

C/SF
6-122

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

RECEIVED

Type Test ☒ Initial ☐ FOUR POINT ☐ Annual		Test Date MAY 26, 91		1980 FSL JUN 12 1981	
Company FRED POOL <i>Daly Co.</i>		Connection AIR NEW WELL		1980 FEL O.C.D.	
Pool WILDCAT <i>Ind. Abo</i>		Formation ABO		Unit J ARTESIA, OFFICE	
Completion Date 5-22-81		Total Depth 4,011.5 4033		Plug Back TD 4,035 3979	
Elevation 3,817 KB		Form or Lease Name MACHO		Well No. 1	
Coc. Size 4.5	Wi. 10.5	d 4,052	Set At 4,033	Perforations: From 3,834 To 3,845	
Thc. Size 2.375	Wi. 4.7	d 1,995	Set At 3,702	Perforations: From OPEN To	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple SINGLE				Packer Set At NONE	
Producing Thru TUBING		Reservoir Temp. °F 3829 99		Mean Annual Temp. °F 60	
Baro. Press. - P _a 13.2		State NEW MEXICO		County CHAVES	
L 3829	H 3829	G _g 0.6930	% CO ₂ 0	% N ₂ 19.789	% H ₂ S 0
Prover 4.000		Tape 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	Press. p.s.i.g.		Temp. °F
SI							840	100	949		72
1.	4" X 1.25			440	3.0	108	811	101	914		1
2.	4" X 1.25			445	6.7	108	765	100	886		1
3.	4" X 1.25			448	14.2	110	700	98	837		1
4.	4" X 1.25			448	27.2	102	605	90	754		1
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor F _t	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	7.6610	36.87	453.2	.9568	1.2013	1.0217	332
2	7.6610	55.41	458.2	.9568	1.2013	1.0217	498
3	7.6610	80.93	461.2	.9551	1.2013	1.0217	727
4	7.6610	113.03	461.2	.9619	1.2013	1.0228	1023
5							

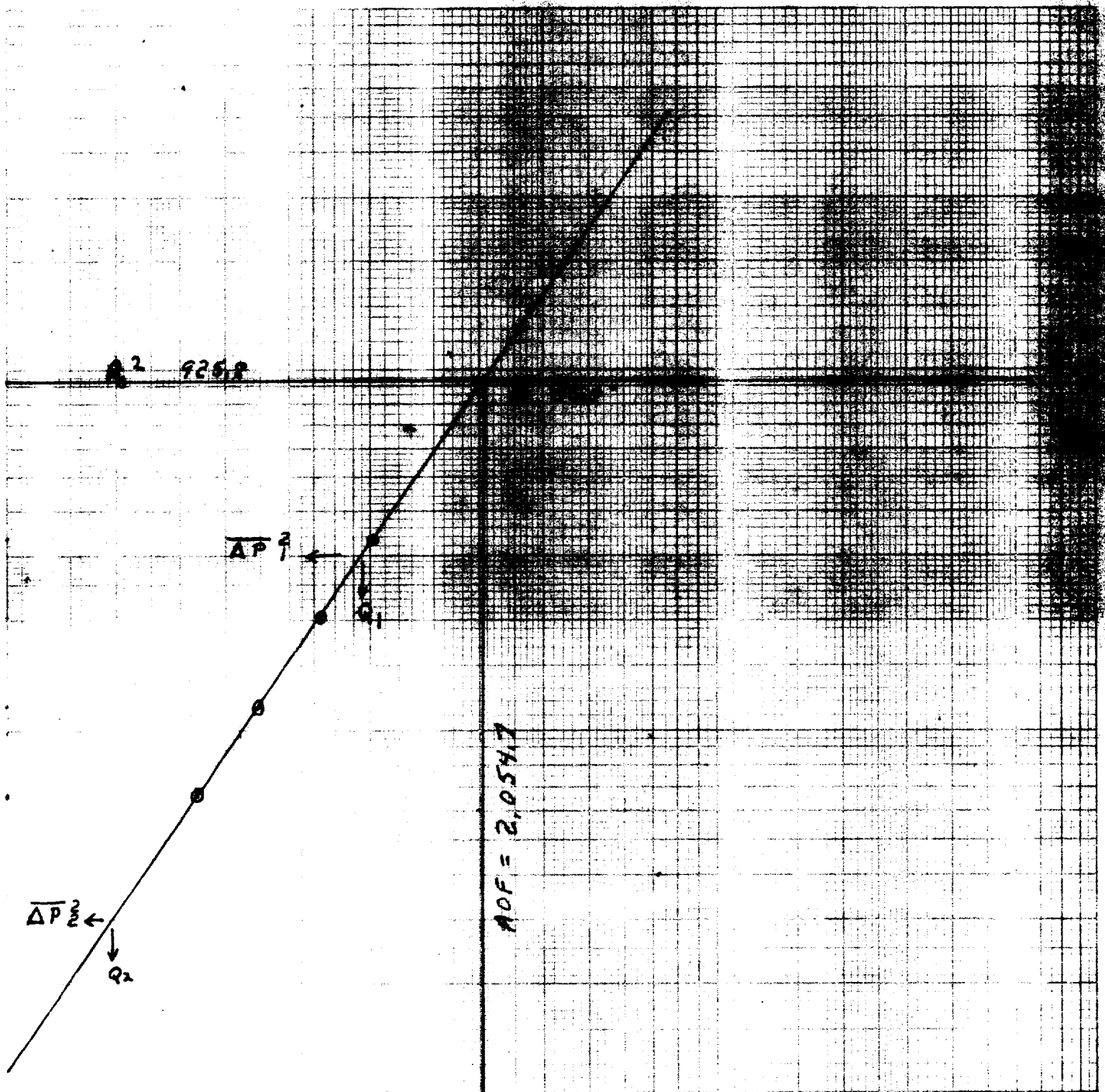
NO.	P _t	Temp. °R	T _t	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
1					A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
2	.71	568	1.71	.958	Specific Gravity Separator Gas .6930 XXXXXXXXXX
3	.72	568	1.71	.958	Specific Gravity Flowing Fluid .6930 XXXXXX
4	.73	570	1.72	.958	Critical Pressure 636 P.S.I.A. _____ P.S.I.A.
5	.73	562	1.70	.956	Critical Temperature 331 R _____ R

P _c 962.2	P _c ² 925.8	(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.7473$	(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2.0085$
NO.	P _t ²	P _w	P _w ²
1	927.2	859.7	66
2	899.2	808.6	117
3	850.2	722.8	203
4	767.2	588.6	337
5			

Absolute Open Flow 2054.7 Mcfd @ 15.025		Angle of Slope @ 55.4	Slope, n 6901
Remarks: KNOWN BOTTOM HOLE PRESSURE TAKEN WITH TANDUM AMERADA GUAGES			
Approved By Division	Conducted By: DON BENNETT	Calculated By: WOHLFORD & JENKINS	Checked By:

FRED POOL JR.
 Macho Wma No 1
 J-17, 75, 25F
 Chaves, New Mexico
 5-26-81

06 7403



Q mcf/d

$$\overline{\Delta P}_1^2 \quad P_c^2 - P_w^2 = 300$$

$$\overline{\Delta P}_2^2 \quad P_c^2 - P_w^2 = 30$$

$$Q_1 = 945.5 \text{ mcf/d}$$

$$Q_2 = 193.0 \text{ mcf/d}$$

$$\log Q_1 = 2.9756$$

$$\log Q_2 = 2.2855$$

$$N = 0.6901$$

NEW-TEX LAB

P. O. BOX 1161
HOBBS, N.M. 88240

No. 5064
Run No. _____
Date of Run 5-27-81
Date Secured 5-26-81

CERTIFICATE OF ANALYSIS

A Sample of Fred Pool Macho Well #1
Secured from Bennett Wireline
At Box 787 Secured by _____
Artesia, New Mexico 88210 Time _____ Date _____
Sampling conditions _____ Press _____
Temp. _____

FRACTIONAL ANALYSIS

Percentage Composition

	MOL %	LIQ. %	G.P.M.
Carbon Dioxide	Nil		
Air			
Nitrogen	19.789		
Oxygen			
Hydrogen sulfide			
Hydrogen			
Methane	73.068		
Ethane	4.192		1.118
Propane	1.714		.470
Butanes			
Iso-Butane	.249		.081
N-Butane	.567		.178
Pentanes			
Iso-Pentane	.150		.055
N-Pentane	.212		.077
Hexanes	Plus .059		.024
Heptanes			
Octanes			
TOTAL	100.000		2.003

Calc. Sp. Gr. 0.6930
Calc. A.P.I. _____
Calc. Vapor Press. _____ P.S.I.A.
Sp. Gr. _____
Mol. Wt. 20.86

LIQUID CONTENT (GAL./MCF)

Propane Calc. G.P.M. .470
Butanes Calc. G.P.M. .259
Pentanes Plus. G.P.M. .156
Ethane Calc. G.P.M. 1.118
RVP Gasoline G.P.M. _____
B.T.U./Cu. Ft. @ 14.696 P.S.I.A.
Dry Basis 899
Wet Basis 883
Sulfur Analysis by Titration
Gr./100 Cu. Ft. _____
Hydrogen Sulfide _____
Mercaptans _____
Sulfides _____
Residual Sulfur _____
Total Sulfur _____

Run by Deane Simpson Checked by _____ Approved by Deane Simpson

Additional Data and Remarks

BENNETT - CATHEY
 Artesia, New Mexico 88210
SUBSURFACE PRESSURE MEASUREMENTS

COMPANY FRED POOL WELL NAME MACHO WELL NO 1
 DATE OF TEST 5-26-81 TO 5-28-81 FORMATION ABO PAGE 1 OF 1

CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

ELEMENT NUMBER RPG3# 44631 RANGE 0-4,000
 CLOCK NUMBER E3170 RANGE 72 HOUR
 TIME WELL SHUT IN 1800 AFTER FOUR POINT TEST
 TIME CLOCK STARTED 1228
 DEAD WEIGHT ELEMENT ON SURFACE 845 LBS.
 TIME ELEMENT REACHED BOTTOM 1317
 DEAD WEIGHT ELEMENT ON BOTTOM 845 LBS.
 ELEMENT SET AT 3,829 FEET.
 TEMPERATURE 3.929 FT. 99 °F.
 DEAD WEIGHT AT THE END OF 99 HOURS MINUTES
 TANDUM BOMBS RUN #2 RPG3# 36641, 0-4,000 LB.

DATE	HOUR	TIME	DEFLECTION Inches	CALCULATED PRESSURE psig	CORRECTION P ± PC psig	CORRECTED PRESSURE psia	PRESSURE AT MID-POINT OF PERFORATIONS psia
5-26-81		1317		949	13.2		962.2
START HEATER		1340		949	13.2		962.2
START TEST	0	1400		947	13.2		960.2
	1/4	1415		926	13.2		939.2
	1/2	1430		918	13.2		931.2
	3/4	1445		914	13.2		927.2
END RATE 1	1	1500		914	13.2		927.2
	1 1/4	1515		893	13.2		911.2
	1 1/2	1530		894	13.2		907.2
	1 3/4	1545		889	13.2		902.2
END RATE 2	2	1600		886	13.2		899.2
	2 1/4	1615		855	13.2		868.2
	2 1/2	1630		847	13.2		860.2
	2 3/4	1645		841	13.2		854.2
END RATE 3	3	1700		837	13.2		850.2
	3 1/4	1715		795	13.2		808.2
	3 1/2	1730		776	13.2		789.2
	3 3/4	1745		763	13.2		776.2
END RATE 4	4 00	1800		754	13.2		767.2
SHUT IN	1/4	1815		851	13.2		864.2
	1/2	1830		871	13.2		884.2
	3/4	1845		882	13.2		895.2
	1	1900		888	13.2		901.2
	1 1/4	1915		894	13.2		907.2
	1 1/2	1930		898	13.2		911.2
	1 3/4	1945		903	13.2		916.2
	2	2000		906	13.2		919.2
	2 1/2	2030		910	13.2		923.2
	3	2100		914	13.2		927.2
	3 1/2	2130		917	13.2		930.2
	4	2200		920	13.2		933.2
	4 1/2	2230		923	13.2		936.2
	5	2300		925	13.2		938.2
	6	2400		929	13.2		942.2
	7	0100		933	13.2		946.2
	8	0200		937	13.2		950.2
	9	0300		939	13.2		952.2
	10	0400		941	13.2		954.2

SUBSURFACE PRESSURE MEASUREMENTS

FRED POOL

MACHO WELL NO 1

DATE OF TEST 5-26-81 TO 5-28-81

LOCATION ÄBO

PAGE 2 OF 2

[illegible]

TEST DATE: 5-26-81 TO 5-28-81
TEST DEPTH: 3,929

ELEMENT NO.: RFG3# 44631, & RFG3# 3664
RANGE: 0-4,000 & 0-4,000
CLOCKS: E3170 & F8702
RANGE: 72 HOUR & 120 HOUR

OPERATOR: BOB HERREN

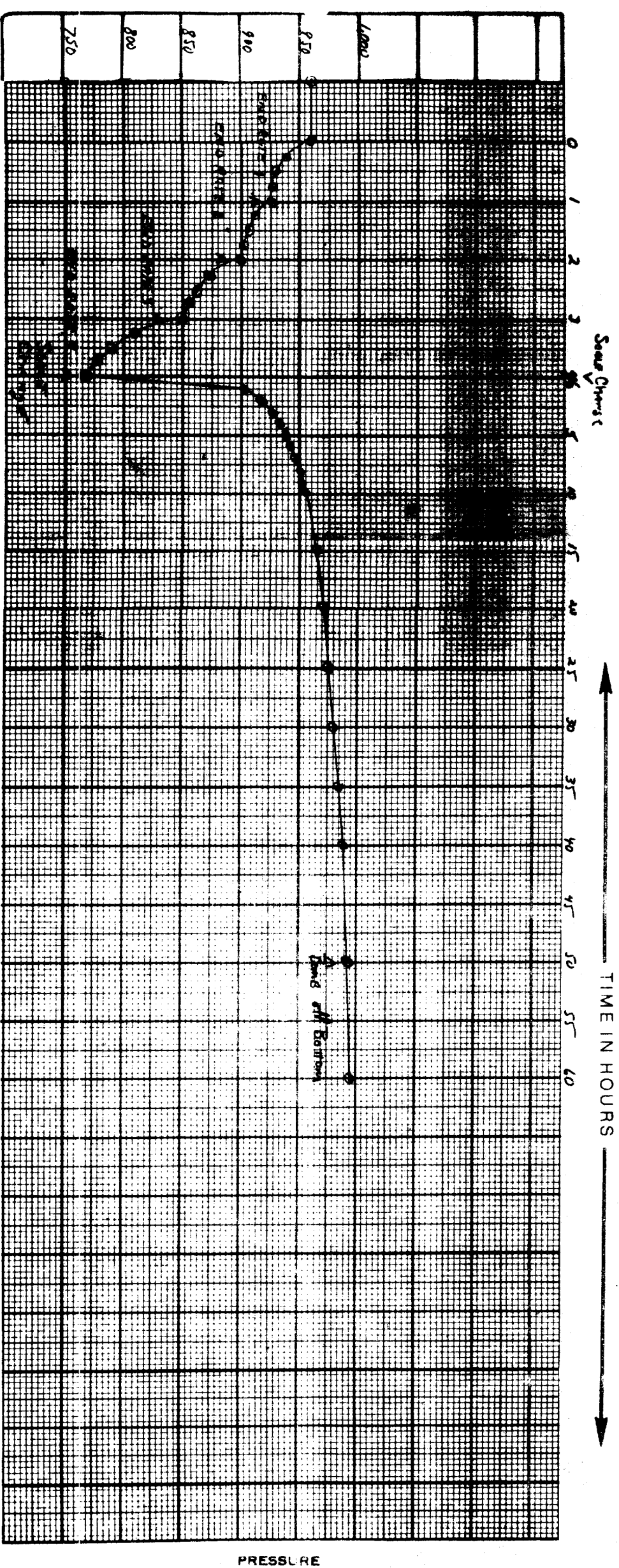
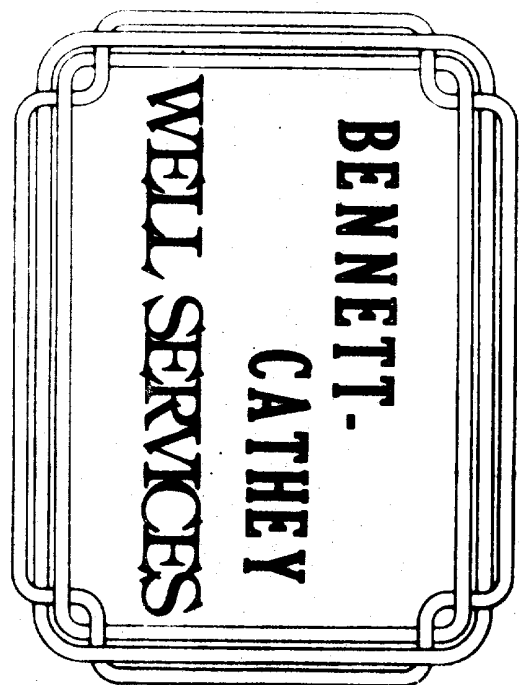
Note: See Attached Sheet for Tabulation of Pressure
And Time.

RECEIVED
JUN 12 1981
O.C.D.
ARTESIA OFFICE

FRED POOL

MACHO WELL NO 1

BENNETT-CATHEY WIRE LINE SERVICE
Box 787
Artesia, N.M. 88210
505/746-3281
Drawn By Scale: As Shown





BEN. JETT-CATHEY WIRE LINE SERVICE

P. O. BOX 707

ARTESIA, NEW MEXICO 88210

Phone 746-3281



RECEIVED

JUN 12 1981

SONNY POOL

BOTTOM HOLE PRESSURE SURVEY REPORT

O. C. O.
ARTESIA, NEW MEXICO

OPERATOR FRED POOL
LEASE MACHO
WELL NO. #1
POOL FORMATION
DATE 5-28-81 TIME 2141

STATUS SHUT IN TEST DEPTH 3,829
TIME S.I. 1800 LAST TEST DATE FIRST TEST
CAS. PRES. BHP LAST TEST
TUB. PRES. 896 BHP CHANGE
ELE. FLUID TOP
DATUM PLANE WATER TOP
DATUM PSIA 997.2 RUN BY BOB HERREN
TEMP 99 PRESSURE RANGE 0-4,000
CLOCK NO.
ELEMENT NO. 2003# 44531

DEPTH	PRESSURE	GRADIENT
0	896	
1,000	922	2.6
2,000	947	2.5
3,000	976	2.9
3,679	993	2.5
3,829	997	2.7

TIME BHP MEASURED 2141 HOURS

LENGTH OF TIME WELL SHUT IN
75 HOURS 41 MINUTES

KB 10'

