

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

RECEIVED BY C-12
 DEC 12 1983
 FILE

Type Test 4 POINT ☒ Initial ☐ Annual ☐ Special				Test Date 11-30-83		O. C. D. ARTESIA OFFICE	
Company T.H. MCELVAIN ✓				Connection TO AIR			
Pool PECOS SLOPE <i>Abc</i>				Formation ABO		Unit	
Completion Date 11-17-83		Total Depth 3070-3542		Plug Back 3070		Elevation 4019	
Casing Size 4.500		Wt. 10.5		Set At 3070		Perforations: From 2470 To 2521	
Tub. Size 2.375		Wt. 4.7		Set At 2360		Perforations: From 0 To 0	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple SINGLE				Packer Set At 0		Well No. STATE #1	
Producing Thru TUBING		Reservoir Temp. °F 96 @ 2496		Mean Annual Temp. °F 60.0		Baro. Press. - P _a 13.2	
L 2496		H 2496		C _g 0.709		% CO ₂ 12.97	
				% N ₂ 6.24		% H ₂ S 0	
				Provar 0		Motor Run 2.0	
						Taps 0	

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							1011		1079		310.0
1.	2.00 X 0.063			875.	0	48	962.	0	1033.	5/64	1.0
2.	2.00 X 0.094			725.	0	44	901.	0	969.	5.5/64	1.0
3.	2.00 X 0.094			838.	0	44	838.	0	899.	10/64	1.0
4.	2.00 X 0.125			600.	0	43	747.	0	795.	5.25/64	1.0
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 _{spv}	Rate of Flow Q, Mcfd
1	0.06	0	888.2	1.0117	1.1876	1.0781	74.
2	0.14	0	738.2	1.0157	1.1876	1.0670	134.
3	0.14	0	851.2	1.0157	1.1876	1.0774	156.
4	0.26	0	613.2	1.0168	1.1876	1.0557	207.
5							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1	1.25	508.	1.44	0.860	0	
2	1.03	504.	1.42	0.878	0	
3	1.19	504.	1.42	0.862	0.709	XXXXXXX
4	0.86	503.	1.42	0.897	XXXXX	0.709
5						

NO.	P _r	P _w	P _w ²	P _r ² - P _w ²	(1) $\frac{P_r^2}{P_r^2 - P_w^2} = 2.2237$	(2) $\left[\frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 1.6231$
1	1095.	975.	950.	85.		
2	965.	916.	839.	196.		
3	832.	851.	724.	311.		
4	653.	755.	569.	465.		
5						

ACF = Q $\left[\frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 335.$

Absolute Open Flow 335. Mcfd @ 15.025		Angle of Slope 58.8		Slope, n 0.606	
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Remarks: BOTTOM HOLE PRESSURES MEASURED WITH AMERADA PRESSURE ELEMENTS.

Approved By Commission	Conducted By RICHARD TOWNLEY	Calculated By BENNETT & CATHEY	Checked By <i>[Signature]</i>
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ARTESIA OFFICE

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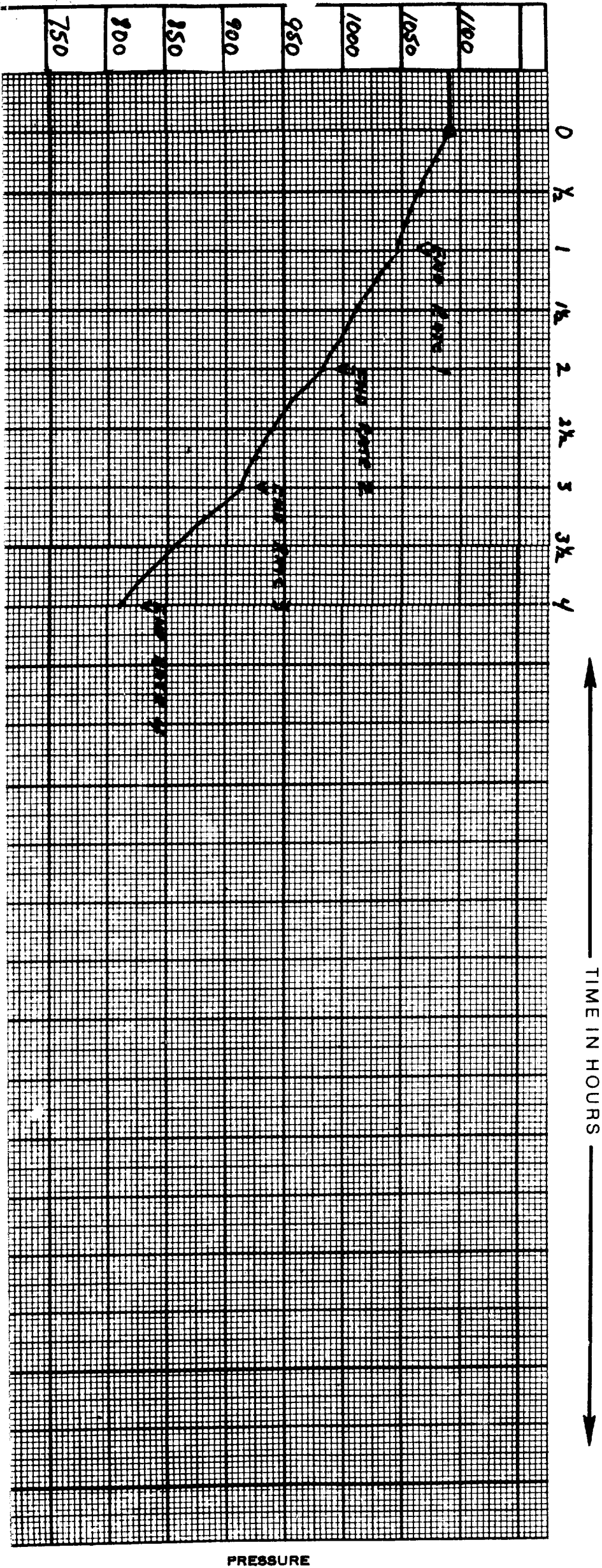
TEST DATE: 11-29-83 TO 11-30-83
TEST DEPTH: 2360 FEET
ELEMENT NO.: RPG3#32801
RANGE: 3500 LBS.
CLOCKS: B-3443
RANGE: 12 HOUR
OPERATOR: RICHARD TOWNLEY

DEC 12 1983
O. C. D.
ARTESIA, OFFICE

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

FOUR POINT BACK PRESSURE TEST

BILL CORN	
T.H. MCELVAIN CORN RANCH UNIT STATE #1	
BENNETT-CATHEY WIRE LINE SERVICE Box 787 Artesia, N.M. 88210 505/746-3281	
Drawn By	Scale: As Shown

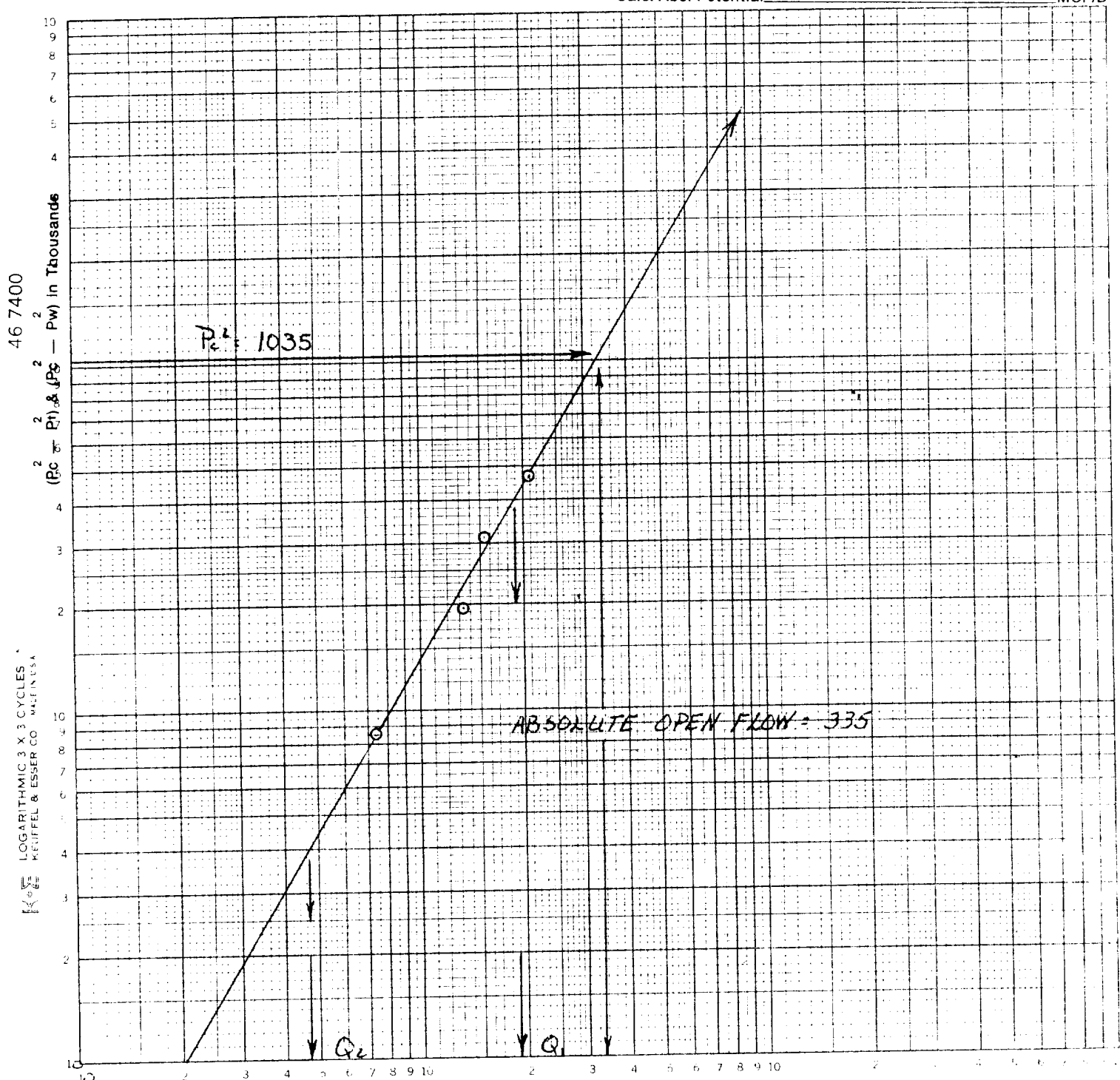


BACK PRESSURE CL /E

Operator T. H. McElvain Lease Corn Ranch Unit Well No. State #1
 County Chaves Field Perros Slope Location 29 85 22E
 Date of Test 11-30-83 Slope "n" 0.606 Angle of Slope 58.8

Calc. Abs. Potential

MCF/D



$$\overline{\Delta P}_1^2 \quad P_c^2 - P_w^2 = 400$$

$$\overline{\Delta P}_2^2 \quad P_c^2 - P_w^2 = 40$$

$$Q_1 = 190$$

$$Q_2 = 47$$

Q In MCF/Day

$$\text{LOG } Q_1 = 2.2787$$

$$\text{LOG } Q_2 = 1.6721$$

$$n = 0.606$$

5 6 AM

7

8

9

10

11

NOON

1

2

3

4

5

AMERICAN METER
T. H. McElvain

CHART NO. M-1000-H

11-30-83

4 point

METER _____

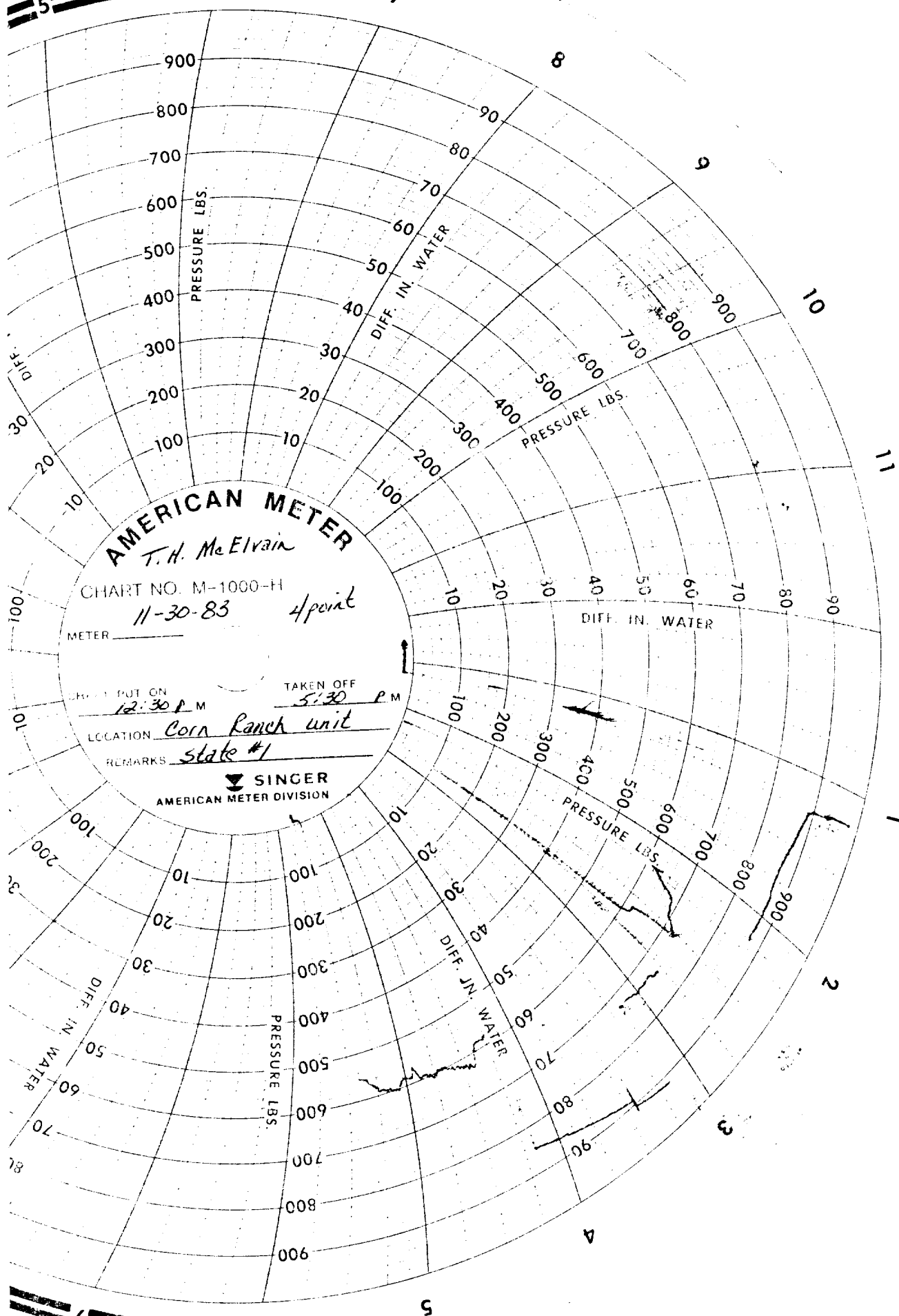
PUT ON 12:30 P. M.

TAKEN OFF 5:30 P. M.

LOCATION Corn Ranch unit

REMARKS state #1

SINGER
AMERICAN METER DIVISION





BENNETT-CATHEY WIRE LINE SERVICE

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

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ARTESIA, OFFICE

BOTTOM HOLE PRESSURE SURVEY REPORT

OPERATOR T.H. MCELVAIN
LEASE CORN RANCH UNIT STATE
WELL NO. #1
POOL FORMATION
DATE 11-30-83 TIME 1300 HOUR
CO. MAN BILL CORN
STATUS SHUT IN TEST DEPTH 2360 FEET
TIME S.I. 1500 HOUR LAST TEST DATE 1ST TEST
11-17-83 BHP LAST TEST
TUB. PRES. 1024.2# BHP CHANGE
CAS. PRES. FLUID TOP
DATUM PLANE WATER TOP
DATUM PSIA 1092.2# RUN BY BO FAULKENBERRY
TEMP 96° CLOCK # B-3443
PRESSURE RANGE 3500 LBS.
ELEMENT NO. RPG3#32801

DEPTH	PRESSURE	GRADIENT
0	1024.2	
1000	1051.2	2.7
2000	1078.2	2.7
2210	1084.2	2.8
2360	1088.2	2.7
2496	1092.2	2.9

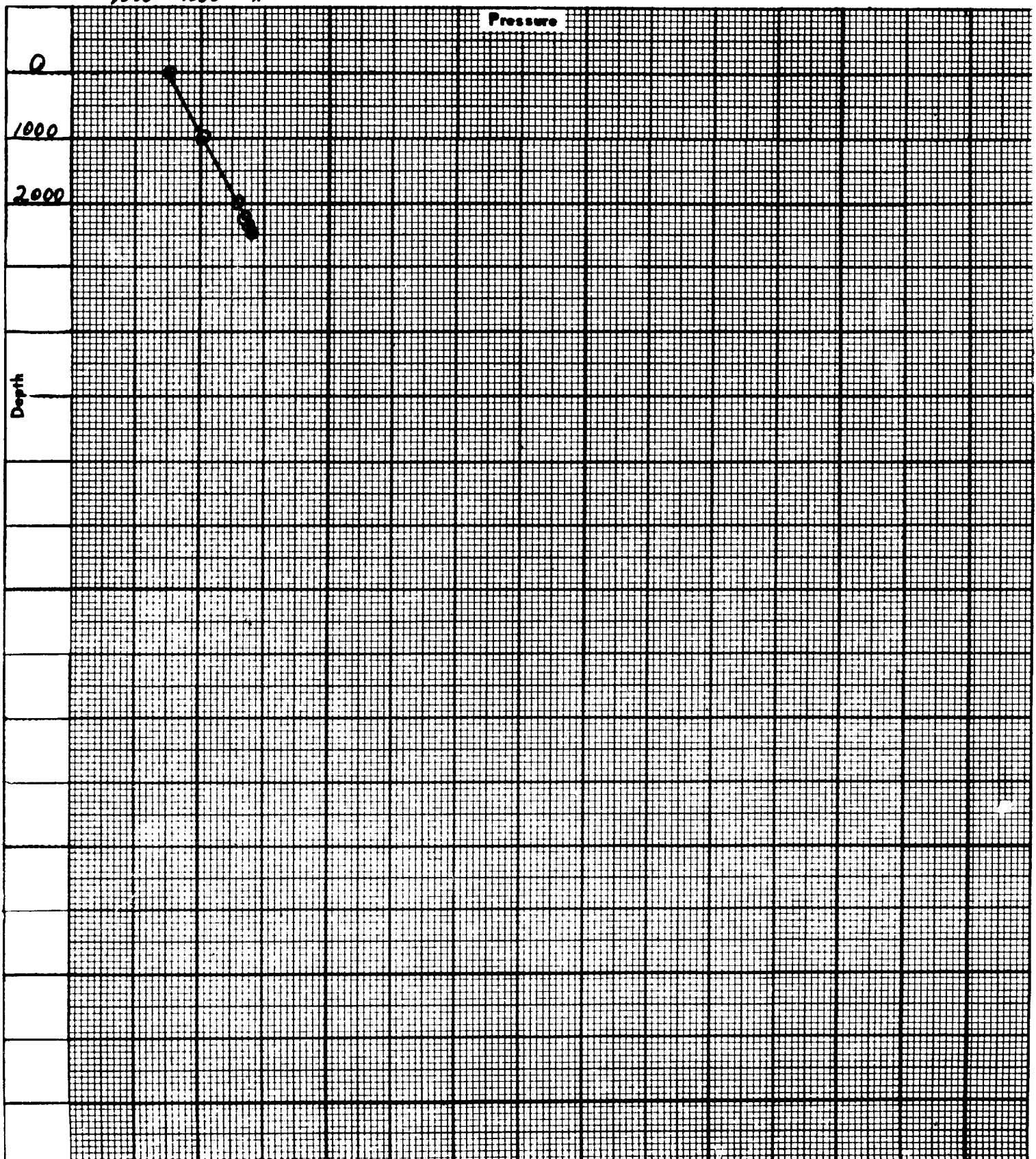
2496 FEET WAS EXTRAPOLATED.

TIME B.H.P. MEASURED 1300 HOUR.

LENGTH OF TIME WELL SHUT IN 309 HR 19MIN.

PERFORATIONS FROM 2470 TO 2521 FEET.

1000 1050 1100



"Let Your Interest in Measurement be our Concern"



PRECISION SERVICE INC. RECEIVED BY
Flow Measurement Engineers
Analysis Results Summary
Casper, WY 82601

Run No. 1201-2
Date Run 12/01/83
Date Sampled 11/30/83

O. C. D.
ARTESIA, OFFICE

Analysis For: BENNETT & CATHEY WRLN.
Case: Corn Ranch Unit St. #1
Location: Pecos Slope
Purpose: Well Test
Sampling Temp.: 50 °F
Volume/day: 199 MCF
Assure on Bomb: 745
Producer: T.H. McElvain
County: Chaves State: New Mexico
Sampled By: B & C WRLN.
Atmos Temp.: 50 °F
Formation: ABO
PSIG; Line Pressure: 745 PSIG

Gas Component Analysis Press. Base: 14.73

	Mol. %	Liq. %	GPM Per MCF
Carbon Dioxide CO ₂	12.969		
Oxygen O ₂	.092		
Nitrogen N ₂	6.235		
Hydrogen Sulfide H ₂ S			
Propane C ₃	80.352		13.588
Isobutane IC ₄	.285		.076
Normal Butane NC ₄	.033		.009
Isopentane IC ₅	.001		
Normal Pentane NC ₅	.008		.002
Isopentane IC ₅	.008		.003
Normal Pentane NC ₅	.004		.001
Hexanes plus	.014		.006
Heptanes C ₇			
Octanes Plus C ₇ +			
Total	100.000		13.686
Propane + G.P.M.			.010
Isobutane + GPM			.022
1b Gasoline			.099

BTU Dry 822
BTU Wet 822
Calc. Specific Gravity .709

@ Std. Press. 14.696
BTU Dry 820
BTU Wet 820

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

Z Factor .9980
N Value 1.3146
Ave Mol Wt 20.5011
Ave Cu Ft/Gal

Run by Jeffrey A. Propp

Calculated By Jeffrey A. Propp

Ethane + GPM .098

Notes: BTU Wet adjusted to flowing conditions as established by FERC Order #93/93-A and calculated per GPA Reference Bulletin 1B1-82.

Distribution:

BENNETT - CATHE

(505) 746-3354 / Artesia, New Mexico 88210

SUBSURFACE PRESSURE MEASUREMENTS**DEC 12 1983**

O. C. D.

ARTESIA, OFFICE

COMPANY T.H. MC ELVAIN WELL NAME CORN RANCH STATE UNIT #1
 DATE OF TEST 11-30-83 TO 12-3-83 FORMATION PAGE 1 OF 2
 COMPANY MAN BILL CORN

CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

ELEMENT NUMBER RPG3#32882 RANGE 3500 LBS.
 CLOCK NUMBER 27192 RANGE 72 HOUR
 ELEMENT NUMBER RANGE
 CLOCK NUMBER RANGE
 TIME WELL SHUT IN 1800 HOUR 11-30-83
 TIME CLOCK STARTED 1738 HOUR 11-30-83
 DEAD WEIGHT ELEMENT ON SURFACE 753.2 PSIA FLOWING LBS.
 TIME ELEMENT REACHED BOTTOM 1751 HOUR 11-30-83
 DEAD WEIGHT ELEMENT ON BOTTOM 753.2 PSIA SHUT IN LBS.
 ELEMENT SET AT 2360 FEET
 TEMPERATURE 2360 FT. 86° °F.
1013.2 PSIA DEAD WEIGHT AT THE END OF 84 HOURS 24 MINUTES

71 HOUR BUILD UP TEST AFTER FOUR POINT TEST

DATE	HOUR	TIME	DEFLECTION in/inches	CALCULATED PRESSURE psig	CORRECTION P ± PC psig	CORRECTED PRESSURE psia	PRESSURE AT MID-POINT OF PERFORATIONS psia
11-30-83	0	1800		779	13.2	792.2	797.2
	1/4	1815		799	13.2	812.2	817.2
	1/2	1830		818	13.2	831.2	836.2
	3/4	1845		835	13.2	848.2	853.2
	1	1900		846	13.2	859.2	864.2
	1 1/4	1915		857	13.2	870.2	875.2
	1 1/2	1930		868	13.2	881.2	886.2
	1 3/4	1945		880	13.2	892.2	897.2
	2	2000		888	13.2	901.2	906.2
	2 1/4	2015		895	13.2	908.2	913.2
	2 1/2	2030		903	13.2	916.2	921.2
	2 3/4	2045		909	13.2	922.2	927.2
	3	2100		915	13.2	928.2	933.2
	3 1/2	2130		926	13.2	939.2	944.2
	4	2200		936	13.2	949.2	954.2
	4 1/2	2230		945	13.2	958.2	963.2
	5	2300		951	13.2	963.2	978.2
	6	2400		965	13.2	978.2	983.2
12-1-83	7	0100		975	13.2	988.2	993.2
	8	0200		982	13.2	995.2	1000.2
	9	0300		988	13.2	1001.2	1006.2
	10	0400		995	13.2	1008.2	1013.2
	12	0600		1005	13.2	1018.2	1023.2
	14	0800		1012	13.2	1025.2	1030.2
	16	1000		1018	13.2	1031.2	1036.2
	18	1200		1023	13.2	1036.2	1041.2
	20	1400		1027	13.2	1040.2	1045.2
	25	1900		1035	13.2	1048.2	1053.2
	30	2400		1040	13.2	1053.2	1058.2
12-2-83	35	0500		1044	13.2	1057.2	1062.2
	40	1000		1048	13.2	1061.2	1066.2
	45	1500		1050	13.2	1063.2	1068.2
	50	2000		1052	13.2	1065.2	1070.2
12-3-83	55	0100		1054	13.2	1067.2	1072.2
	60	0600		1056	13.2	1069.2	1074.2
	65	1100		1058	13.2	1071.2	1076.2
	70	1600		1059	13.2	1072.2	1077.2

SUBSURFACE PRESSURE MEASUREMENTS

DEC 12 1983

~~ARGESIA2 OFFICE2~~

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BOTTOM HOLE PRESSURE SURVEY REPORT

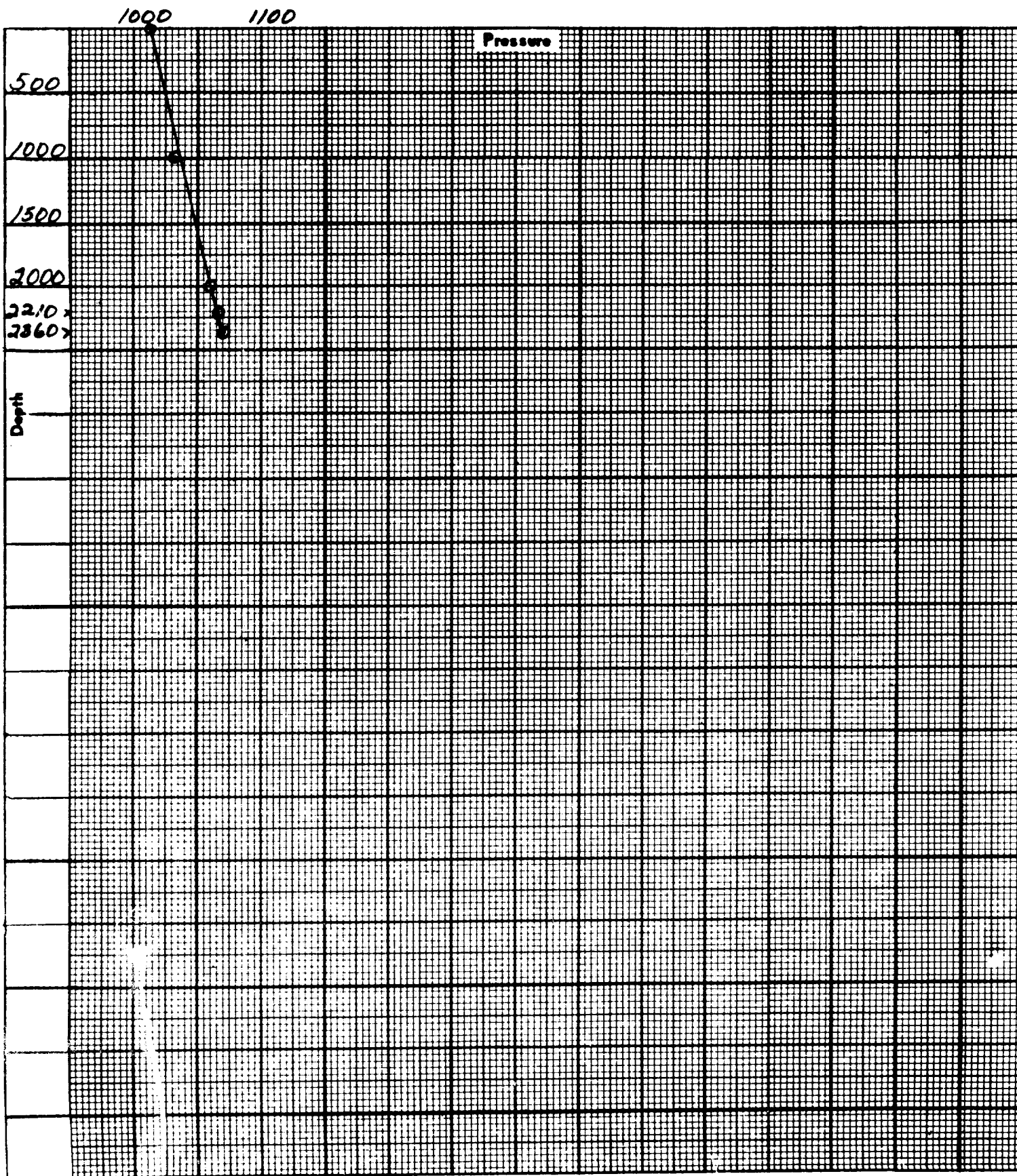
OPERATOR T.H. MC ELVAIN
LEASE CORN RANCH UNIT STATE
WELL NO. #1
POOL FORMATION
DATE 12-4-83 TIME 0824 HOUR
CO. MAN BILL CORN
STATUS SHUT IN TEST DEPTH 2360 FEET
TIME S.I. 1800 HR LAST TEST DATE 1ST TEST
11-30-83 BHP LAST TEST
TUB. PRES. 1013.2# BHP CHANGE
CAS. PRES. FLUID TOP
DATUM PLANE WATER TOP
DATUM PSIA 1077.2# RUN BY DAVID SPENCER
TEMP 86° CLOCK # B-3443
PRESSURE RANGE 3500 LBS.
ELEMENT NO. RPG3#32801

DEPTH	PRESSURE	GRADIENT
0	1013.2	
1000	1032.2	1.9
2000	1061.2	2.9
2210	1067.2	2.9
2360	1072.2	3.3
2496	1077.2	3.6

2496 FEET WAS EXTRAPOLATED.

TIME B.H.P. MEASURED 0824 HOUR.
LENGTH OF TIME WELL SHUT IN 86HR 24MIN.

PERFORATIONS FROM 2470 TO 2521 FEET.

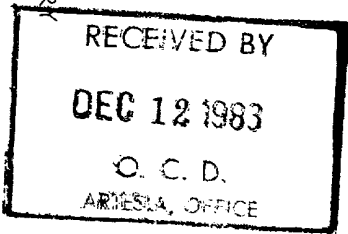


TEST DATE: 11-30-83 RO 12-3-83
TEST DEPTH: 2360 FEET

ELEMENT NO.: RFG3#32882
RANGE: 3500 LBS.

CLOCKS: 27192
RANGE: 72 HOUR

OPERATOR: BO FAULKENBERRY



Note: See Attached Sheet for Tabulation of Pressure
And Time.
71 HOUR BUILD UP TEST AFTER
FOUR POINT BACK PRESSURE TEST

BILL CORN	
T.H. MC ELVAIN	
CORN RANCH STATE UNIT #1	
BENNETT-CATHEY WIRE LINE SERVICE Box 787 Artesia, N.M. 88210 505/746-3281	
Drawn By	Scale: As Shown

