

OIL CONSERVATION DIVISION

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

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator Enron Oil and Gas Company				Lease or Unit Name Jackson 10 st. Camm			
Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 3/18/97		Well No. 1	
Completion Date 1/29/97		Total Depth 15560		Plug Back TD 13520		Elevation 3599' GR	
Csg. Size 7 5/8		Wt. 39/33.7		d 6.625 6.765		Set At 12700	
Tbg. Size 2 7/8 & 3-1/2		Wt. 26.5		d 2.44		Set At 13095	
Perforations: From: 13191 To: 13475				County Lea			
Perforations: From: 13191 To: 13475				Pool Johnson Ranch			
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single				Packer Set At 13095		Formation Wolf Camp	
Producing Thru Tbg		Reservoir Temp. °F 172.9		Mean Annual Temp. °F 60°		Baro. Press. - P. 13.2	
L 13286		H 13286		Gg 718		% CO ₂ .272	
				% N ₂ .88		% H ₂ S	
				Prover 0		Meter Run 4.026	
						Taps F/G	

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						1395		PKR		24 Hrs.
1.	4.026 x 2.000		810	1"	84	1380	59°			60 min
2.	4.026 x 2.000		810	4"	103°	1350	61°			60 min
3.	4.026 x 2.000		810	9"	100°	1280	63°			60 min
4.	4.026 x 2.000		810	16"	91°	1160	64°			60 min
5.										

RATE OF FLOW CALCULATIONS							
NO.	COEFFICIENT (24 HOUR)	$\frac{h_w}{P_m}$	Pressure P _m	Flow Temp. Factor F _t	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1.	23.18	28.69	823.3	.9777	1.180	1.087	833
2.	23.18	57.38	823.2	.9610	1.180	1.080	1628
3.	23.18	86.07	823.2	.9636	1.180	1.080	2450
4.	23.18	114.76	823.2	.9715	1.180	1.087	3314
5.							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1.	1.23	544	1.39	.847	N/A	1.087	833
2.	1.23	563	1.43	.858	N/A	1.080	1628
3.	1.23	560	1.43	.858	N/A	1.080	2450
4.	1.23	551	1.40	.847	N/A	1.087	3314
5.							

P _c 1425.8 - P _c 2032.9					Gas Liquid Hydrocarbon Ratio N/A Mcf/bbl.	
A.P. I. Gravity of Liquid Hydrocarbons N/A Deg.					Specific Gravity Separator Gas .718	
Specific Gravity Flowing Fluid N/A					Critical Pressure 665 P.S.I.A.	
Critical Temperature 391					P.S.I.A. R	
$1) \frac{P_c^2}{P_c^2 - P_w^2} = 14.09$ $2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 4.330$ $AOF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 14350$						
NO.	P _i ²	P _w	P _w ²	P _c ² - P _w ²		
1.		1424.4	2028.9	4.0		
2.		1413.4	1997.6	35.3		
3.		1398.2	1954.9	78.0		
4.		1374.3	1888.7	144.2		
5.						

Absolute Open Flow 14350 Mcfd @ 15.025 Angle of Slope θ 61.0 Slope, n .554

Remarks: * Calculated From Known Bottom Hole Pressures

Approved By Division Conducted By: Pro Well Tester Calculated By: Checked By:

Betty Lildon
Enron Oil & Gas Company
3/31/97

ENRON OIL AND GAS
JACKSON 10 ST. COMM, WELL # 1

LEA COUNTY, NEW MEXICO
3-18-97

$P_c^2 - P_w^2$ (thousands) 100

$P_c^2 = 2032.9$

$Q_1 = 4025:225:3.604762$

$Q_2 = 1124:403:5.052265$

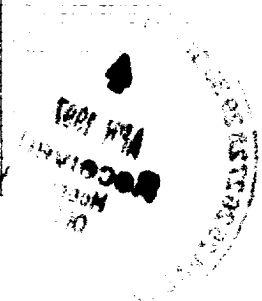
SLOPE $N = 1.554$

Q_1

Q_2

$A.O.G. = 14,350 \text{ MCF/DAY}$

Q MCF/DAY





WORK SHEET FOR CALCULATION OF WELL HEAD PRESSURE (Pc or Pw)

FORM C-122F

FROM KNOWN BOTTOM HOLE PRESSURE (Pf or Ps)

COMPANY ENRON OIL & GAS

LEASE : JACKSON IWELL NO. : CGM #1

DATE 3/18/97

UNIT

SECTION :

TWNSTP :

RANGE :

L

13286.5

H : 13286.5

L/H : 1

G/GMIX : 0.7180

CO2 : 0.21

N2 : 0.88

H2S :

GH : 9539.7

PCR : 665

TCR : 391

LINE		1	2	3	4	5	6	7	8
1	TW(W.H. R)	534	534	534	534	534	534	534	534
2	Ts(B.H. R)	666.9	666.9	666.9	666.9	666.9	666.9	666.9	666.9
3	T=(Tw+Ts/2)	600.4	600.4	600.4	600.4	600.4	600.4	600.4	600.4
4	Z (EST.)	0.831	0.786	0.775	0.787	0.775	0.788	0.776	0.790
5	TZ	499	472	465	473	466	473	466	474
6	GH/TZ	19.111	20.226	20.502	20.181	20.488	20.155	20.463	20.111
7	eS(TABLE XIV)	2.048	2.135	2.157	2.131	2.156	2.129	2.154	2.126
8	Pf or Ps	2081.3	2081.3	2063.5	2063.5	2040.3	2040.3	2003.7	2003.7
9	Pf2 or Ps2	4331.8	4331.8	4258.0	4258.0	4162.8	4162.8	4014.8	4014.8
10	Pc2=Pf/eS or Pw2=Ps2/eS	2115.6	2029.0	1973.8	1997.7	1930.7	1955.0	1863.8	1888.6

11	Pc or Pw	1454	1424	1405	1413	1390	1398	1365	1374
12	P=(Pw+Ps/2) or (Pc+Pf/2)	1768	1753	1734	1738	1715	1719	1684	1689
13	Pr=(P/Pcr)	2.66	2.64	2.61	2.61	2.58	2.59	2.53	2.54
14	Tr(T/Tcr)	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54
15	Z (TABLE XI)	0.786	0.786	0.787	0.787	0.788	0.788	0.790	0.790

PW 1 : 1424.4 PW 2 : 1413.4 PW 3 : 1398.2 PW 4 : 1374.3



WORK SHEET FOR CALCULATION OF WELLHEAD PRESSURE (Pc or Pw)
FROM KNOWN BOTTOM HOLE PRESSURE (Pf or Ps)

FORM C-122F

COMPANY ENRON OIL & GAS LEASE : JACKSON IWELL NO. : COM #1 DATE 3/18/97
UNIT SECTION : TWSHP : RANGE :
L 13286.5 H : 13286.5 L/H : 1 G/GMIX : 0.7180
CO2 : 0.21 N2 : 0.88 H2S :
GH : 9539.7 PCR : 665 TCR : 391

LINE		1	2	3	4	5	6	7	8
1	TW(W.H. R)	534	534	534	534	534	534	534	534
2	Ts(B.H. R)	666.9	666.9	666.9	666.9	666.9	666.9	666.9	666.9
3	T=(Tw+Ts/2)	600.4	600.4	600.4	600.4	600.4	600.4	600.4	600.4
4	Z (EST.)	0.831	0.785	ERR	ERR	ERR	ERR	ERR	ERR
5	TZ	499	472	ERR	ERR	ERR	ERR	ERR	ERR
6	GH/TZ	19.112	20.228	ERR	ERR	ERR	ERR	ERR	ERR
7	eS(TABLE XIV)	2.048	2.135	ERR	ERR	ERR	ERR	ERR	ERR
8	Pf or Ps	2083.4	2083.4	0	0	0	0	0	0
9	Pf2 or Ps2	4340.6	4340.6	0.0	0.0	0.0	0.0	0.0	0.0
10	Pc2=Pf/eS or Pw2=Ps2/eS	2119.7	2032.9	ERR	ERR	ERR	ERR	ERR	ERR
11	Pc or Pw	1456	1426	ERR	ERR	ERR	ERR	ERR	ERR
12	P=(Pw+Ps/2)or(Pc+Pf/2)	1770	1755	ERR	ERR	ERR	ERR	ERR	ERR
13	Pr=(P/Pcr)	2.66	2.64	ERR	ERR	ERR	ERR	ERR	ERR
14	Tr(T/Tcr)	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54
15	Z (TABLE XI)	0.785	0.786	ERR	ERR	ERR	ERR	ERR	ERR

PCW 1 : 1425.8 PW 2 : ERR PW 3 : ERR PW 4 : ERR





Laboratory Services, Inc.

1331 Tasker Drive
Hobbs, New Mexico 88240
Telephone: (505) 397-3713

FOR: Enron Oil & Gas Company
P. O. Box 3229
Carlsbad, New Mexico 88220

SAMPLE
IDENTIFICATION: Jackson 10 St. Com. #1
COMPANY: Enron Oil & Gas
LEASE:
PLANT:

SAMPLE DATA: DATE SAMPLED: 3/18/97 1:00 PM
ANALYSIS DATE: 3/18/97
PRESSURE - PSIG 880
SAMPLE TEMP. °F 85
ATMOS. TEMP. °F

GAS (XX) LIQUID ()
SAMPLED BY: Ray Gallagher-Pro Well
ANALYSIS BY: Vickie Walker

REMARKS: Sample taken @ the meter run.

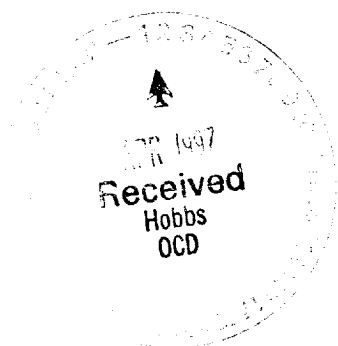
COMPONENT ANALYSIS

COMPONENT	MOL PERCENT	GPM
Hydrogen Sulfide (H2S)		
Nitrogen (N2)	0.88	
Carbon Dioxide (CO2)	0.21	
Methane (C1)	80.97	
Ethane (C2)	10.14	2.706
Propane (C3)	3.94	1.084
I-Butane (IC4)	0.60	0.197
N-Butane (NC4)	1.21	0.381
I-Pentane (IC5)	0.46	0.167
N-Pentane (NC5)	0.61	0.221
Hexane Plus (C6+)	0.98	0.400
	100.00	5.156

BTU/CU.FT. - DRY 1245
AT 14.650 DRY 1241
AT 14.650 WET 1219
AT 14.73 DRY 1248
AT 14.73 WET 1226

MOLECULAR WT. 20.7797

SPECIFIC GRAVITY -
CALCULATED 0.718
MEASURED



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CO2 : 0.21 N2 : 0.88 H2S :
GH : 9539.7 PCR : 665 TCR : 391

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