

Submit in duplicate to
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

30-025-21304

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator LATIGO				Lease or Unit Name FEDERAL A			
Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 11/15/04	Well No. 5
Completion Date		Total Depth		Plug Back TD 6300		Elevation	Unit Ltr - Sec - TWP - Rge 13 - 9 - 35
Csg. Size 5 1/2	Wt. 15.5	d	Set At	Perforations: From: 4738 To: 4790			County LEA
Tbg. Size 2 3/8	Wt. 4.7	d 1.995	Set At 4709	Perforations: From: OPEN To: ENDED			Pool
Type Well-Single-Bradenhead-G.G. or G.O. Multiple SINGLE				Packer Set At 4709		Formation San Andres	
Producing Thru TBG		Reservoir Temp. °F 109.2 @ 4738		Mean Annual Temp. °F 60		Baro. Press. - P _a 13.2	
L 4709		H 4709		Gg 0.819	%CO ₂ 12.5	%N ₂ 9.533	%H ₂ S X
				Prover N/A	Meter Run 3.068	Taps FLG	
FLOW DATA				TUBING DATA		CASING DATA	
No.	Prover Line Size	Orifice Size	Press p.s.i.g.	Diff. h _w	Temp. °F	Press p.s.i.g.	Temp. °F
SI						484	PKR
1	3 X .500		96	1.69	50	470	"
2	3 X .500		96	16.81	49	462	"
3	3 X 1.000		83	6.76	48	450	"
4	3 X 1.000		89	34.81	50	376	"
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}
1	1.183		13.58	109.2	1.01	1.105	1.015
2	1.183		42.84	109.2	1.011	1.105	1.015
3	4.789		25.5	96.2	1.012	1.105	1.015
4	4.789		59.65	102.2	1.01	1.105	1.015
5							
No.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio DRY GAS Mcf/bbl.		
1	0.15	510	1.33	0.971	A.P. I. Gravity of Liquid Hydrocarbons DRY Deg.		
2	0.15	509	1.33	0.971	Specific Gravity Separator Gas 0.819 XXXXXXXX		
3	0.13	508	1.32	0.971	Specific Gravity Flowing Fluid XXXXXX N/A		
4	0.14	510	1.33	0.971	Critical Pressure * 702 P.S.I.A. N/A P.S.I.A.		
5					Critical Temperature * 382 R N/A R		
P _c 497.2		P _{c2} 247.2					
No.	P _t ²	P _w	P _w ²	P _c ² - P _w ²	(1) $P_c^2 = \frac{P_c^2 - P_w^2}{P_c^2 - P_w^2} = 2.643$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2.643$		
1		483.2	233.5	13.7			
2		475.3	225.9	21.3			
3		463.6	215	32.3			
4		392	153.7	93.5			
5							
Absolute Open Flow 856				Mcf/d @ 15.025	Angle of Slope (°)	45	Slope n: 1
Remarks: NO FLUID PRODUCED * CORRECTED TO 12.5% CO2 & 9.533% N2							
Approved By Division: 		Conducted By: Metering & Testing Serv., Inc.		Calculated By: BM		Checked By: BM	

L : 4709 H : 4709 L/H : 1 G/GMIX : 0.819
 %CO2 : 12.5 %N2 : 9.533 H2S : DATE : 11-15-04
 d : 1.995 Fr : 0.018231 GH : 3856.7 RANGE : 35

Pt2 = 233.5 Pw = 483.2 *
 225.8 475.3 *
 214.6 463.6 *
 151.5 392.0 *

VOL 1 : 18 PSIA 1 : 483.2 RESV.TEMP 109.2
 VOL 2 : 58 PSIA 2 : 475.2
 VOL 3 : 139 PSIA 3 : 463.2 SHUT-IN PR= 497.2
 VOL 4 : 324 PSIA 4 : 389.2

Pc2-Pw2= 13.7 Pw2 = 233.5 *
 21.3 225.9 *
 32.3 215.0 *
 93.5 153.7 *

PCR : 702
 TCR : 382

n = 1.000 ✓

Pc2/(Pc2-Pw2) = 18.019
 11.593
 7.664
 2.643 ✓

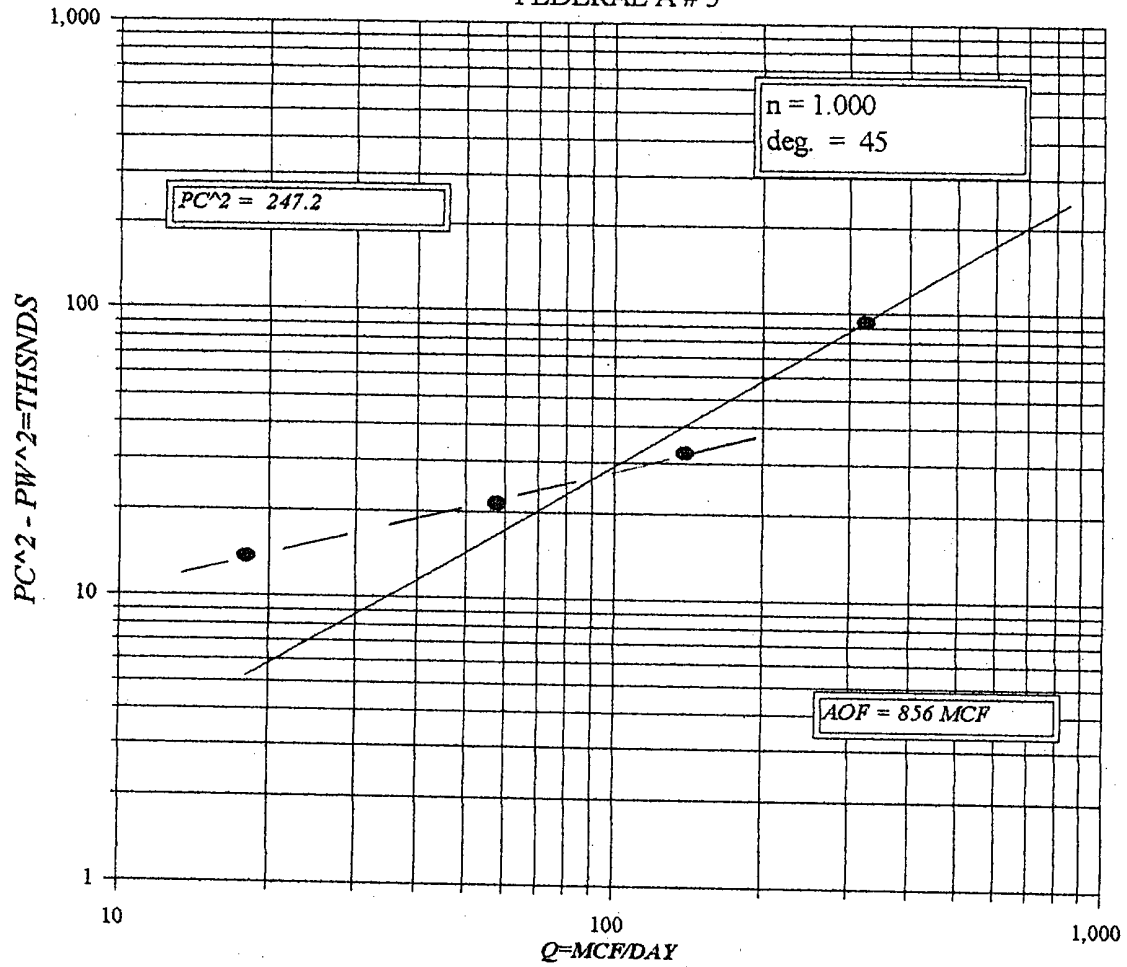
LINE		RATE 1		RATE 2		RATE 3		RATE 4	
		1ST	2ND	1ST	2ND	1ST	2ND	1ST	2ND
1	QM	0.018	0.018	0.058	0.058	0.139	0.139	0.324	0.324
2	TW	534	534	534	534	534	534	534	534
3	Ts	569.2	569.2	569.2	569.2	569.2	569.2	569.2	569.2
4	T	551.6	551.6	551.6	551.6	551.6	551.6	551.6	551.6
	PR (est)	0.69		0.68		0.66		0.55	
5	Z(est)	0.900	0.894	0.901	0.895	0.903	0.897	0.915	0.910
6	TZ	496.4	493.2	497.1	493.9	498.2	495.0	504.5	501.8
7	GH/TZ	7.769	7.820	7.758	7.808	7.742	7.791	7.645	7.686
8	eS	1.338	1.341	1.338	1.340	1.337	1.339	1.332	1.334
9	l-e-S	0.253	0.254	0.252	0.254	0.252	0.253	0.249	0.250
10	Pt	483.2	483.2	475.2	475.2	463.2	463.2	389.2	389.2
11	Pt2 /1000	233.5	233.5	225.8	225.8	214.6	214.6	151.5	151.5
12	Fr	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231
13	Fc=FrTZ	9.051	8.992	9.063	9.005	9.082	9.025	9.198	9.148
14	FcQm	0.16	0.16	0.53	0.52	1.26	1.25	2.98	2.96
15	L/H(FcQm)	0.0	0.0	0.3	0.3	1.6	1.6	8.9	8.8
16	Fw	0.006707	0.006657	0.069751	0.069243	0.401554	0.398699	2.213386	2.1998478
17	Pw2	233.5	233.5	225.9	225.9	215.0	215.0	153.7	153.7
18	Ps2	312.5	313.1	302.2	302.7	287.4	287.9	204.7	205.0
19	Ps	559.0	559.5	549.7	550.2	536.1	536.6	452.5	452.8
20	P	521.1	521.4	512.4	512.7	499.6	499.9	420.8	421.0
21	Pr	0.74	0.74	0.73	0.73	0.71	0.71	0.60	0.60
22	Tr	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44
23	Z	0.894	0.894	0.895	0.895	0.897	0.897	0.910	0.910

[Pc2/Pc2-Pw2]n = 18.019
 11.593
 7.664
 2.643 ✓

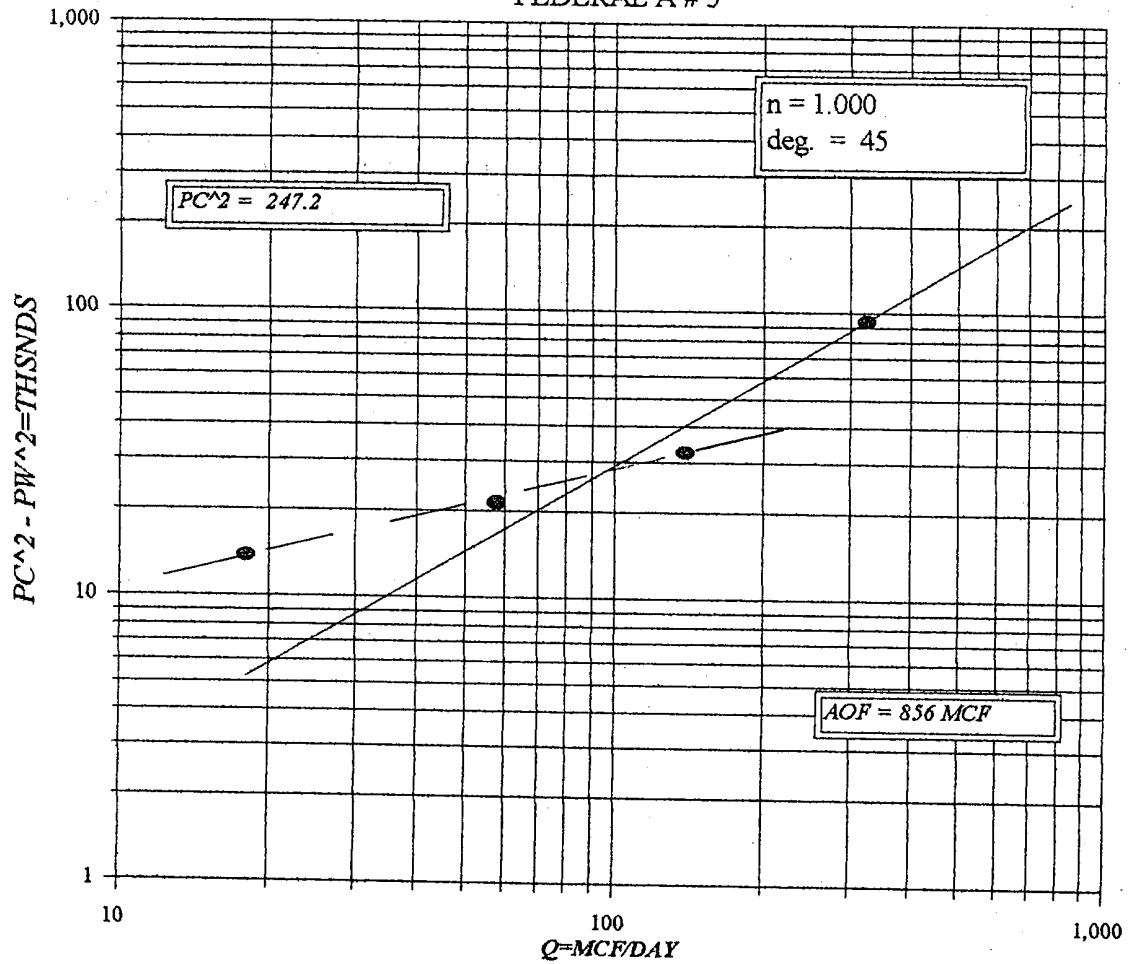
AOF= Q 0.324
 0.672
 1.065
 0.856 ✓

FORM C122-D

LATIGO
FEDERAL A # 5



LATIGO
FEDERAL A # 5



Company : LAT 190
Well No: FEDERAL A #5
Test Date: 11-15-04
Formation: _____
County: LCA
State: NM
Test Type: 4 point

Meter Run Size: 3,068"
Orifice Meter Range: 1000"/100"
Tbg Size: 2 3/8"
Csg Size:
Perfs:
Packer Depth:
TD / PBTD:

Phone No: (505) - 397 - 1631
Fax No: (505) - 397 - 0990

Running Totals:

Oil: _____
Water: _____

tb_g 2³/₈ @ 4709
cs_g 5¹/₂ - 15.5# - @

top perf - 4738

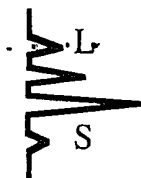
Bottom perf - 4790

PBTD — 6300

sec. 13 - T9S - R35E

GASTEMP

Date	Time	Choke	TBG FX	CSG PX	Oil Meter	Oil Per Hr	Total Oil	Water Meter	H2O- Per Hr	Total Water	Diff Press	Static Px	Gas - MC/F	Comments:
	10:45		484		Over									PLATE 1,500
	11:00	6/64	479	400							1.5	3.3	23.9	COEF 4.8315
	11:15	6/64	470	430							1.1	3.3	17.5	
	11:30	6/64	470	480							1.2	3.3	19.1	
	11:45	6/64	470	500							1.3	3.3	20.7	
	12:00	8/64	465	480							3.5	3.3	55.8	
	12:15	8/64	462	490							3.8	3.3	60.5	
	12:30	8/64	462	490							4.1	3.3	65.3	
	12:45	8/64	462	490							4.1	3.3	65.3	
	1:00	13/64	455	490							9.8	3.3	156	PLATE CHANGE
	1:15	13/64	452	480							2.6	3.1	157	1,000
	1:30	13/64	450	480							2.6	3.1	157	19,5475
	1:45	13/64	450	480							2.6	3.1	157	
	2:00	18/64	420	490							6.8	3.2	425	
	2:15	18/64	405	500							6.3	3.2	392	
	2:30	18/64	390	500							5.9	3.2	369	
	2:45	18/64	376	500							5.9	3.2	369	



Laboratory Services, Inc.

2609 West Marland
Hobbs, New Mexico 88240

Telephone: (505) 397-3713

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

SAMPLE:
IDENTIFICATION Federal A #5
COMPANY: Latigo
LEASE:
PLANT:

SAMPLE DATA: DATE SAMPLED 11/15/04 2:00 pm
ANALYSIS DATE: 11/16/04
PRESSURE - PSIA 110
SAMPLE TEMP. °F 48
ATMOS. TEMP. °F 48

GAS (XX) LIQUID ()
SAMPLED BY: Floyd Davis
ANALYSIS BY: Vickie Biggs

REMARKS:

COMPONENT ANALYSIS

COMPONENT	MOL PERCENT	GPM
Hydrogen Sulfide (H2S)		
Nitrogen (N2)	9.533	
Carbon Dioxide (CO2)	12.500	
Methane (C1)	65.741	
Ethane (C2)	6.718	1.792
Propane (C3)	3.227	0.887
I-Butane (IC4)	0.391	0.128
N-Butane (NC4)	0.819	0.258
I-Pentane (IC5)	0.225	0.082
N-Pentane (NC5)	0.198	0.072
Hexane Plus (C6+)	0.648	0.281
	100.000	3.500

BTU/CU.FT. - DRY 951
AT 14.650 DRY 948
AT 14.650 WET 932
AT 14.73 DRY 953
AT 14.73 WET 937

MOLECULAR WT. 23.7673

SPECIFIC GRAVITY -
CALCULATED 0.819
MEASURED