

NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT / ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
 Revised 6-1-83

RECEIVED

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File

MAR 21 1983

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 3-7-83		1980 FSL O.C.D. AREA OFFICE	
Company SANTA FE EXPLORATION				Connection AIR NEW WELL			
Pool <i>Compton Morrow</i>				Formation MORROW		Unit #1	
Completion Date 2-21-83 3-7-83		Total Depth 9850		Plug (bars) 1. 9756		Elevation 3422.13439	
Well No. #1		Form or Lease Name EXXON STATE COM.					
Well Size 4.500	Wt. 11.6	d 4.000	Set At 9850	Perforations: From 9440 To 9559			
Thg. Size 2.375	Wt. 4.7	d 1.995	Set At 9310	Perforations: From 0 To 0			
Type Well - Single - Freedomhead - G.O. or G.O. Multiple SINGLE				Packer Set At 9280		County EDDY	
Producing thru TUBING		Reservoir Temp. °F 180 @ 9500		Mean Annual Temp. °F 60.0		Baro. Press. - P _a 13.2	
State NEW MEXICO							
L 9500	H 9500	Q _g 0.603	% CO ₂ 1.913	% N ₂ 0	% H ₂ S 0	Prover 0	Meter Run 4.026
Type FLANGE							

FLOW DATA						TUBING DATA		B.H.P. 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.		CHOKE
51							2838		3561		72.0
1.	4.03 X 0.750			480	20.0	40.	2688	70.	3376	6.5/64	1.0
2.	4.03 X 0.750			480	40.5	36.	2593	72.	3264	7.5/64	1.0
3.	4.03 X 0.750			480	81.0	34.	2443	72.	3086	8.5/64	1.0
4.	4.03 X 1.000			460	53.0	38.	2230	72.	2839	9.5/64	1.0
5.											

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{P_a}$	Pressure P _a	Flow Temp. Factor Ft.	Gravity Factor F _g	Super Compress. Factor, F _{sp}	Rate of Flow Q, Mscf
1	2.66	99.32	493.2	1.0198	1.2878	1.0512	365
2	2.66	141.33	493.2	1.0239	1.2878	1.0530	522
3	2.66	199.87	493.2	1.0260	1.2878	1.0540	741
4	4.75	158.37	473.2	1.0218	1.2878	1.0499	1040
5							

NO.	P _a	Temp. °F	T _g	Z	Gas Liquid Hydrocarbon Ratio	A.P.I. Gravity of Liquid Hydrocarbons	Specific Gravity Separator Gas	Specific Gravity Flowing Fluid	Critical Pressure	Critical Temperature
1	0.73	500	1.39	0.905	0	0	0.603	XXXXXXX	672.	359.
2	0.73	496	1.38	0.902				XXXXXX		
3	0.73	494	1.37	0.900						
4	0.70	498	1.39	0.907						
5										

P ₁ ² 2863.7	P ₂ ² 8201									
NO.	P ₁ ²	P ₂ ²	R ₁ ²	R ₂ ²	R ₁ ² - R ₂ ²	(1) $\frac{P_1^2}{R_1^2 - R_2^2} = 2.6947$	(2) $\left[\frac{R_1^2}{R_1^2 - R_2^2} \right]^n = 2.2843$	AOF = Q $\left[\frac{R_1^2}{R_1^2 - R_2^2} \right]^n = 2375$	Post ID-2 3-25-83 Camp & RK	
1	11487	2710	7342	858						
2	10740	2617	6850	1351						
3	9605	2471	6107	2094						
4	8135	2271	5157	3043						
5										

Absolute Open Flow	2375	Mscf @ 13.025	Angle of Slope @	50.2	Slope, n	0.833
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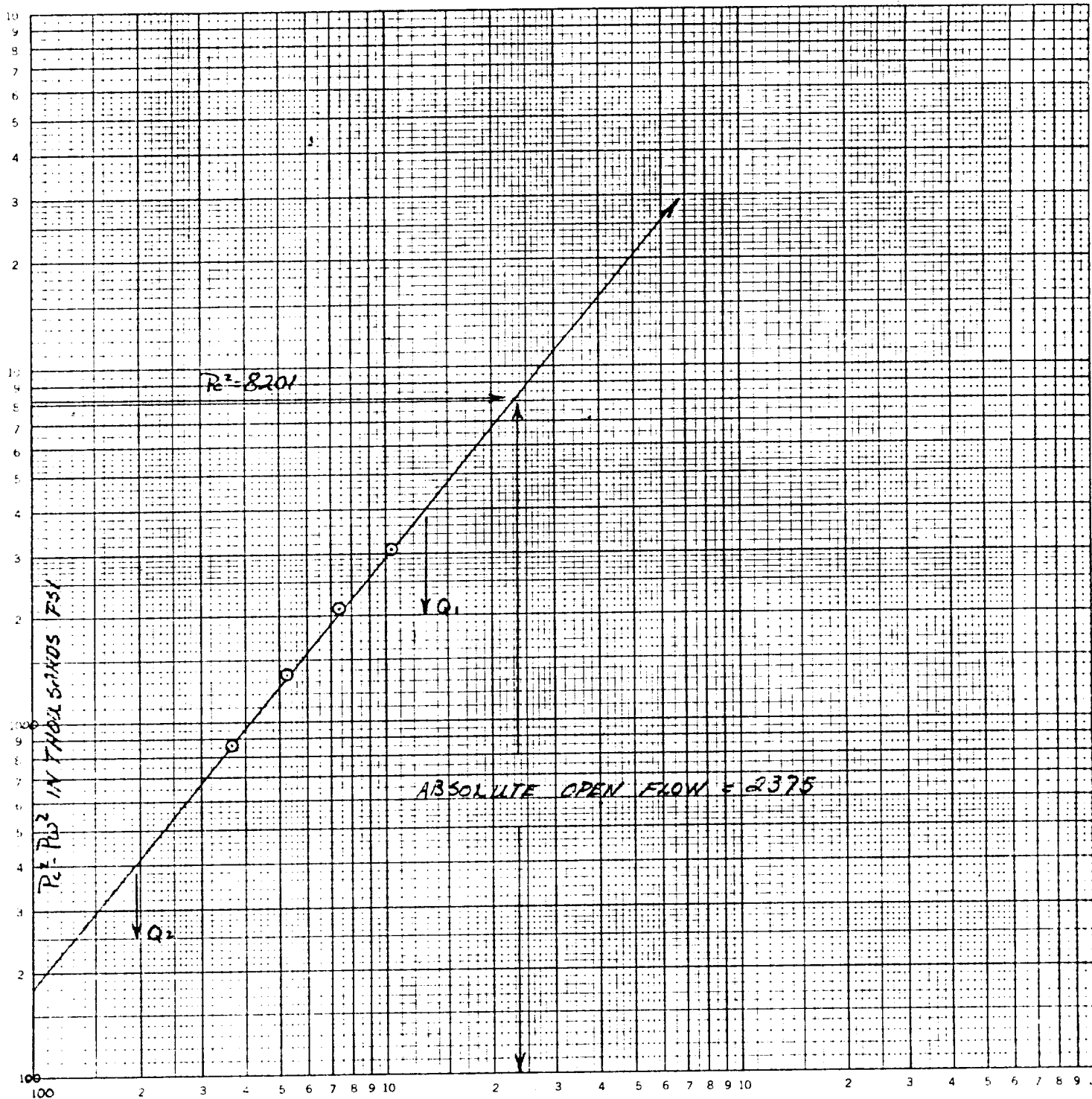
Remarks: BOTTOM HOLE PRESSURE MEASURED WITH AMERADA PRESSURE ELEMENTS.

Approved By Commission:	Conducted By: RICHARD TOWNLEY	Calculated By: BENNETT & CATHEY	Checked By:
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2 205 25E
EDDY
2-7-83

467400

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



$$\Delta P_1: P_c^2 - P_w^2 = 4000$$

$$\Delta P_2: P_c^2 - P_w^2 = 400$$

Q, Mcfd

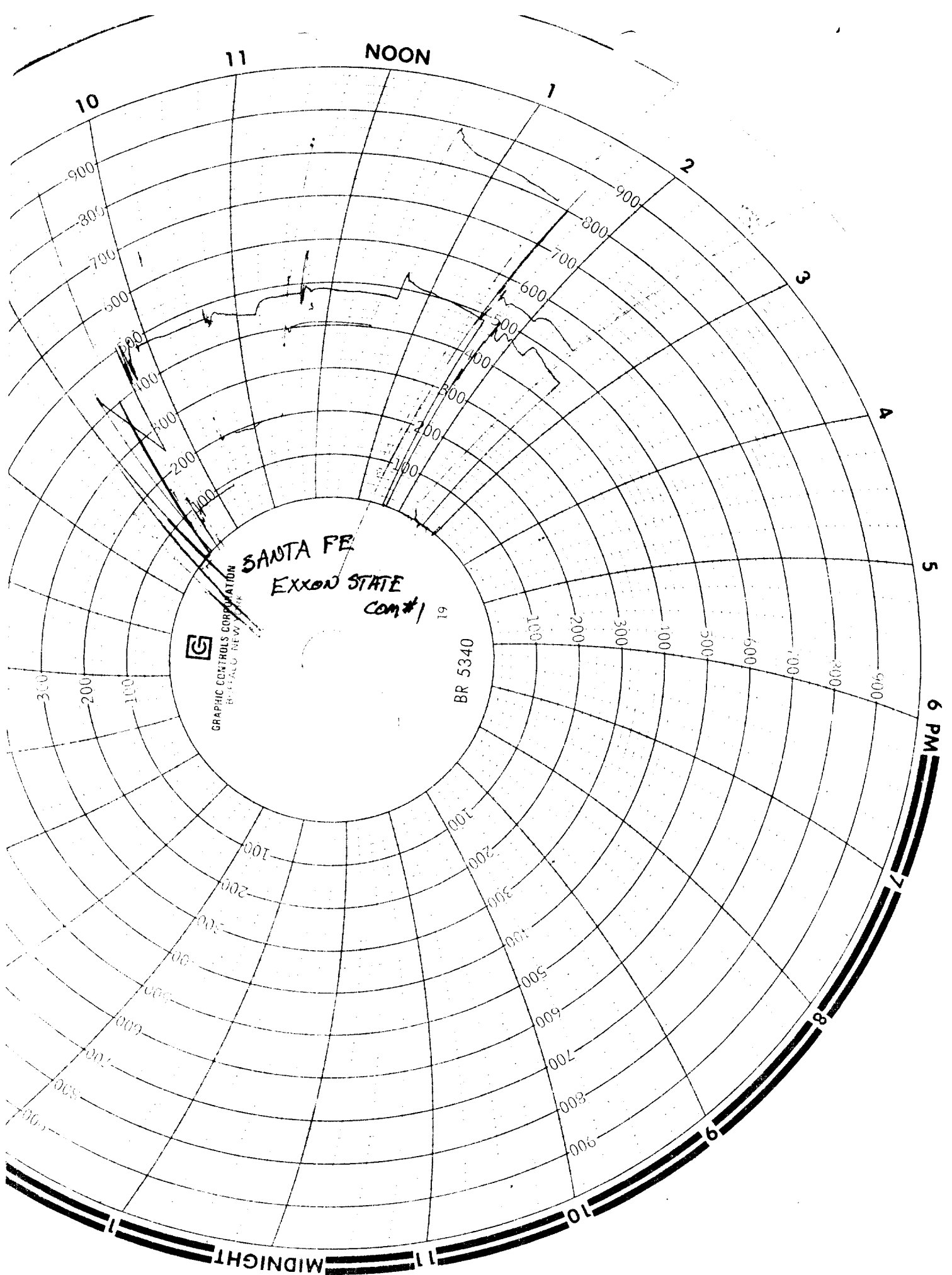
$$\log Q_1 = 3.1139$$

$$\log Q_2 = 2.2810$$

$$n = .8329 = .833$$

$$Q_1 = 1300$$

$$Q_2 = 191$$





PRECISION SERVICE INC.

Flow Measurement Engineers

Analysis Results Summary

Casper, WY 82601

Run No. 307-3

Date Run 03/07/83

Date Sampled 03/07/83

Analysis For: BENNETT & CATHEY WRLN.

Lease: Exxon State Com. #1

Producer Sante Fe Exploration

Location Undesignated

County Eddy State New Mexico

Purpose Well Test

Sampled By B & C WRLN.

Sampling Temp. 40 °F

Atmos Temp. 74 °F

Volume/day 1000 MCF

Formation

Pressure on Bomb 480

PSIG; Line Pressure PSIG

Gas Component

Analysis

Press. Base: 14.73

	Mol. %	Liq. %	GPM Per MCF
Carbon Dioxide CO ₂	<u>1.913</u>		
Oxygen O ₂			
Nitrogen N ₂			
Hydrogen Sulfide H ₂ S			
Methane C ₁	<u>93.801</u>		<u>15.899</u>
Ethane C ₂	<u>3.136</u>		<u>.836</u>
Propane C ₃	<u>.712</u>		<u>.195</u>
Iso-Butane IC ₄	<u>.146</u>		<u>.048</u>
Nor-Butane NC ₄	<u>.149</u>		<u>.047</u>
Iso-Pentane IC ₅	<u>.066</u>		<u>.024</u>
Nor-Pentane NC ₅	<u>.040</u>		<u>.014</u>
Hexanes C ₆			
xanes +	<u>.037</u>		<u>.015</u>
Heptanes Plus C ₇ +			
Total	<u>100.000</u>		<u>17.078</u>
Pentane + G.P.M.			<u>.054</u>
OPANE + G.P.M.			<u>.343</u>

BTU Dry 1041

BTU Wet 1023

Calc. Specific Gravity .603

@ Std. Press. 14.696

BTU Dry 1038

BTU Wet 1020

Calc. Vap. Press. #/Sq.In.

Reid Vap. Press. #/Sq.In.

Z Factor .9978

N Value 1.3019

Ave Mol Wt 17.4270

Run by JAP

Calculated By JAP

-lb GASOLINE

marks:

Distribution:

(505) 748—3354 / Artesia, New Mexico 8210

COMPANY SANTA FE EXPLORATION WELL NAME EXXON ST. COM #1
DATE OF TEST 3-7-83 FORMATION _____ PAGE 1 OF 1
COMPANY MAN STEVE SIMMONS

ELEMENT NUMBER	RPG3#23914	RANGE	5025LBS.
CLOCK NUMBER	3209	RANGE	12 HOUR
TIME WELL SHUT IN	N/A		
TIME CLOCK STARTED	0707 3-7-83		
DEAD WEIGHT ELEMENT ON SURFACE	2848.2 PSIA	SHUT IN	LBS.
TIME ELEMENT REACHED BOTTOM	0803 3-7-83		
DEAD WEIGHT ELEMENT ON BOTTOM	2862.2 PSIA	SHUT IN	LBS.
ELEMENT SET AT	9270 FT.	EXTRAPOLATED TO 9500 MIDPERF.	FEET.
TEMPERATURE	9270	FT.	180 °F.
DEAD WEIGHT AT THE END OF	72+	HOURS	MINUTES.

[illegible]

TEST DATE: 3-7-83
TEST DEPTH: 9270 FEET. EXTRAPOLATED TO 9500 MIDPERF

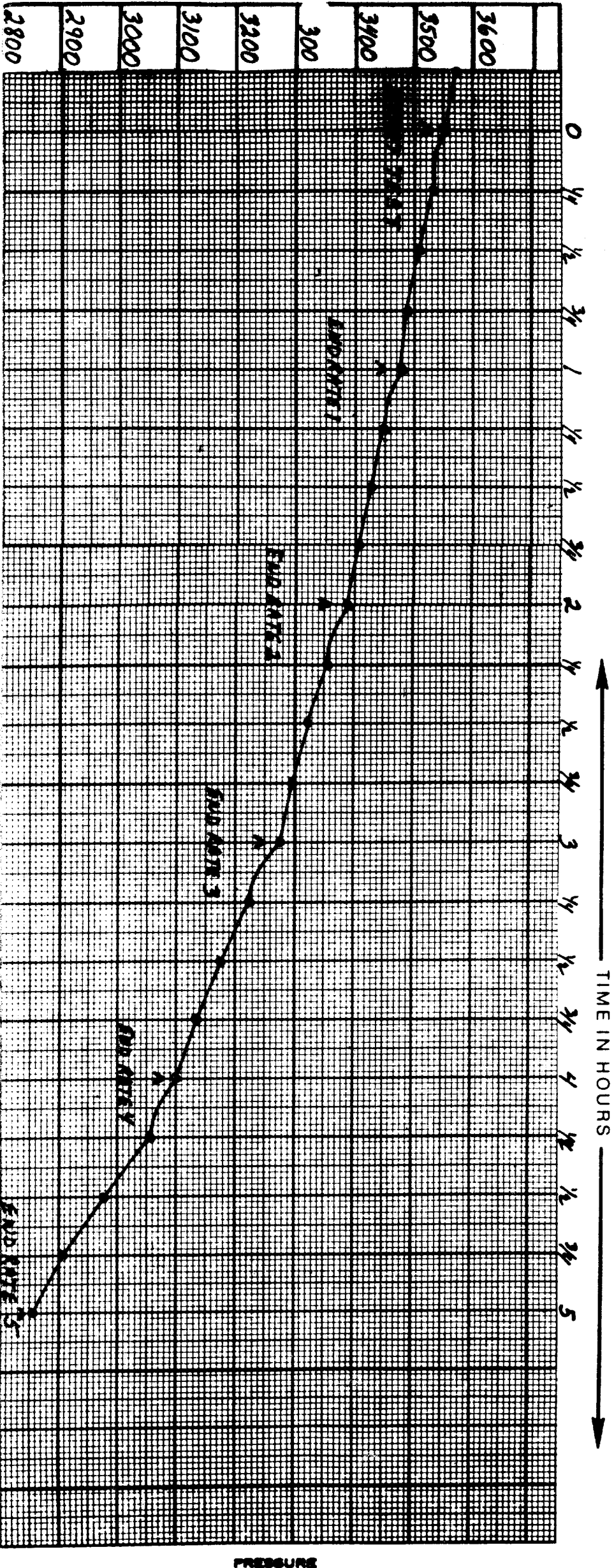
ELEMENT NO.: RPG3# 23914
RANGE: 5025 LBS.

CLOCKS: 3209
RANGE: 12 HOUR

OPERATOR: BOB HERREN

Note: See Attached Sheet for Tabulation of Pressure
And Time. 4 POINT BACK PRESSURE TEST

STEVE SIMMONS	
SANTA FE EXPLORATION	
EXXON ST. COM WELL #1	
BENNETT-CATHEY WIRE LINE SERVICE	
Box 787 Artesia, N.M. 88210 505/746-3281	
Drawn By	Scale: As Shown





BENNETT-CATHEY WIRE LINE SERVICE

P. O. BOX 787
ARTESIA, NEW MEXICO 88210
Phone (505) 746-3281



BOTTOM HOLE PRESSURE SURVEY REPORT

OPERATOR SANTA FE EXPLORATION
LEASE EXXON STATE COM.
WELL NO. #1
POOL FORMATION MORROW
DATE 3-6-83 TIME 2849 HOUR
CO. MAN STEVE SIMMONS
STATUS SHUT IN TEST DEPTH 9270 FEET
TIME S.I. N/A LAST TEST DATE FIRST TEST
N/A BHP LAST TEST
TUB. PRES. 2848.2# BHP CHANGE
CAS. PRES. FLUID TOP
DATUM PLANE WATER TOP
DATUM PSIA 3574.2# RUN BY BOB HERREN
TEMP 180° CLOCK # 3209
PRESSURE RANGE 5025 LBS.
ELEMENT NO. RPG3# 23914

DEPTH	PRESSURE	GRADIENT
0	2848.2	
9120	3543.2	7.6
9270	3555.2	8.0
9500	3574.2	8.2

9500 FEET WAS EXTRAPOLATED.

TIME B.H.P. MEASURED 0803 HOUR.
LENGTH OF TIME WELL SHUT IN 72+ HOURS.

