

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 8 24 89	
Company H L BROWN				Connection AIR			
Pool				Formation WOLFCAMP			
Completion Date		Total Length 7990		Plug Back TD 7590		Elevation 4341	
Farm or Lease Name BOYS RANCH							
Coq. Size 5.500	Wt. 17.0	d 4.892	Set At 7990	Perforations: From 7352 To 7366		Well No. 1	
Thq. Size 2.375	Wt. 4.7	d 1.995	Set At 7132	Perforations: From To		Unit Sec. Twp. Rge. 29 6S 34E	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple SINGLE GAS				Packer Set At 7138		County ROOSEVELT	
Producing Thru TUBING		Reservoir Temp. °F 145 • 7359		Mean Annual Temp. °F 60°		Baro. Press. - P _a 13.2	
State NEW MEXICO							
L 7359	H 7359	G _a .773	% CO ₂ .08	% N ₂ 8.04	% H ₂ S	Prover	Meter Run 4.0
						Taps FLANGE	

FLOW DATA						TUBING DATA		BHP 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							1135		1439	145	72
1.	4.03 X .750			100	3.0	92	1050	60	1355	145	1
2.	4.03 X .750			100	6.0	95	963	60	1247	145	1
3.	4.03 X .750			100	9.0	96	897	60	1165	145	1
4.	4.03 X .750			100	20.0	96	840	60	1101	145	1
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	2.66	18.43	113.2	.9706	1.1374	1.0110	55
2	2.66	26.06	113.2	.9680	1.1374	1.0108	77
3	2.66	31.92	113.2	.9671	1.1374	1.0107	94
4	2.66	47.58	113.2	.9671	1.1374	1.0107	141
5							

NO.	P _i	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1	.17	552	1.41	.978	0	
2	.17	555	1.42	.979	0	
3	.17	556	1.42	.979	.773	
4	.17	556	1.42	.979		
5						

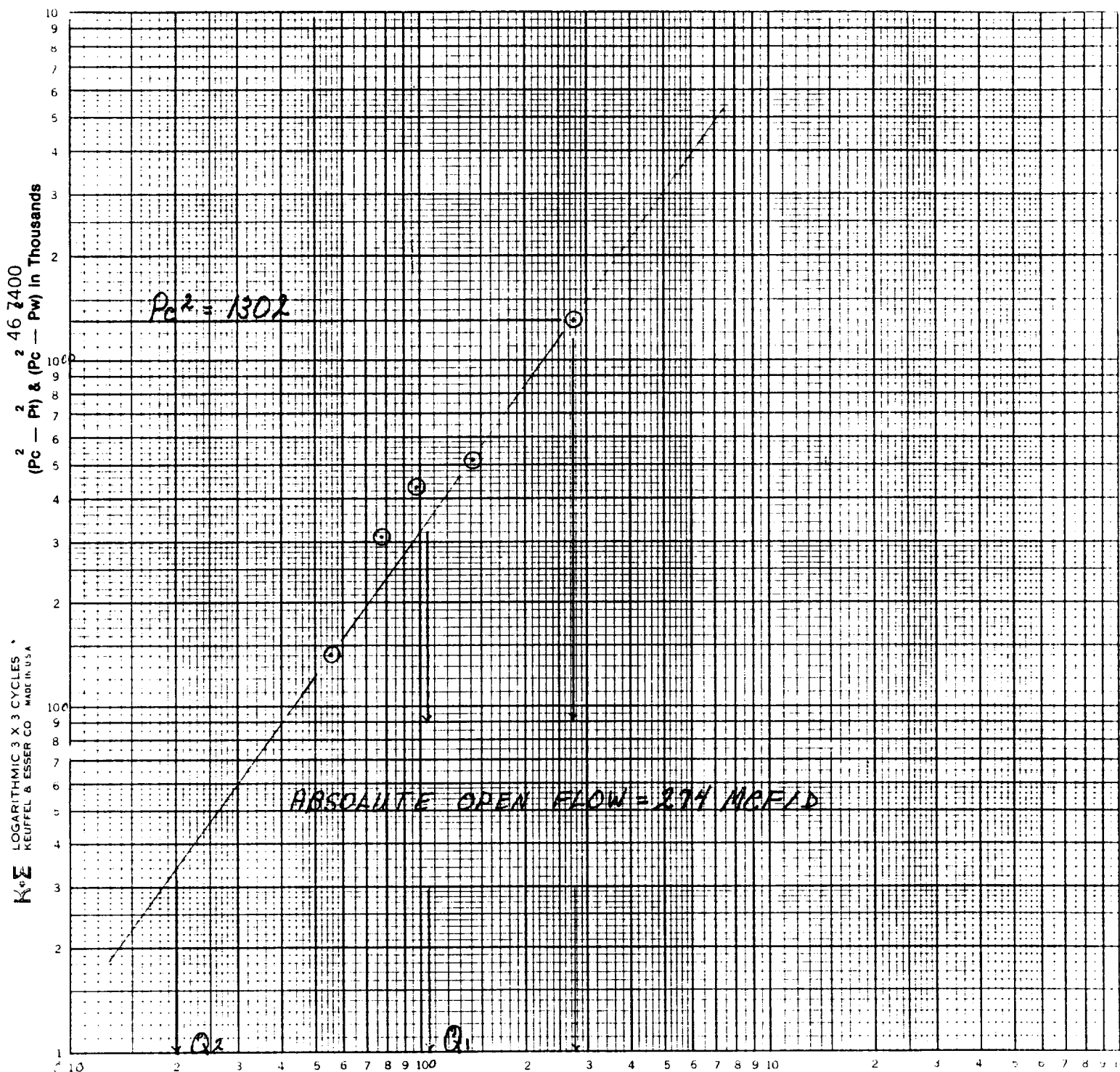
NO.	P _i	P _w	P _w ²	P _c ² - P _w ²	(1) $\frac{P_c^2}{P_c^2 - P_w^2} =$	(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n =$
1	1871	1078	1162	141	2.5135	1.9501
2	1588	997	994	309		
3	1387	935	873	429		
4	1241	886	784	518		
5						

Absolute Open Flow 274 Mcfd @ 15.025				Angle of Slope 54.1		Slope, n .725	
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Remarks: CHOKER SIZE: 1ST RATE 1/64 2ND RATE 2.5/64 3RD RATE 4/64 4TH RATE 5.5/64			
SEP 1 1989 Approved By: Paul Kautz Geologist Conducted By: BENNETT-CATHEY Calculated By: MATT LEE Checked By:			

BACK PRESSURE CURVE

Operator H. L. BROWN Lease BOYS RANCH Well No. 1
 County Roosevelt Field _____ Location 29-65-34
 Date of Test 8-24-89 Slope "n" .725 Angle of Slope 54.1
 Calc. Abs. Potential 274 MCF/D



$$\overline{\Delta P}_1^2 \quad P_c^2 - P_w^2 = 340$$

$$\overline{\Delta P}_2^2 \quad P_c^2 - P_w^2 = 34$$

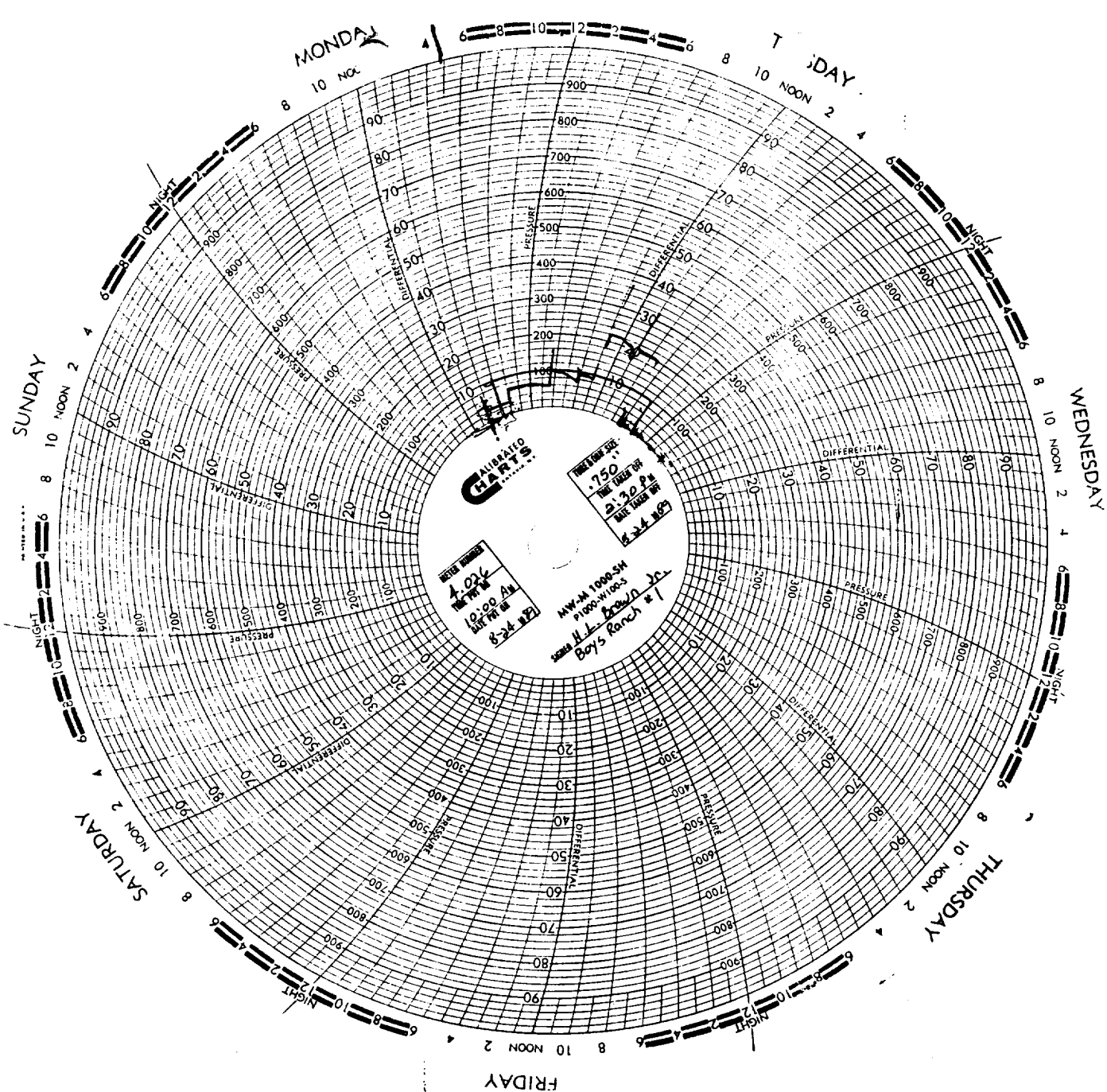
$$Q_1 = 106$$

$$Q_2 = 20$$

$$\text{LOG } Q_1 = 2.026$$

$$\text{LOG } Q_2 = 1.301$$

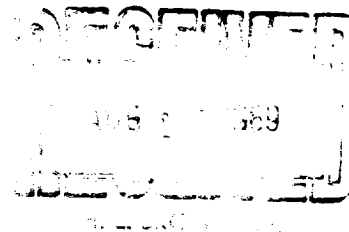
$$n = .725$$



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BENNETT-CATHEY

BOTTOM HOLE
DRAWDOWN / BUILD UP
REPORT

FOR:
H.L. BROWN
8/24/89

WELL INFORMATION :

LEASE :BOYS RANCH
LOCATION :0
COUNTY :ROOSEVELT

WELL # 1

FIELD :

FILE # BOYS-1
STATE :NM

ELEVATION : 0.00
TUBING SIZE :2.375
CASING SIZE :0
PACKER TYPE :0
PERFORATED 7352.0 to 7366.0 feet

ZERO POINT :GL
DEPTH : 7138.0
DEPTH : 0.0
@ 7138.00 feet
TOTAL DEPTH : 0.0

TEST INFORMATION :

WELL CONDITION :DD
SURFACE TUBING PRESSURE 1080 psig by DWT
SURFACE CASING PRESSURE psig by
BOTTOM HOLE TEMPERATURE 0 deg. F. at 7359.0 feet
BOTTOM HOLE PRESSURE 1108.3 psig at 7359.0 feet
INSTRUMENT TYPE : RPG-3
WELL TYPE :GAS
NUMBER : 22749 RUN BY : STAGGS

REAL TIME	ELAPSED TIME	HORNER coef	PRESSURE psig	dPRESSURE psig
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WELL FLOWING

10:15:00	000:00:00	0.00	1439.2	0.0
10:30:00	000:15:00	0.00	1416.1	-23.1
10:45:00	000:30:00	0.00	1393.0	-46.2
11:00:00	000:45:00	0.00	1369.9	-69.3
11:15:00	001:00:00	0.00	1354.5	-84.7
11:30:00	001:15:00	0.00	1323.8	-115.4
11:45:00	001:30:00	0.00	1293.0	-146.2
12:00:00	001:45:00	0.00	1264.8	-174.4
12:15:00	002:00:00	0.00	1246.8	-192.4
12:30:00	002:15:00	0.00	1221.1	-218.1
12:45:00	002:30:00	0.00	1198.1	-241.1
13:00:00	002:45:00	0.00	1182.7	-256.5
13:15:00	003:00:00	0.00	1164.7	-274.5
13:30:00	003:15:00	0.00	1141.6	-297.6
13:45:00	003:30:00	0.00	1123.7	-315.5
14:00:00	003:45:00	0.00	1108.3	-330.9
14:15:00	004:00:00	0.00	1100.6	-338.6

END OF TEST

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LINEAR PLOT

H.L. BROWN

Field :

Well # 1

Lease : BOYS RANCH

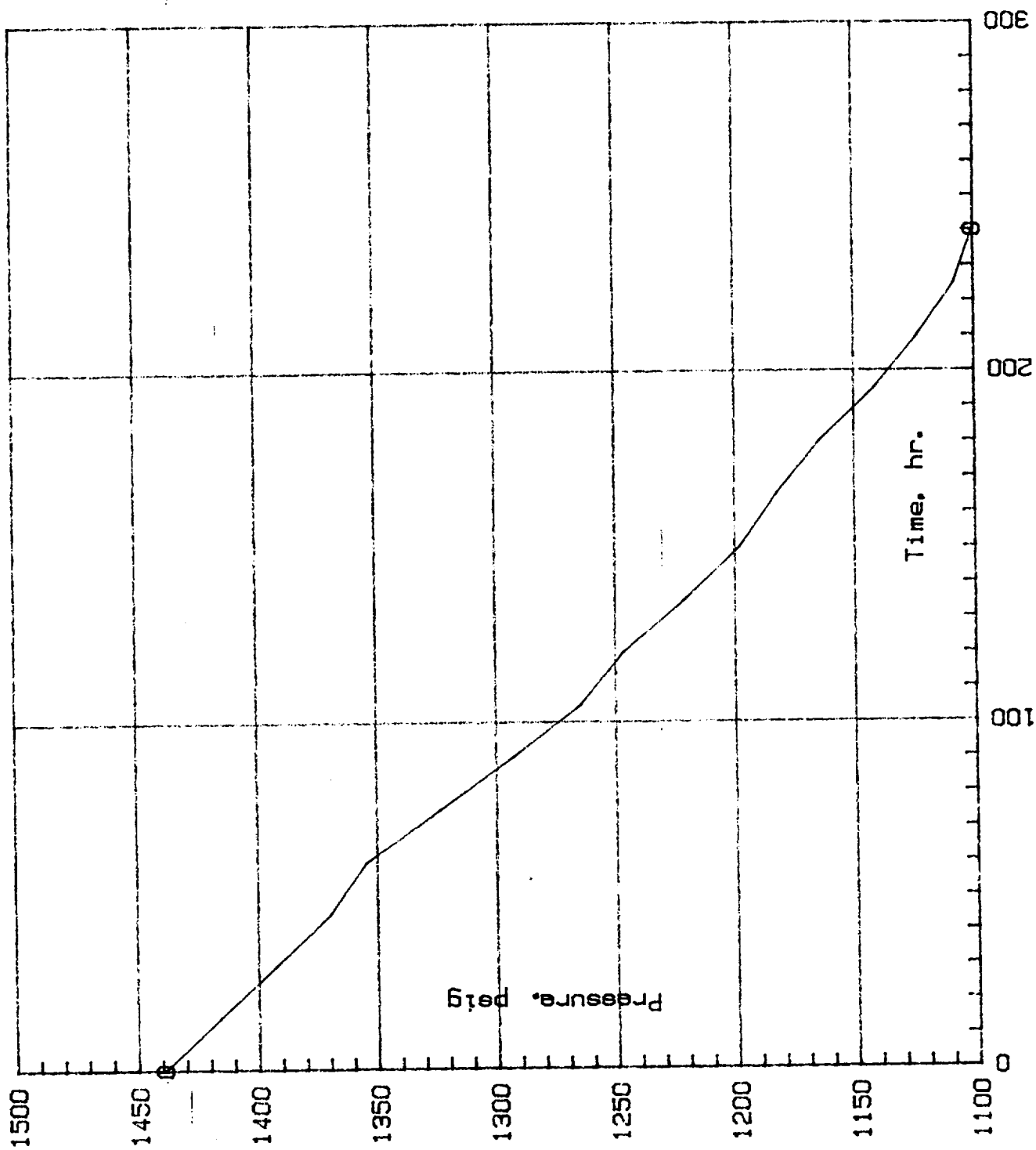
County : ROOSEVELT

State : NM

Date of Run : 8/24/89

Gauge # 22749

Run by : STAGGS



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BENNETT-CATHEY

BOTTOM HOLE
PRESSURE / GRADIENT
REPORT

FOR:
H.L. BROWN
8/24/89

WELL INFORMATION :

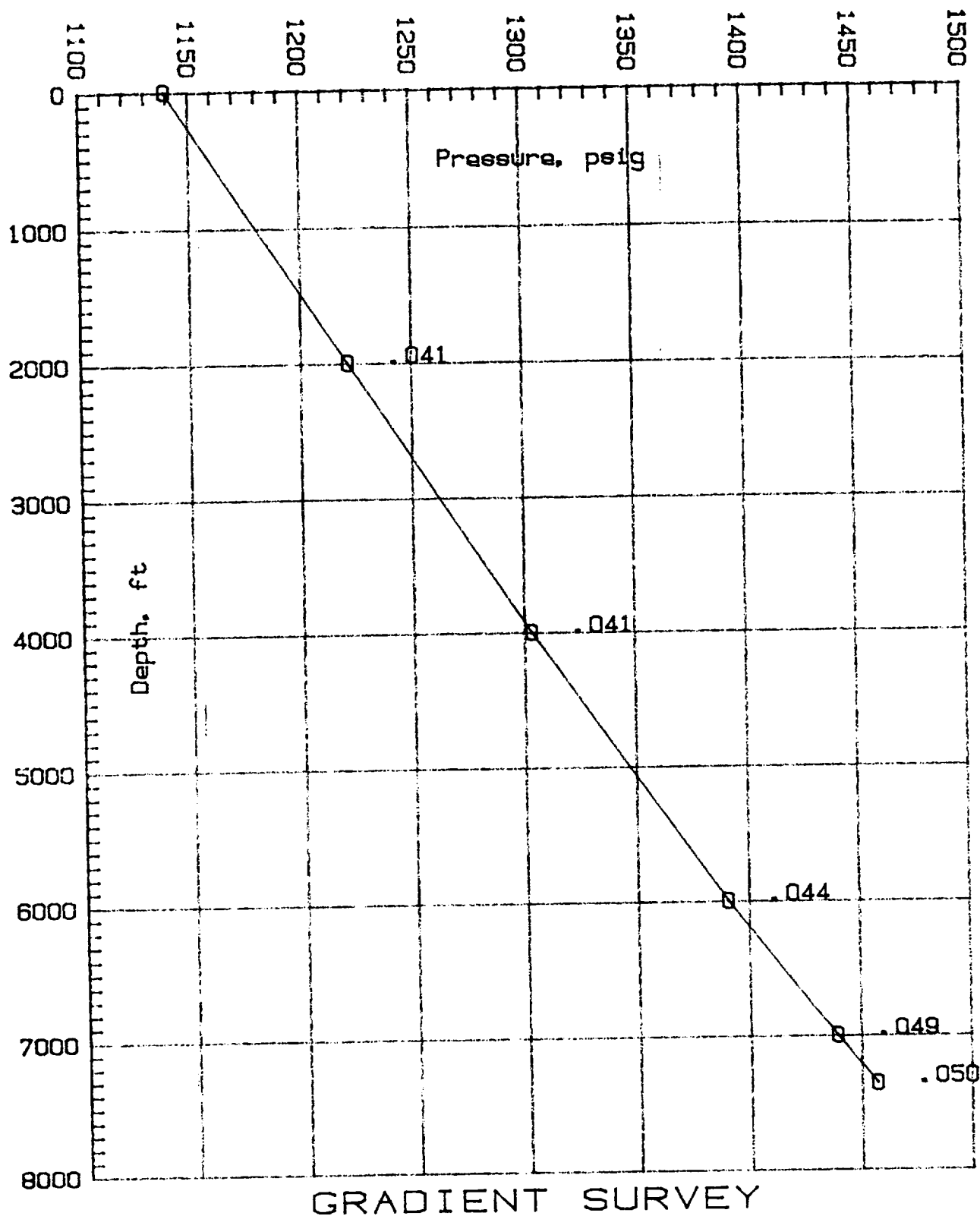
LEASE :BOYS RANCH	WELL # 1	FIELD :
LOCATION :0		FILE # BOYRAN-1
COUNTY :ROOSEVELT		STATE :NM
ELEVATION : 0.00		ZERO POINT :GL
TUBING SIZE :2.375		DEPTH : 7138.0
CASING SIZE :0		DEPTH : 0.0
PACKER TYPE :0		@ 7138.00 feet
PERFORATED 7352.0 to 7366.0 feet		TOTAL DEPTH : 0.0

TEST INFORMATION :

WELL CONDITION :SI	WELL TYPE :GAS
SURFACE TUBING PRESSURE 1080 psig by DWT	
SURFACE CASING PRESSURE 0 psig by 0	
BOTTOM HOLE TEMPERATURE 0 deg. F. at 7359.0 feet	
BOTTOM HOLE PRESSURE 1457.2 psig at 7359.0 feet	
INSTRUMENT TYPE : RPG-3	NUMBER : 22749 RUN BY : STAGGS

C&W WIRELINE dba BENNETT-CATHEY,P.O.BOX 787 ARTESIA,NM 88210

DEPTH ft	dDEPTH ft	PRESSURE psig	dPRESSURE psig	GRADIENT psig/ft
0		1139.0		
2000	2000	1221.1	82.1	.041
4000	2000	1303.2	82.1	.041
6000	2000	1390.5	87.2	.044
7000	1000	1439.2	48.7	.049
7359	359	1457.2	18.0	.050
EXTRAPOLATION TO MIDPOINT OF PERFORATIONS ;				
7359		1457.2		.050



H. L. BROWN

Field :

Well # 1

Lease : BOYS RANCH

County : ROOSEVELT

State : NM

Date of Run : 8/24/89

Gauge # 22749

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