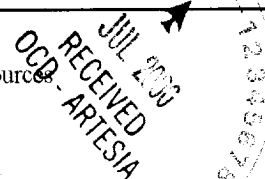


Submit in duplicate to
appropriate district office.
See Rule 401 & Rule 1122

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



CL5F

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator GRUY PETROLEUM MANAGEMENT				Lease or Unit Name EMPIRE 20 FED COM			
Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 7/17/00	Well No. #2
Completion Date		Total Depth 11300		Plug Back TD 11247		Elevation 3513	Unit Ltr - Sec - TWP - Rge 20 18S 29E
Csg. Size 5 1/2	Wt. 17	d 4.892	Set At 11300	Perforations: From: 10658 To: 10670			County EDDY
Tbg. Size 2 3/8	Wt. 4.7	d 1.995	Set At 10980	Perforations: From: To:			Pool N Turkey Track Atoka
Type Well-Single-Bradenhead-G.G. or G.O. Multiple MULTIPLE				Packer Set At 10980		Formation ATOKA	
Producing Thru CASING		Reservoir Temp. *F 180.6	Mean Annual Temp. *F 60	Baro. Press.-P _a 13.2		Connection SALES	
L 10664	H 10664	Gg 0.641	%CO ₂ 0.217	%N ₂ 1.327	%H ₂ S N/A	Prover N/A	Meter Run 3.068
						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						1300	N/A	2267		24 HRS.		
1	3.068 X 2.000		247	23	76	1300		1747	96	24 HRS.		
2												
3												
4												
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							2110
2	GAS VOLUMES	MEASURED	BY	TOTAL	FLOW	METER	
3							
4							
5							

No.	P _r	Temp. *R	T _r	Z	Gas Liquid Hydrocarbon Ratio 43.958 Mcf bbl.			
1					A.P. I. Gravity of Liquid Hydrocarbons 55.4 Deg.			
2	TOTAL	FLOW	METER		Specific Gravity Separator Gas 0.641 XXXXXXXX			
3					Specific Gravity Flowing Fluid N/A XXXXXX			
4					Critical Pressure 672 P.S.I.A. 670 P.S.I.A.			
5					Critical Temperature 366 R. 361 R			

P _c 2280.2 P _{c2} 5199.3			
No.	P _t ²	P _w	P _w ²
1		1761.5	3102.9
2			
3			
4			
5			

(1) $P_c^2 = \frac{2.48}{P_c^2 - P_w^2}$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2.48$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 5.233$

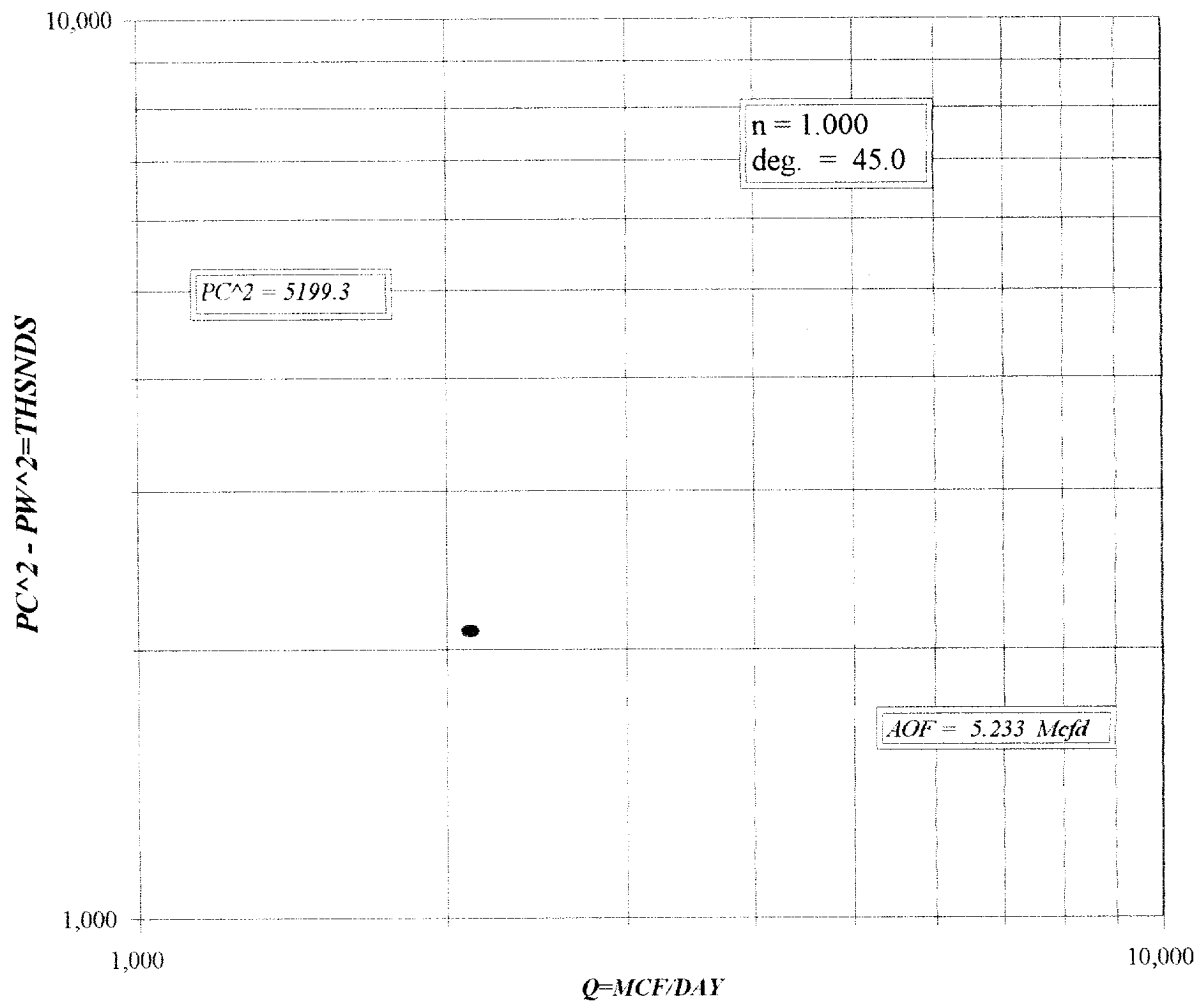
Absolute Open Flow 5.233	Mcf/d @ 15.025	Angle of Slope (°): 45	Slope n: 1
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Remarks: WELL MADE 48 BBLs OF 55.4 API GRAVITY CONDENSATE DURING TEST.

Approved By Division:	Conducted By: PRO WELL TESTING	Calculated By: MB	Checked By: BM
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GRUY PET. MANAGEMENT

EMPIRE 20 FED COM # 2



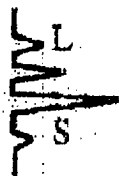
0 COMPANY : GRUY LEASE : EMPIRE 20-FED COM WELL NO. : 2
 UNIT : SECTION : TOWNSHIP :
 L : 10664 H : 10664 L/H : 1 G/GMIX : 0.641
 %CO2 : 0.217 %N2 : 1.327 H2S : DATE : 7/17/00
 d : 3.849 Fr : 0.003275 GH : 6835.6 RANGE :

VOL 1 : 2110 PSIA 1 : 1760.2 RESV.TEMP 180.6
 VOL 2 : PSIA 2 :
 VOL 3 : PSIA 3 : SHUT-IN PR= 2280.2
 VOL 4 : PSIA 4 :

PCR : 670
 TCR : 361

LINE	RATE 1		RATE 2		RATE 3		RATE 4	
	1ST	2ND	1ST	2ND	1ST	2ND	1ST	2ND
1 QM	2.110	2.110	0.000	0.000	0.000	0.000	0.000	0.000
2 TW	534	534	534	534	534	534	534	534
3 Ts	640.6	640.6	640.6	640.6	640.6	640.6	640.6	640.6
4 T	587.3	587.3	587.3	587.3	587.3	587.3	587.3	587.3
PR (est)	2.63		0.00		0.00		0.00	
5 Z(est)	0.826	0.818	ERR	ERR	ERR	ERR	ERR	ERR
6 TZ	485.1	480.3	ERR	ERR	ERR	ERR	ERR	ERR
7 GH/TZ	14.091	14.232	ERR	ERR	ERR	ERR	ERR	ERR
8 eS	1.696	1.705	ERR	ERR	ERR	ERR	ERR	ERR
9 l-e-S	0.410	0.414	ERR	ERR	ERR	ERR	ERR	ERR
10 Pt	1760.2	1760.2	0.0	0.0	0.0	0.0	0.0	0.0
11 Pt2 /1000	3098.3	3098.3	0.0	0.0	0.0	0.0	0.0	0.0
12 Fr	0.003275	0.003275	0.003275	0.003275	0.003275	0.003275	0.003275	0.003275
13 Fc=PrTZ	1.589	1.573	ERR	ERR	ERR	ERR	ERR	ERR
14 FcQm	3.35	3.32	ERR	ERR	ERR	ERR	ERR	ERR
15 L/H(FcQm)	11.2	11.0	ERR	ERR	ERR	ERR	ERR	ERR
16 Fw	4.615169	4.558284	ERR	ERR	ERR	ERR	ERR	ERR
17 Pw2	3102.9	3102.9	ERR	ERR	ERR	ERR	ERR	ERR
18 Ps2	5263.3	5291.1	ERR	ERR	ERR	ERR	ERR	ERR
19 Ps	2294.2	2300.2	ERR	ERR	ERR	ERR	ERR	ERR
20 P	2027.2	2030.2	ERR	ERR	ERR	ERR	ERR	ERR
21 Pr	3.03	3.03	ERR	ERR	ERR	ERR	ERR	ERR
22 Tr	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63
23 Z	0.818	0.818	ERR	ERR	ERR	ERR	ERR	ERR

Pc = 27²⁰ 2 Pc2 = 5199.3 *
 *
 Pt2 = 3098.3 Pw = 1761.5 *
 0.0 ERR *
 0.0 ERR *
 0.0 ERR *
 *
 Pc2-Pw2= 2096.4 Pw2 = 3102.9 *
 ERR ERR *
 ERR ERR *
 ERR ERR *
 *
 n = 1.000 *
 *
 Pc2/(Pc2-Pw2) = 2.480 *
 ERR *
 ERR *
 ERR *
 *
 [Pc2/(Pc2-Pw2)]n = 2.480 *
 ERR *
 ERR *
 ERR *
 *
 AOF= Q 5.233 *
 ERR *
 ERR *
 ERR *
 *
 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: Empire "20" Fed. Com. #2
COMPANY: Gruy Petroleum
LEASE:
PLANT:

SAMPLE DATA: DATE SAMPLED: 7/17/00 12:30 pm
ANALYSIS DATE: 7/17/00
PRESSURE - PSIG 214
SAMPLE TEMP. °F 88
ATMOS. TEMP. °F

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

REMARKS: Taken @ the meter run.

COMPONENT ANALYSIS

COMPONENT	MOL PERCENT	GPM
Hydrogen Sulfide (H2S)		
Nitrogen (N2)	1.327	
Carbon Dioxide (CO2)	0.217	
Methane (C1)	88.140	
Ethane (C2)	0.368	1.699
Propane (C3)	2.479	0.681
I-Butane (IC4)	0.369	0.120
N-Butane (NC4)	0.636	0.200
I-Pentane (IC5)	0.147	0.054
N-Pentane (NC5)	0.123	0.044
Hexane Plus (C6+)	0.192	0.083

100.000

2.861

BTU/CU.FT. - DRY 1118
AT 14.650 DRY 1115
AT 14.650 WET 1096
AT 14.73 DRY 1121
AT 14.73 WET 1101

MOLECULAR WT. 18.5693

SPECIFIC GRAVITY -
CALCULATED 0.641
MEASURED

NEW MEXICO G.O.R./G. MIX		
NO. OF BBLs PRODUCED	=	48.0
API GRAVITY @ 60 DEG.	=	55.4
.....		
SPECIFIC GRAVITY OF GAS	=	0.6410
XX		
TOTAL GAS PRODUCED	=	2110
G.O.R.	=	43.958
G.MIX	=	0.708