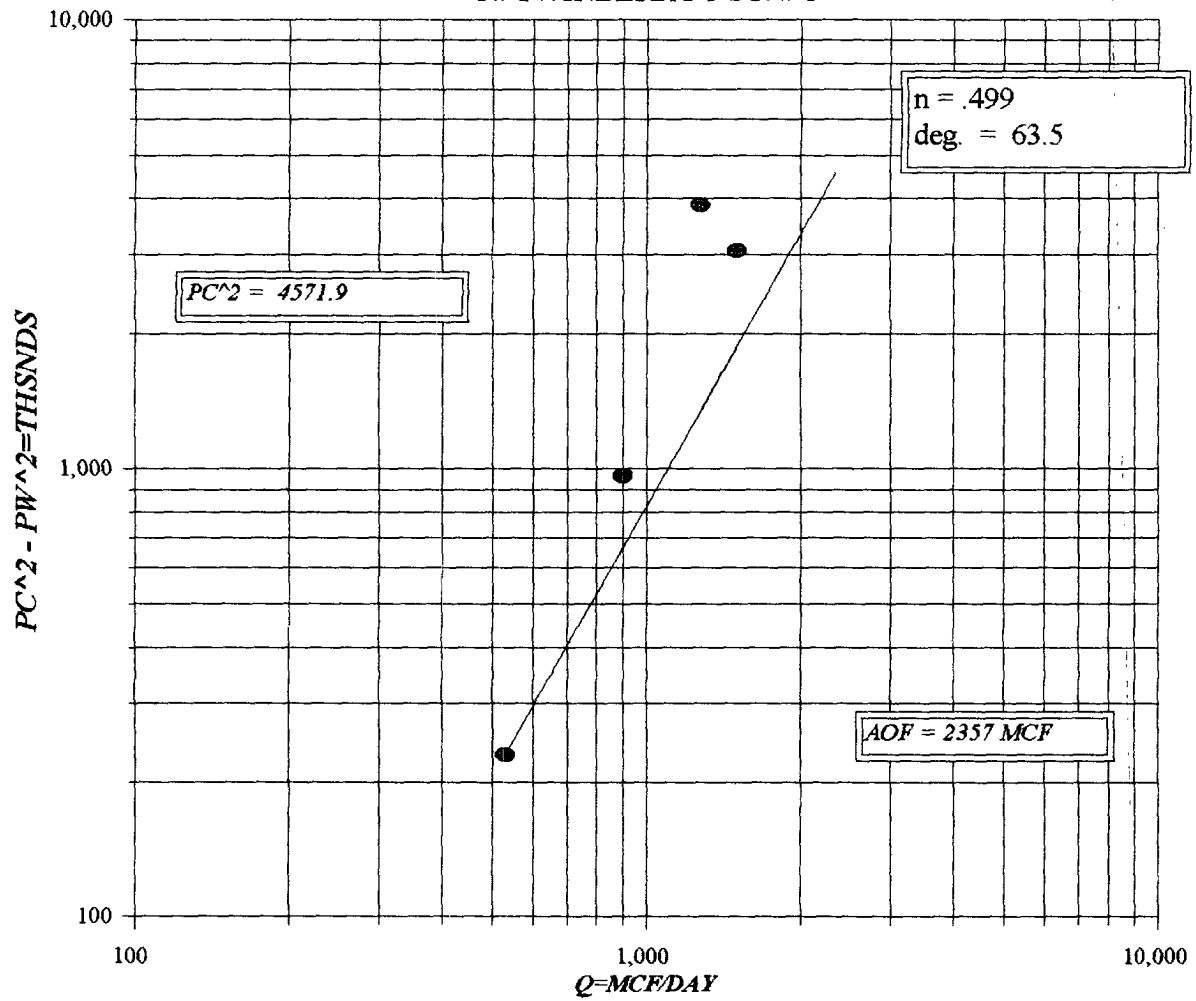
Absolute Open Flow	2,357	Mcf/d @ 15.025	Angle of Slope (°)	63.5	Slope n:	0.499
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Remarks: **WELL PRODUCED 6.68 BBLS OIL & 5.54 BBLS H2O API GR. = 58.0 * = CORR. TO 2.834 % N2**

Approved By Division: 	Conducted By: Metering & Testing Serv., Inc.	Calculated By: BM	Checked By: BM
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PATTERSON PETROLEUM

N. TWINBERRY 5 ST. # 1



NEW MEXICO G.O.R./G. MIX

NO. OF BBLs PRODUCED = 6.7
API GRAVITY @ 60 DEG. = 58.0

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SPECIFIC GRAVITY OF GAS = 0.8970

XX

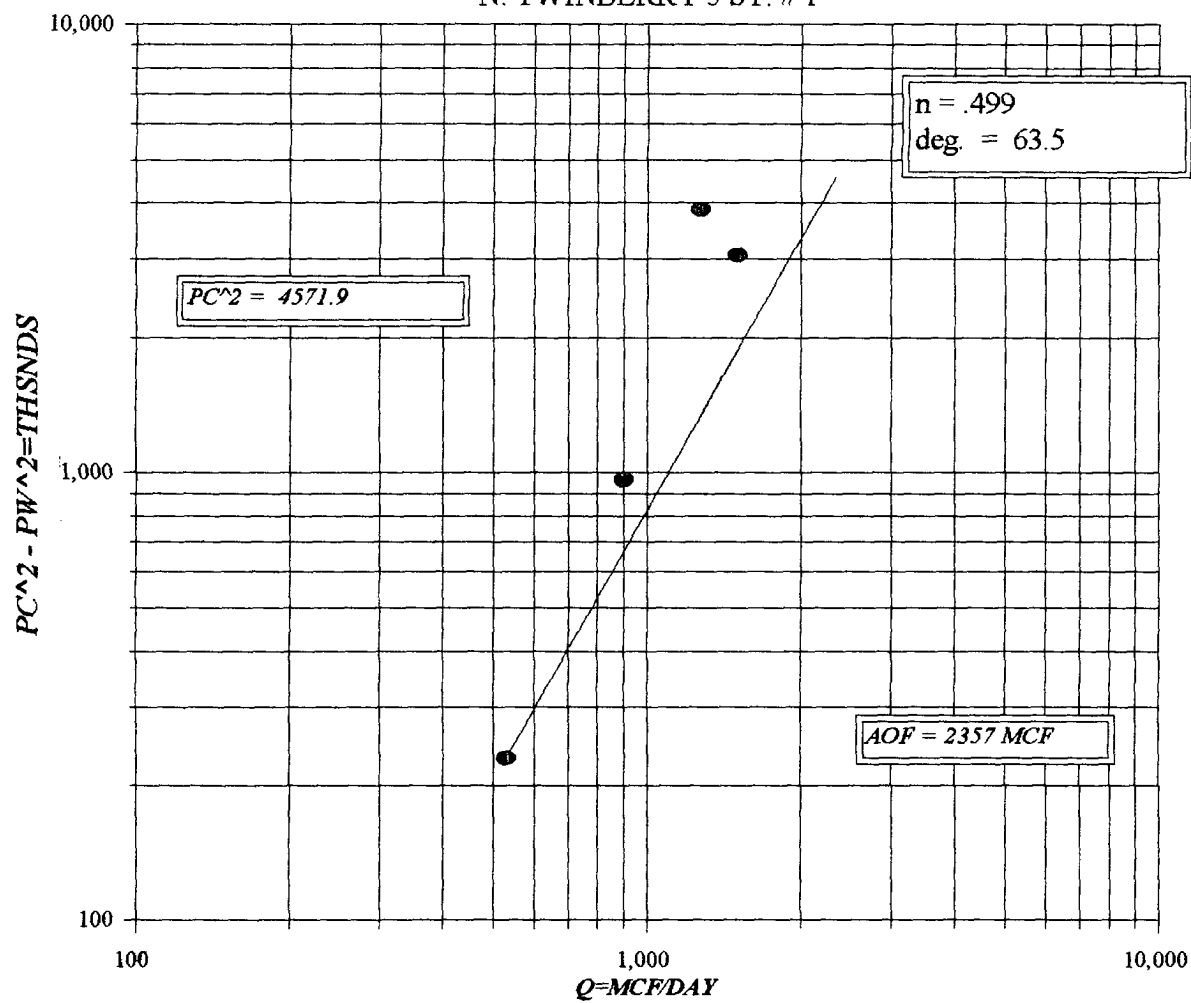
TOTAL GAS PRODUCED = 176

G.O.R. = 26.329

G.MIX = 0.997

PATTERSON PETROLEUM

N. TWINBERRY 5 ST. # 1



UNIT :
L : 13197
%CO2 : 0.834
d : 1.995

SECTION :
H : 13197
%N2 : 2.834
Fr : 0.018231

TOWNSHIP :
L/H : 1
G/GMIX : 0.997
H2S :
GH : 13157.4

DATE : 2-14-06
RANGE :

Pc = 2138.2
Pc2 = 4571.9
Pt2 = 4331.4
Pw = 2083.8
3580.4
1899.8
1467.0
1235.5
661.3
844.9

VOL 1 : 530
VOL 2 : 901
VOL 3 : 1510
VOL 4 : 1280

PSIA 1 : 2081.2
PSIA 2 : 1892.2
PSIA 3 : 1211.2
PSIA 4 : 813.2

RESV.TEMP 185.0
SHUT-IN PR= 2138.2

PCR : 657
TCR : 481

Pc2-Pw2= 229.8
Pw2 = 4342.1
962.8
3609.1
3045.4
1526.5
3858.0
713.9

n = 0.499

LINE	RATE 1	RATE 2	RATE 3	RATE 4	
	1ST	2ND	1ST	2ND	1ST
1 QM	0.530	0.530	0.901	0.901	1.510
2 TW	534	534	534	534	534
3 Ts	645.0	645.0	645.0	645.0	645.0
4 T	589.5	589.5	589.5	589.5	589.5
PR (est)	3.17	2.88	1.84	1.24	
5 Z(est)	0.546	0.684	0.536	0.649	0.599
6 TZ	321.8	403.4	315.8	382.7	353.0
7 GH/TZ	40.886	32.618	41.666	34.376	37.269
8 eS	4.633	3.398	4.771	3.630	4.045
9 l-e-S	0.784	0.706	0.790	0.724	0.753
10 Pt	2081.2	2081.2	1892.2	1892.2	1211.2
11 Pt2 /1000	4331.4	4331.4	3580.4	3580.4	1467.0
12 Fr	0.018231	0.018231	0.018231	0.018231	0.018231
13 Fc=FrTZ	5.867	7.354	5.757	6.978	6.436
14 FcQm	3.11	3.90	5.19	6.29	9.72
15 L/H(FcQm)	9.7	15.2	26.9	39.5	94.5
16 Fw	7.581984	10.72079	21.26618	28.63740	71.10688
17 Pw2	4339.0	4342.1	3601.7	3609.1	1538.1
18 Ps2	20102.6	14754.4	17182.4	13099.2	6222.3
19 Ps	4483.6	3841.1	4145.2	3619.3	2494.5
20 P	3282.4	2961.2	3018.7	2755.7	1852.8
21 Pr	5.00	4.51	4.59	4.19	2.82
22 Tr	1.23	1.23	1.23	1.23	1.23
23 Z	0.684	0.642	0.649	0.616	0.534

Pc2/(Pc2-Pw2) = 19.896
4.748
1.501
1.185

[Pc2/Pc2-Pw2]n = 4.447
2.176
1.225
1.088

AOF= Q 2.357
1.960
1.849
1.393

FORM C122-D



Laboratory Services, Inc.

2609 West Marland
Hobbs, New Mexico 88240

Telephone: (505) 397-3713

FOR: Metering & Testing Services, Inc.
Attention: Tom Duncan
2807 W. County Road
Hobbs, New Mexico 88240

SAMPLE:
IDENTIFICATION: N. Twinberry 5 St. #1
COMPANY: Patterson Petroleum
LEASE:
PLANT:

SAMPLE DATA: DATE SAMPLED: 2/14/06 1:05pm
ANALYSIS DATE: 2/14/06
PRESSURE - PSIG 35
SAMPLE TEMP. °F 57
ATMOS. TEMP. °F 51

GAS (XX) LIQUID ()
SAMPLED BY: Floyd
ANALYSIS BY: Vicki McDaniel

REMARKS:

COMPONENT ANALYSIS

COMPONENT	MOL PERCENT	GPM
Hydrogen Sulfide (H2S)		
Nitrogen (N2)	2.834	
Carbon Dioxide (CO2)	0.634	
Methane (C1)	81.607	
Ethane (C2)	8.517	2.272
Propane (C3)	3.747	1.030
I-Butane (IC4)	0.506	0.165
N-Butane (NC4)	0.977	0.307
I-Pentane (IC5)	0.257	0.094
N-Pentane (NC5)	0.245	0.089
Hexane Plus (C6+)	0.676	0.293
	100.000	4.250

BTU/CU.FT. - DRY 1170
AT 14.650 DRY 1166
AT 14.650 WET 1146
AT 14.73 DRY 1173
AT 14.73 WET 1152

MOLECULAR WT. 20.2254

SPECIFIC GRAVITY -
CALCULATED 0.697
MEASURED