

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

5F file
c-132 file

Type Test ☒ Initial FOUR POINT ☐ Annual ☐ Special				Test Date 12-1-81		1980 FNL	
Company MC CLELLAN OIL COMPANY Corp.				Connection AIR NEW WELL		1980 FNL DEC 15 1981	
Pool UNDESIGNATED				Formation ABO		Unit G O.C.D.	
Completion Date 11-20-81		Total Depth 4108		Plug Back TD 4060		Elevation 3554 KB	
Casing Size 4.500		Wt. 10.5		Set At 4060		Perforations: From 3703 To 3751	
Well No. 2		Farm or Lease Name DANA FEDERAL		ARTESIA, OFFICE			
Trq. Size 2.375		Wt. 4.70		Set At 3700		Perforations: From OPEN To ENDED	
Unit G		Sec. 5		Twp. 9S		Rge. 25E	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple SINGLE				Packer Set At NONE		County CHAVES	
Producing Thru TUBING		Reservoir Temp. °F 86 # 3695		Mean Annual Temp. °F 60°		Baro. Press. - P _a 13.2	
State NEW MEXICO		L 3727		H 3727		G _g 0.6910	
% CO ₂ 1.402		% N ₂ 10.861		% H ₂ S		Prover	
Meter Run 4"		Taps FLANGE					

FLOW DATA							TUBING DATA		CASING DATA		Duration of Flow
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h _w	Temp. °F	Press. p.s.i.g.	Temp. °F	B.H.P. PSIG	Temp. °F	
1.	4.000	X	1.000	418	13.2	85	874	46	968		1
2.	4.000	X	1.000	415	23.8	86	819	44	908		1
3.	4.000	X	1.000	418	42.0	100	740	44	824		1
4.	4.000	X	1.000	420	65.5	95	626	36	699		1
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, Mld
1	4.8740	75.73	431.2	.9768	1.2030	1.0320	448
2	4.8740	100.95	428.2	.9759	1.2030	1.0303	595
3	4.8740	134.57	431.2	.9636	1.2030	1.0276	781
4	4.8740	168.45	433.2	.9680	1.2030	1.0292	984
5							

NO.	H	Temp. °R	T _g	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1	.66	545	1.54	.939	A.P.I. Gravity of Liquid Hydrocarbons	Deg.
2	.65	546	1.55	.942	Specific Gravity Separator Gas	.6910
3	.66	560	1.59	.947	Specific Gravity Flowing Fluid	X X X X X X X X
4	.66	555	1.57	.944	Critical Pressure	657 P.S.I.A.
5					Critical Temperature	353 R

NO.	P _i ²	P _w	P _w ²	P _i ² - P _w ²
1	1055.2	981.2	962.8	151
2	1113.4	921.2	848.6	265
3		837.2	700.9	413
4		712.2	507.2	606
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.8374$

AOR = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1390.6$

(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.4132$

3000 x P_{atm}
ID-3 x P_{atm}
12-18-81

Absolute Open Flow	1390.6	Mcf/d @ 15.025	Angle of Slope @	60.4	Slope, n	.5685
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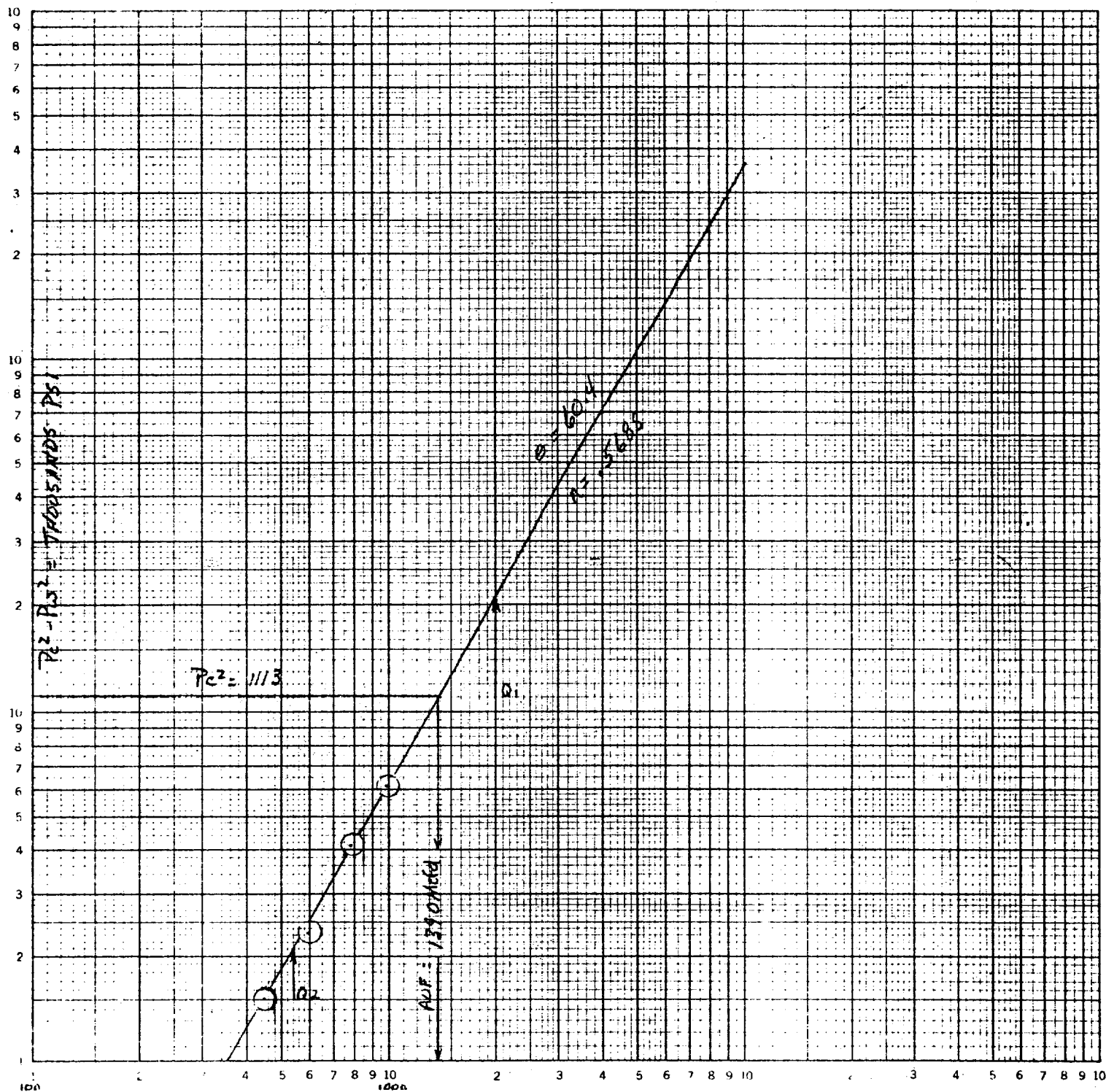
Remarks: BOTTOM HOLE PRESSURES MEASURED WITH AMERADA PRESSURE ELEMENTS.

Approved By Division	Conducted By: RICHARD TOWNLEY	Calculated By: BENNETT-CATHEY	Checked By:
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McKELLEN OIL CTRY.
DANA FEDERAL #2
G 5-95-25E
CHAVES COUNTY
NEW MEXICO
12-1-81

46 7400

K-S LOGARITHMIC 3 X 3 CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.



$$\overline{AP}^2 \cdot Pc^2 \cdot Pw^2 = 2100$$

G, Mcfd

$$\overline{AP}^2 \cdot Pc^2 \cdot Pw^2 = 210$$

$$Q_1 = 1994.4$$

$$Q_2 = 540$$

$$\text{LOG } Q_1 = 3.30009$$

$$\text{LOG } Q_2 = 2.73231$$

$$n = .5685$$

NEW-TEX LAB

P.O. BOX 1161

HOBBS NM 88241-1161

505-393-3561

ANALYSIS NUMBER: 6137

DATE OF RUN: 12/02/81

DATE SECURED:

ANALYSIS CERTIFICATE

SAMPLE IDENT: MCCLELLAN OIL - DANA FED #2

CLIENT: BENNETT-CATHEY
ADDRESS: BOX 787
CITY, STATE: ARTESIA NM 88210

SAMPLING PRESS: 0 PSIG SAMPLING TEMP: 0 DEG F
STATION NUMBER:

***** GAS ANALYSIS *****

	MOLE PERCENT	GAL/ MCF
NITROGEN	10.8608127	
CARBON DIOXIDE	1.4021409	
METHANE	79.0717697	
ETHANE	4.8485680	1.2931100
PROPANE	1.8702117	0.5133730
ISO-BUTANE	0.3140704	0.1024810
NORMAL BUTANE	0.6048966	0.1901800
ISO-PENTANE	0.1950354	0.0712074
NORMAL PENTANE	0.2101780	0.0759583
HEXANES	0.1226463	0.0503095
HEPTANES PLUS	0.4996703	0.2299480
TOTAL	100.0000000	2.5265700

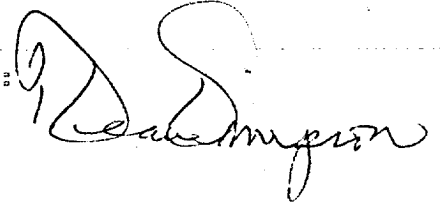
PROPANE GPM: 0.51 BUTANES GPM: 0.29
ETHANE GPM: 1.29 PENTANES PLUS GPM: 0.43

SPECIFIC GRAV (CALC): .6910
MOLE WEIGHT: 20.06

HHV-BTU/CU FT	PRESSURE (PSIA)	WET	DRY
14.696		994	1011
14.650		990	1008
14.730		996	1014
14.735		996	1014

ANALYZED BY:

APPROVED BY:



Artesia, New Mexico 88210

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CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

FOUR POINT BACK PRESSURE TEST _____ HOURS _____ MINUTES.

[illegible]

BENNETT - CATHEY
Artesia, New Mexico 88210
SUBSURFACE PRESSURE MEASUREMENTS

COMPANY MC CLELLAN OIL COMPANY WELL NAME DANA FEDERAL WELL NO. 2
DATE OF TEST 12-1-81 TO 12-4-81 FORMATION ABO PAGE 1 OF 1

CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

ELEMENT NUMBER	RPG3 #21121N	RANGE	5,000 LBS.
CLOCK NUMBER	17245	RANGE	72 HOURS
TIME WELL SHUT IN	1945 HOURS		
TIME CLOCK STARTED	1916 HOURS		
DEAD WEIGHT ELEMENT ON SURFACE	735 PSIA	FLOWING	LBS.
TIME ELEMENT REACHED BOTTOM	1944 HOURS		
DEAD WEIGHT ELEMENT ON BOTTOM	710 PSIA	FLOWING	LBS.
ELEMENT SET AT	3695		FEET.
TEMPERATURE	3695	FT.	°F.
DEAD WEIGHT AT THE END OF	71	HOURS	14 MINUTES.

959 PSIA

[illegible]