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

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator	ENSIGN OPERATING				Lease or Unit Name	KEY "20"			
Type Test: ☑ Initial ☐ Annual ☐ Special					Test Date: 4/28/03	Well No.: 1			
Completion Date: 4/27/03	Total Depth: 13759			Plug Back TD: 13627	Elevation	Unit Ltr - Sec - TWP - Rge: 20 13S 35E			
Csg. Size: 4 1/2	Wt.: 11.6	d: 4	Set At: 13759	Perforations: From: 13320 To: 13333		County: LEA			
Tbg. Size: 2 3/8	Wt.: 4.7	d: 1.995	Set At: 13308	Perforations: From: To:		Pool:			
Type Well-Single-Bradenhead-G.G. or G.O. Multiple: SINGLE				Packer Set At: 13,321'		Formation: MORROW			
Producing Thru: Tubing	Reservoir Temp.°F: 186	Mean Annual Temp. °F: 60		Baro. Press.-P_a: 13.2		Connection: AIR			

L	H	Gg	$\%CO_2$	$\%N_2$	$\%H_2S$	Prover	Meter Run	Taps
13308	13308	0.631	0.818	0.769	N/A	N/A	4.026	FLG

	FLOW DATA				TUBING DATA		CASING DATA		
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	Duration of * Flow
SI					4055	N/A	PKR	N/A	
1	4.026 X 1.750	620	3	80	2789				1 HR.
2	4.026 X 1.750	610	7	80	2233				1 HR.
3	4.026 X 1.750	610	10	80	1785				1 HR.
4	4.026 X 1.750	610	12	70	1526				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	14.93	43.58	633.2	0.9813	1.259	1.047	841
2	14.93	66.04	623.2	0.9813	1.259	1.047	1275
3	14.93	78.94	623.2	0.9813	1.259	1.047	1523
4	14.93	86.5	623.2	0.9813	1.259	1.047	1692
5							

No.	P_r	Temp. °R	T_r	Z
1	0.8	540	1.46	0.912
2	0.8	540	1.46	0.912
3	0.8	540	1.46	0.912
4	0.78	530	1.44	0.905
5				

Gas Liquid Hydrocarbon Ratio	12.693	Mcf bbl.	
A.P. I. Gravity of Liquid Hydrocarbons	60 @60	Deg.	
Specific Gravity Separator Gas	0.631	XXXXXXX	
Specific Gravity Flowing Fluid	XXXXX	G MIX = .844	
Critical Pressure	673 P.S.I.A.	647	P.S.I.A.
Critical Temperature	368 R.	438	R

P_c 4068.2 P_c^2 16550.2

No.	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		2806.3	7875.2	8675.9
2		2256.6	5092.3	11457.9
3		1815.5	3296.1	13254.1
4		1564	2446	14104.2
5				

(1) $\dfrac{P_c^2}{P_c^2 - P_w^2} = 1.173$ (2) $\left[\dfrac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.173$

AOF = Q $\left[\dfrac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.985$

Absolute Open Flow	1985	Mcfd @ 15.025	Angle of Slope ():	45	Slope n: 1

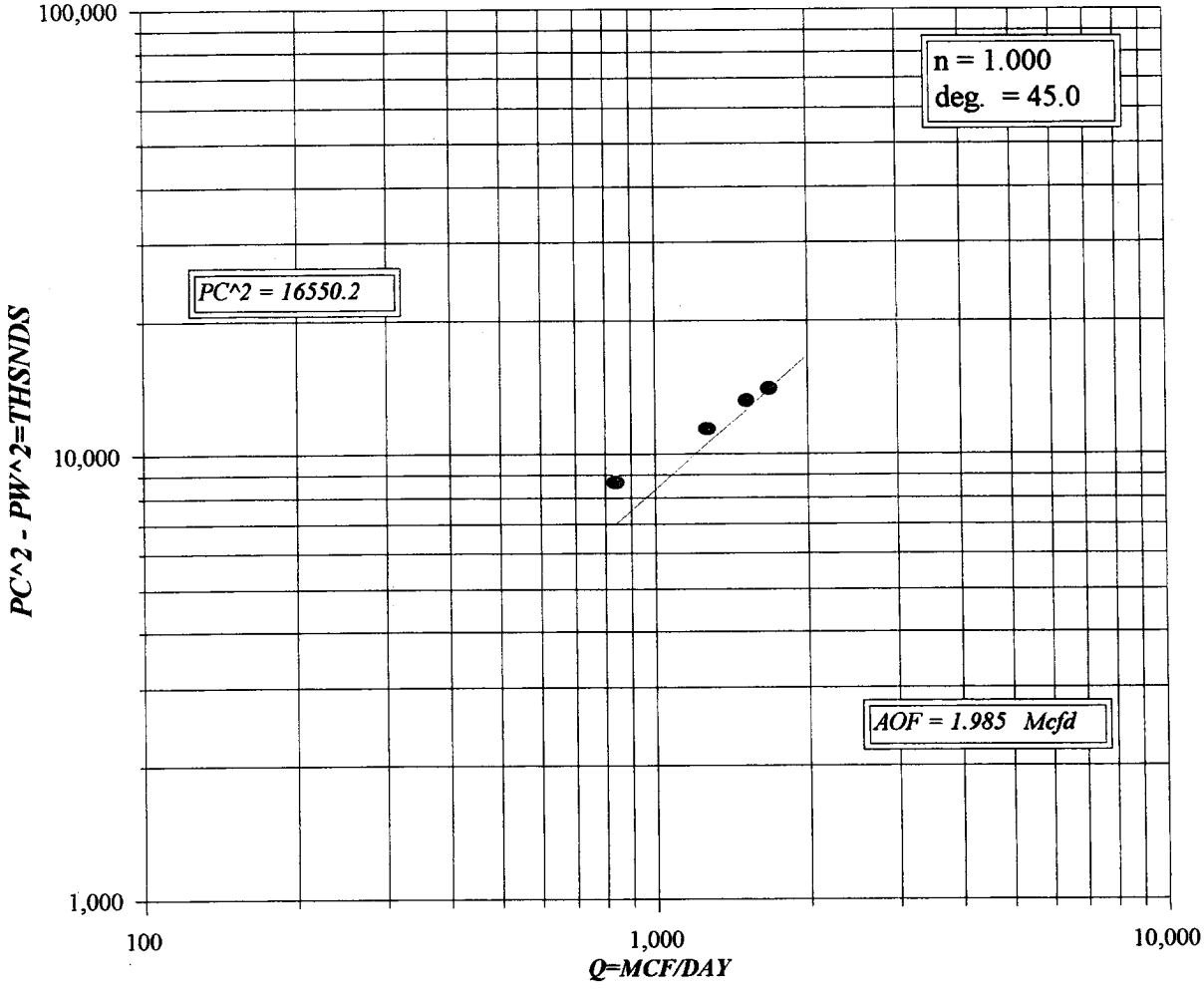
Remarks: * WELL MADE 17.5 BBLS OF 60 DEG. API GRAVITY CONDENSATE DURING TEST.

Approved By Division:	Conducted By:	Calculated By:	Checked By:
	PRO WELL TESTING	MERV BUECKER	MB

PETROLEUM ENGINEER

ENSIGN OPERATING

KEY "20" #1



GOR/GMIX NEW MEXICO

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VOLUME OF FIRST RATE	=	841.0
DURATION OF FLOW IN MIN.	=	60.0
VOLUME OF SECOND RATE	=	1,275.0
DURATION OF FLOW IN MIN.	=	60.0
VOLUME OF THIRD RATE	=	1,523.0
DURATION OF FLOW IN MIN.	=	60.0
VOLUME OF FOURTH RATE	=	1,692.0
DURTION OF FLOW IN MIN.	=	60.0
VOLUME OF FIFTH RATE	=	.
DURATION OF FLOW IN MIN.	=	1.0
VOLUME OF SIXTH RATE	=	.
DURATION OF FLOW IN MIN.	=	1.0

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

NO. OF BBLS PRODUCED	=	17.5
API GRAVITY @ 60 DEG.	=	60.0
SPECIFIC GRAVITY OF GAS	=	0.6310

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TOTAL GAS PRODUCED	=	**222**
G.O.R.	=	**12.693**
G.MIX	=	**0.844**

C122D FORM IMPORTED FROM SYMPHONY ON 9-9-01

COMPANY :	ENSIGN OPERATING		LEASE :	KEY "20"		WELL NO. :	1						
UNIT :			SECTION :	20		TOWNSHIP :	24S						
L :	13380	H :	13380	L/H :	1	G/GMIX :	0.844						
%CO2 :	0.818	%N2 :	0.769	H2S :			DATE :	4/28/03					
d :	1.995	Fr :	0.018183	GH :	8197.0		RANGE :	35E					
VOL 1 :	841	PSIA 1 :	2802.2			RESV.TEMP		186.0					
VOL 2 :	1275	PSIA 2 :	2246.2										
VOL 3 :	1523	PSIA 3 :	1798.2			SHUT-IN PRES =		4068.2					
VOL 4 :	1692	PSIA 4 :	1539.2										
			PCR :	647									
			TCR :	438									

LINE		RATE 1		RATE 2		RATE 3		RATE 4	
		`1ST	`2ND	`1ST	``2ND	`1ST	`2ND	`1ST	`2ND
1	QM	0.841	0.841	1.275	1.275	1.523	1.523	1.692	1.692
2	TW	534	534	534	534	534	534	534	534
3	Ts	646.0	646.0	646.0	646.0	646.0	646.0	646.0	646.0
4	T	590.0	590.0	590.0	590.0	590.0	590.0	590.0	590.0
	PR (est)	4.33		3.47		2.78		2.38	
5	Z(est)	0.686	0.749	0.653	0.686	0.655	0.653	0.674	0.650
6	TZ	404.8	441.8	385.1	404.9	386.2	385.2	397.6	383.8
7	GH/TZ	20.252	18.555	21.284	20.247	21.227	21.280	20.614	21.360
8	eS	2.137	2.005	2.221	2.137	2.217	2.221	2.166	2.228
9	I-e-S	0.532	0.501	0.550	0.532	0.549	0.550	0.538	0.551
10	Pt	2802.2	2802.2	2246.2	2246.2	1798.2	1798.2	1539.2	1539.2
11	Pt2 /1000	7852.3	7852.3	5045.4	5045.4	3233.5	3233.5	2369.1	2369.1
12	Fr	0.018183	0.018183	0.018183	0.018183	0.018183	0.018183	0.018183	0.018183
13	Fc=FrTZ	7.360	8.033	7.003	7.361	7.022	7.004	7.230	6.978
14	FcQm	6.19	6.76	8.93	9.39	10.69	10.67	12.23	11.81
15	L/H(FcQm)2	38.3	45.6	79.7	88.1	114.4	113.8	149.7	139.4
16	Fw	20.383165	22.878476	43.831277	46.864472	62.76781	62.559059	80.577324	76.8233006
17	Pw2	7872.7	7875.2	5089.2	5092.3	3296.3	3296.1	2449.7	2446.0
18	Ps2	16824.8	15792.6	11305.5	10880.7	7306.8	7320.8	5306.8	5449.0
19	Ps	4101.8	3974.0	3362.4	3298.6	2703.1	2705.7	2303.7	2334.3
20	P	3452.0	3388.1	2804.3	2772.4	2250.7	2251.9	1921.4	1936.8
21	Pr	5.34	5.24	4.33	4.28	3.48	3.48	2.97	2.99
22	Tr	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35
23	Z	0.749	0.742	0.686	0.684	0.653	0.653	0.650	0.650

Pc =	4068.2	Pc2 =	16550.2
Pt2 =	7852.3	Pw =	2806.3
	5045.4		2256.6
	3233.5		1815.5
	2369.1		1564.0
Pc2-Pw2=	8675.0	Pw2 =	7875.2
	11457.9		5092.3
	13254.1		3296.1
	14104.2		2446.0
n =	1.000		
Pc2/(Pc2-Pw2) =	1.908		
	1.444		
	1.249		
	1.173		
[Pc2/Pc2-Pw2]n =	1.908		
	1.444		
	1.249		
	1.173		
AOF = Q	1.604		
	1.842		
	1.902		
	1.985		

FORM C122-D

Laboratory Services, Inc.

4016 Fiesta Drive
Hobbs, New Mexico 88240

Telephone: (505) 397-3713

FOR: Pro Well Testing & Wireline
P. O. Box 791
Hobbs, New Mexico 88241

SAMPLE:
IDENTIFICATION: Key "20" #1
COMPANY: Ensign Operating
LEASE:
PLANT:

SAMPLE DATA:
DATE SAMPLED: 4/28/03
ANALYSIS DATE: 4/29/03
PRESSURE – PSIG 600
SAMPLE TEMP. °F 70
ATMOS. TEMP. °F

GAS (XX) LIQUID ( )
SAMPLED BY: R. Hicks
ANALYSIS BY: Vickie Biggs

REMARKS: Sample taken @ the meter run.
Condensate API Gravity @ 60° F = 60.0

COMPONENT ANALYSIS

COMPONENT		MOL PERCENT	GPM
Hydrogen Sulfide	(H2S)		
Nitrogen	(N2)	0.769	
Carbon Dioxide	(CO2)	0.818	
Methane	(C1)	90.321	
Ethane	(C2)	4.961	1.324
Propane	(C3)	1.640	0.451
I-Butane	(IC4)	0.407	0.133
N-Butane	(NC4)	0.471	0.148
I-Pentane	(IC5)	0.220	0.080
N-Pentane	(NC5)	0.187	0.049
Hexane Plus	(C6+)	0.256	0.111
		100.000	2.296

BTU/CU.FT. – DRY	1096
AT 14.650 DRY	1093
AT 14.650 WET	1074
AT 14.73 DRY	1099
AT 14.73 WET	1080

MOLECULAR WT. 18.2825

SPECIFIC GRAVITY –
CALCULATED 0.631
MEASURED