

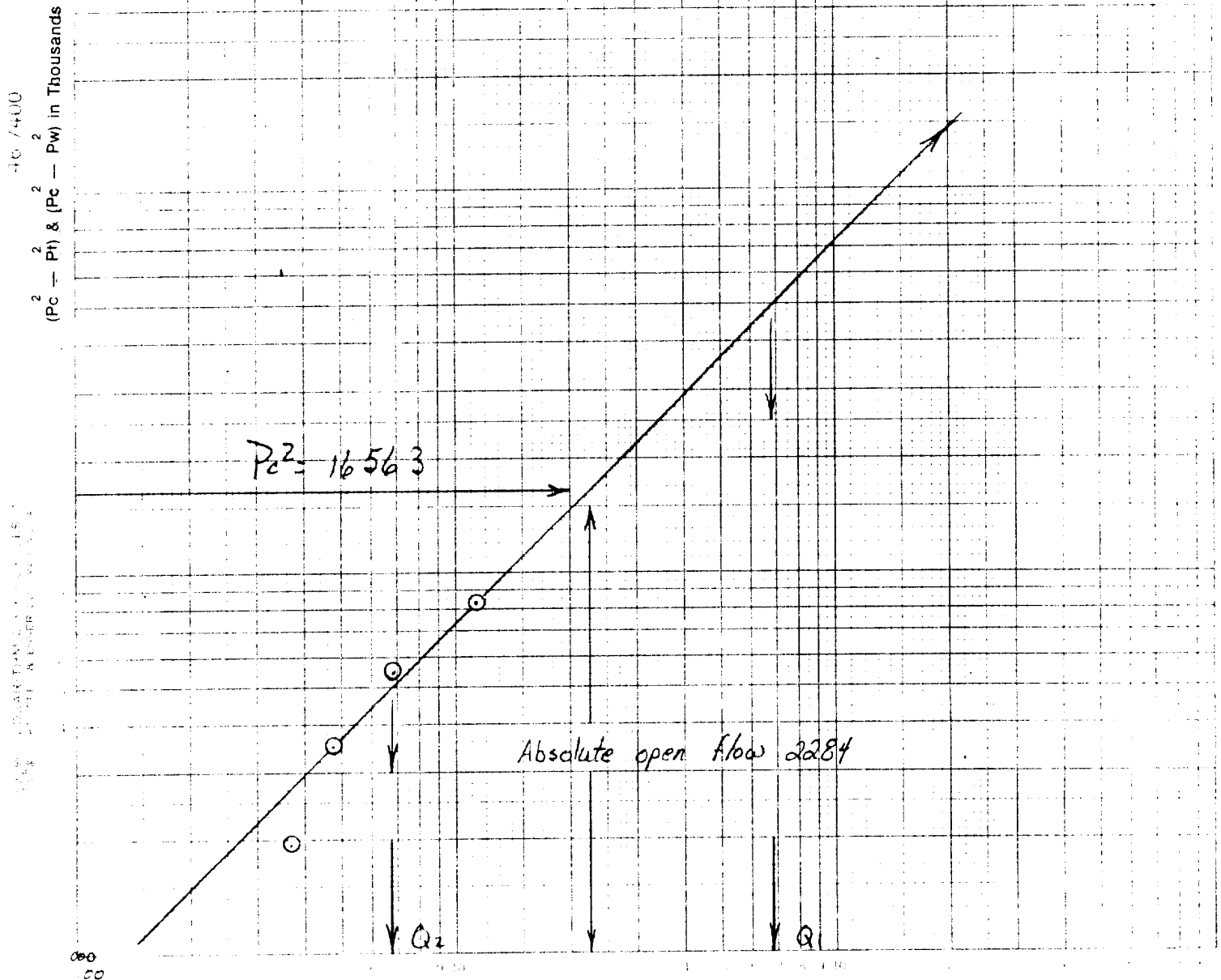
NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPLE POINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
 Revised 9-1-65

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 12-7-84							
Company HEYCO			Connection AIR NEW WELL								
Pool AUSTIN MISSISSIPPIAN			Formation MISSISSIPPIAN		Unit J						
Completion Date 11-20-84		Total Depth 0.		Plug Back To 13060.	Elevation 3982.						
Farm or Lease Name GOODRICH UNIT											
Flow Size 5.500	Wt. 17.0	d 4.892	Set At 12939.	Perforations: From 12893. To 13060.							
Flow Size 2.375	Wt. 4.7	d 1.995	Set At 12685.	Perforations: From 0. To 0.							
Type well - Single - Unscreened - G.G. or G.O. Multiple SINGLE				Packer Set At 12685.							
Producing thru TUBING		Reservoir Temp. °F 235. 12977.		Mean Annual Temp. °F 60.0							
L 12977.		H 12977.		Cg 0.644							
% CO ₂ 0.64		% N ₂ 0.81		% H ₂ O 0.							
Prover 0.		Motor Run 4.0		Top FLANGE							
FLOW DATA											
NO	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. in. H ₂ O	Temp. °F	Pross. p.s.i.g.	Temp. °F	Pross. p.s.i.g.	CHOKE	Duration of Flow
1	4.03 X 1.000		400.	9.0	90.	3690.		5341.			380.0
2	4.03 X 1.000		410.	15.0	90.	3420.		5052.		4/64	1.0
3	4.03 X 1.000		420.	30.0	86.	3160.		4798.		5.5/64	1.0
4	4.03 X 1.000		420.	30.0	86.	2865.		4459.		8.5/64	1.0
5	4.03 X 1.000		500.	70.0	81.	2450.		3879.		12/64	1.0
RATE OF FLOW CALCULATIONS											
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super. Compres. Factor, Fpv	Rate of Flow Q, Mscf/d				
1	4.75	60.98	413.2	0.9723	1.2461	1.0334	363.				
2	4.75	79.67	423.2	0.9723	1.2461	1.0342	474.				
3	4.75	114.00	433.2	0.9759	1.2461	1.0361	683.				
4	4.75	189.54	513.2	0.9804	1.2461	1.0443	1149.				
Gas Liquid Hydrocarbon Ratio 27.8 Act/bbl.											
A.P.L. Gravity of Liquid Hydrocarbons 0.63 Deg.											
Specific Gravity Separator Gas 0.644 X.X.X.X.X.X.X.X.											
Specific Gravity Flowing Fluid X.X.X.X.X 0.644											
Critical Pressure 672. P.S.I.A. 672. P.S.I.A.											
Critical Temperature 369. H 369. R											
NO.	P _i	P _w	P _w ²	P _i ² - P _w ²	(1) $\frac{P_i^2}{P_i^2 - P_w^2} = 1.9881$ (2) $\left[\frac{P_i^2}{P_i^2 - P_w^2} \right]^n = 1.9881$ AGF = Q $\left[\frac{P_i^2}{P_i^2 - P_w^2} \right]^n = 2284.$						
1	25653.	3825.	14630.	1933.							
2	23151.	3613.	13055.	3508.							
3	19996.	3333.	11110.	5453.							
4	15148.	2869.	8231.	8331.							
Absolute Open Flow 2284. Mscf @ 15.025					Angle of Slope 45.0		Slope, n 1.000				
Remarks BOTTOM HOLE PRESSURES MEASURED WITH AMERADA PRESSURE ELEMENTS.											
Approved by Commission		Conducted By RICHARD TOWNLEY		Calculated By BENNETT & CATHEY, INC.		Checked By					

DENNETT & CATHY PRODUCTION TESTING BACK PRESSURE CURVE

Operator Heyco Lease Goodrich unit Well No. 1
 County Lea Field Austin Mississippi Location 11 15 35
 Date of Test 12-7-84 Slope "n" 1.000 Angle of Slope 45°
 Calc. Abs. Potential 2284 MCF/D



$$\overline{\Delta P}_1^2 \quad P_c^2 - P_w^2 = \underline{50000}$$

$$\overline{\Delta P}_2^2 \quad P_c^2 - P_w^2 = \underline{5000}$$

$$Q_1 = \underline{6900}$$

$$Q_2 = \underline{690}$$

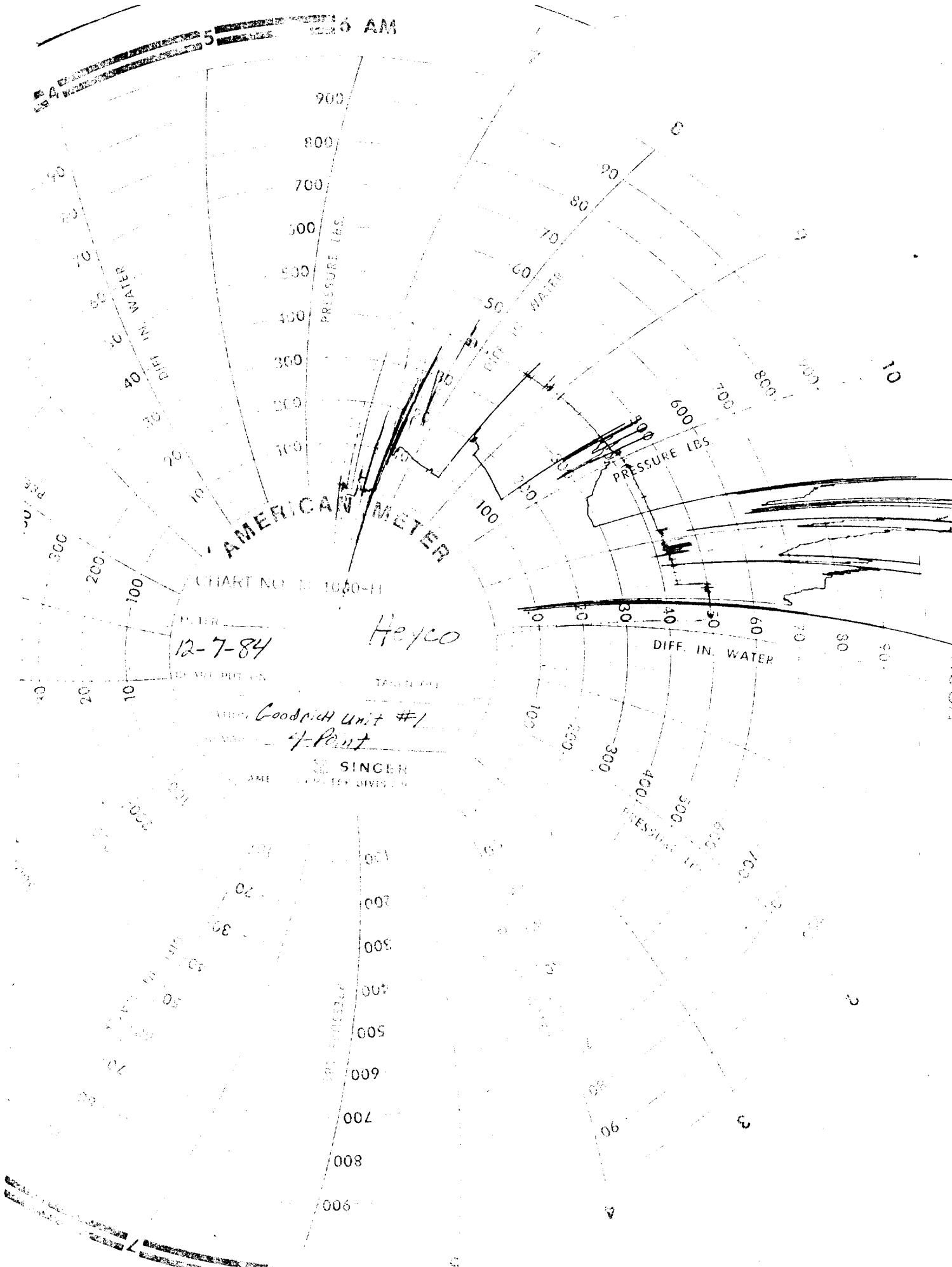
Q in MCF/Day

$$\text{LOG } Q_1 = \underline{3.8388}$$

$$\text{LOG } Q_2 = \underline{2.8388}$$

$$n = \underline{1.000}$$

5 6 AM



AMERICAN METER

CHART NO. 1000-H

12-7-84

Heyco

Goodrich Unit #1
4-Pent

SINGER

COMPANY: HEYCO
LEASE: GOODRICH UNIT
FIELD: AUSTIN MISSISSIPPIAN
COUNTY: LEA
STATUS: FOUR POINT BACK PRESSURE TEST
PERFORATIONS FROM: 12893 ft
DEPTH: 12675 ft

CONTACT: RAY ADAMS
WELL: #1
ZONE: MISSISSIPPIAN
STATE: NEW MEXICO
OPERATOR: RICHARD TOWNLEY
TO: 13060 ft
TEMPERATURE: 235°F

ELEMENT#
CLOCK#
ELEMENT# RP68-9526
CLOCK# 31758

ELEMENT RANGE: 0 psig
CLOCK RANGE: 0 sec
ELEMENT RANGE: 8100 psig
CLOCK RANGE: 43 sec

START CLOCK 12/06/84
SET ELEMENT 12/06/84
WELL SHUT IN 11/21/84
TEST ENDED 12/07/84

17:10:00 3707 psig
19:05:00 3707 psig
12:00:00 0 psig
12:00:00 2450 psig

GAIN= 1
FILE: HEYCO-2:D701

BIAS= 57 psi
BAROMETRIC PRESSURE= 13.2 psia

BENNETT-CATHEY WIRE LINE SERVICE
PHONE (505) 748-3354
ARTESIA, NEW MEXICO, 88210

PRESSURE TRANSIENT TEST DATA

COMPANY: HEYCO
LEASE: GOODRICH UNIT
FIELD: AUSTIN MISSISSIPPIAN
COUNTY: LEA
STATUS: FOUR POINT BACK PRESSURE TEST

CONTACT: RAY NOYES
WELL: #1
ZONE: MISSISSIPPIAN
STATE: NEW MEXICO
OPERATOR: RICHARD TOWNLEY

PERFORATIONS FROM: 12,882.0'
ELEMENT DEPTH: 12,675.0'

TO: 13,050.0'
TEMPERATURE: 235.0°F

ELEMENT: RANGE: 0 PSIG
CLOCK: RANGE: 0 HRS
ELEMENT: RF02#3525 RANGE: 2100 PSIG
CLOCK: 31762 RANGE: 48 HRS

SURFACE PRESSURE MEASUREMENTS

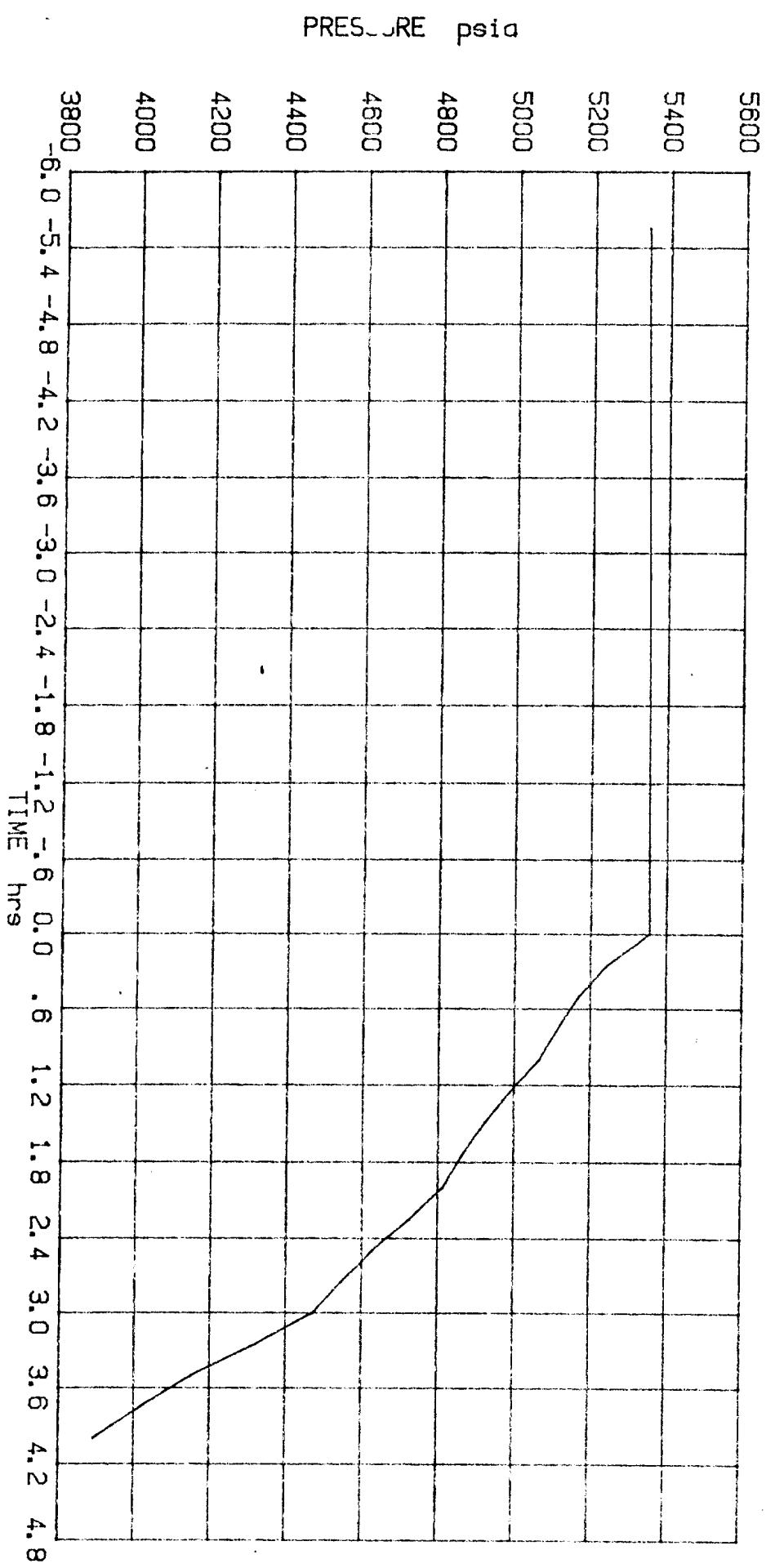
EVENT	DATE	TIME	DEAD WEIGHT PRESSURE
START CLOCK	12/06/84	17:10:00	3,707.0 PSIG
SET ELEMENT	12/06/84	19:06:00	3,707.0 PSIG
WELL SHUT IN	11/21/84	12:00:00	0.0 PSIG
END OF TEST	12/07/84	12:00:00	2,450.0 PSIG

SUBSURFACE PRESSURE MEASUREMENTS

DATE	TIME	ψ PPS	GAUGE PRESSURE PSIG	ABSOLUTE PRESSURE PSIA	RESERVOIR PRESSURE PSIA
12/07/84	02:25:23	-5.580	5,272.5	5,285.5	5,343.5
12/07/84	05:07:26	-2.379	5,279.5	5,292.0	5,349.0
12/07/84	07:21:07	-1.642	5,282.1	5,295.3	5,353.0
12/07/84	08:03:00	0.000	5,284.1	5,297.3	5,354.0
12/07/84	08:14:59	.130	5,179.8	5,197.0	5,344.0
12/07/84	08:30:01	.500	5,099.1	5,112.3	5,359.3
12/07/84	08:44:59	.750	5,045.0	5,058.3	5,318.3
12/07/84	09:00:01	1.000	4,994.7	5,007.9	5,064.0
12/07/84	09:15:00	1.250	4,919.5	4,932.7	5,089.7
12/07/84	09:30:02	1.500	4,851.5	4,864.6	4,951.6
12/07/84	09:45:00	1.750	4,792.0	4,805.2	4,892.2
12/07/84	09:59:59	2.000	4,741.2	4,754.5	4,841.5
12/07/84	10:15:01	2.250	4,684.6	4,697.9	4,784.6
12/07/84	10:29:59	2.500	4,555.2	4,568.5	4,655.2
12/07/84	10:45:01	2.750	4,476.4	4,489.6	4,576.4
12/07/84	11:00:00	3.000	4,401.5	4,414.7	4,501.7
12/07/84	11:14:59	3.250	4,251.5	4,264.7	4,351.7
12/07/84	11:30:01	3.500	4,081.5	4,094.7	4,181.7
12/07/84	11:44:59	3.750	3,947.0	3,960.2	4,047.2
12/07/84	12:00:01	4.000	3,821.9	3,835.1	3,922.1

TEST DATE: 12/06/84 TO 12/07/84
 TEST DEPTH: 12675 ft
 ELEMENT NO: RFG3#9526
 RANGE: 8100 psig
 CLOCK: 31768
 RANGE: 48 hrs
 OPERATOR: RICHARD TOWNLEY

RAY NOKES
HEYCO
GOODRICH UNIT #1
BENNETT-CATHEY WIRE LINE SERVICE Box 787 Artesia, N.M. 88210 (505) 748-3354





BENNETT-CATHEY WIRE LINE SERVICE

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



BOTTOM HOLE PRESSURE SURVEY REPORT

OPERATOR HEYCO
LEASE GOODRICH UNIT
WELL NO. # 1
POOL FORMATION
DATE 12-6-84 TIME 1906 HOUR
CO. MAN RAY NOKES
STATUS SHUT IN TEST DEPTH 12675 FEET
TIME S.I. 1200 HOUR LAST TEST DATE 1ST TEST
11-21-84 BHP LAST TEST
TUB. PRES. 3720.2# BHP CHANGE
CAS. PRES. FLUID TOP
DATUM PLANE WATER TOP
DATUM PSIA 5274.2# RUN BY TIM SHANNON
TEMP 235° CLOCK # B-3443
PRESSURE RANGE 8100 LBS.
ELEMENT NO. RPG3#9526

DEPTH	PSIA PRESSURE	LBS/100FT. GRADIENT
0	3720.2	
3000	4064.2	11.4
6000	4428.2	12.1
9000	4800.2	12.4
12525	5246.2	12.6
12675	5274.2	18.7
12977	5331.2	18.8

12977 FEET WAS EXTRAPOLATED.

TIME B.H.P. MEASURED 1906 HOUR.

LENGTH OF TIME WELL SHUT IN 367HR 6MIN.

PERFORATIONS FROM 12893 TO 13060 FEET.

