

401
FILE

RECEIVED

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test 4-POINT ☒ Initial ☐ Annual ☐ Special		Test Date 5-4-87		NOV 08 '88	
Company MCKAY OIL CORP		Connection TO AIR NEW WELL		O. C. D.	
Pool PECOS SLOPE ABO		Formation ABO		Unit ARTESIA, OFFICE L	
Completion Date 5-1-87		Total Depth 4700 FT		Elevation 3758 FT	
Casing Size 4.500		Set At 4.052		Perforations: From 4128 FT To 4317 FT	
Tubing Size 2.375		Set At 1.995		Perforations: From To	
Type Well - Single - Brdenhead - G.G. or G.O. Multiple SINGLE		Packer Set At 0		Well No. #1	
Producing Thru TUBING		Reservoir Temp. °F 110 ° 4080 FT		Mam Annual Temp. °F 60.0 °	
Base Press. - P _g 13.2		County CHAVES		State NEW MEXICO	
L 4222 FT		H 4222 FT		G _g 0.652	
% CO ₂ 0.17		% N ₂ 5.13		% H ₂ S 0	
Prover 0		Meter Run 3.1		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							669	70	745	110	72.0
1.	3.07	X	0.875	100	4.0	84	645	71	712	110	1.0
2.	3.07	X	0.875	105	9.5	86	625	71	689	110	1.0
3.	3.07	X	0.875	110	24.0	74	577	73	637	110	1.0
4.	3.07	X	0.875	115	52.0	65	496	73	547	110	1.0
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	3.65	21.28	113.2	0.9777	1.2384	1.0087	95.
2	3.65	33.51	118.2	0.9759	1.2384	1.0089	149.
3	3.65	54.38	123.2	0.9868	1.2384	1.0102	245.
4	3.65	81.65	128.2	0.9952	1.2384	1.0114	372.
5							

NO.	P _t	Temp. °R	T _i	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	0.17	544.	1.51	0.983	0.	0.	0.652	XXXXXX	662.	361.
2	0.18	546.	1.51	0.982				XXXXX		
3	0.19	534.	1.48	0.980						
4	0.19	525.	1.46	0.978						
5										

NO.	P _i	P _w	P _u	P _i ² - P _w ²
1		725	526	49
2		702	493	81
3		651	424	151
4		562	316	259
5				

(1) $\frac{P_c^2}{P_i^2 - P_w^2} = 2.2213$ (2) $\left[\frac{P_i^2}{P_i^2 - P_w^2} \right]^n = 1.8840$

AOR = Q $\left[\frac{P_i^2}{P_i^2 - P_w^2} \right]^n = 700.$

Post 10-2
8-14-87
Comp BK.

Absolute Open Flow	700.	Mold @ 15.025	Angle of Slope °	51.6	Slope, n	0.749
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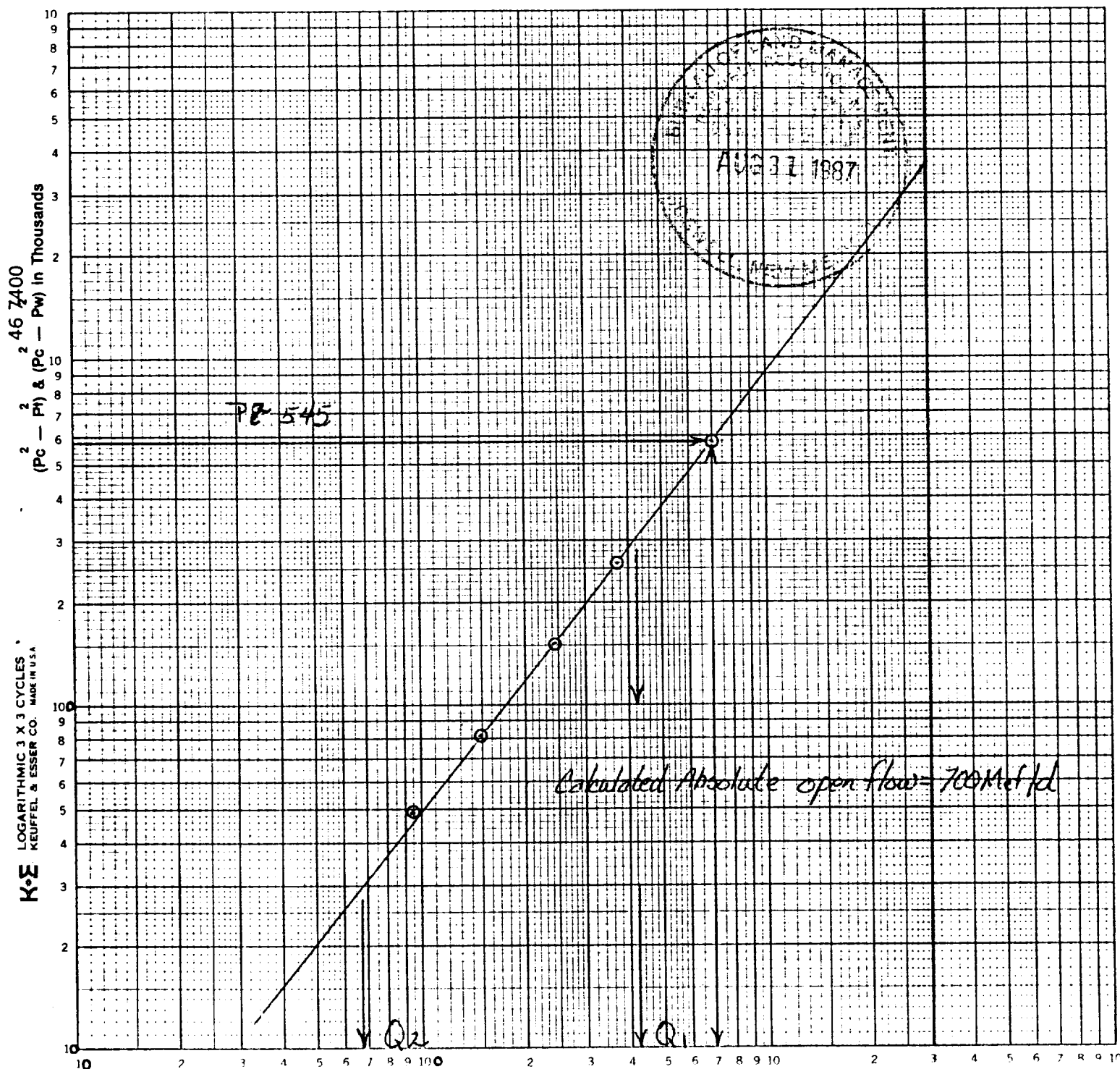
Remarks: BHP MEASURED BY AMERADA RPG3 BHP ELEMENTS

Approved By Division	Conducted By: BENNETT & CATHEY	Calculated By: RICHARD TOWNLEY	Checked By: RICHARD TOWNLEY
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BENNETT & CATHEY PRODUCTION TESTING BACK PRESSURE CURV.

Operator McKay Oil Corp. Lease Pecos Federal Well No. 1
 County Chaves Field Pecos Slope Location L 34 7S 26E
 Date of Test 5-4-87 Slope "n" 0.794 Angle of Slope 51.6

Calc. Abs. Potential 700 MCF/D



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

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

$$Q_1 = 423$$

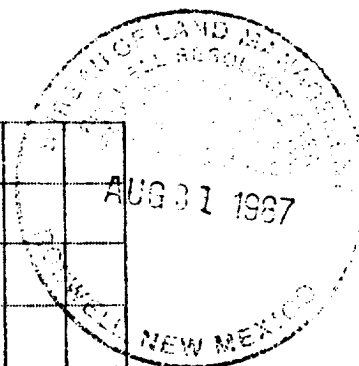
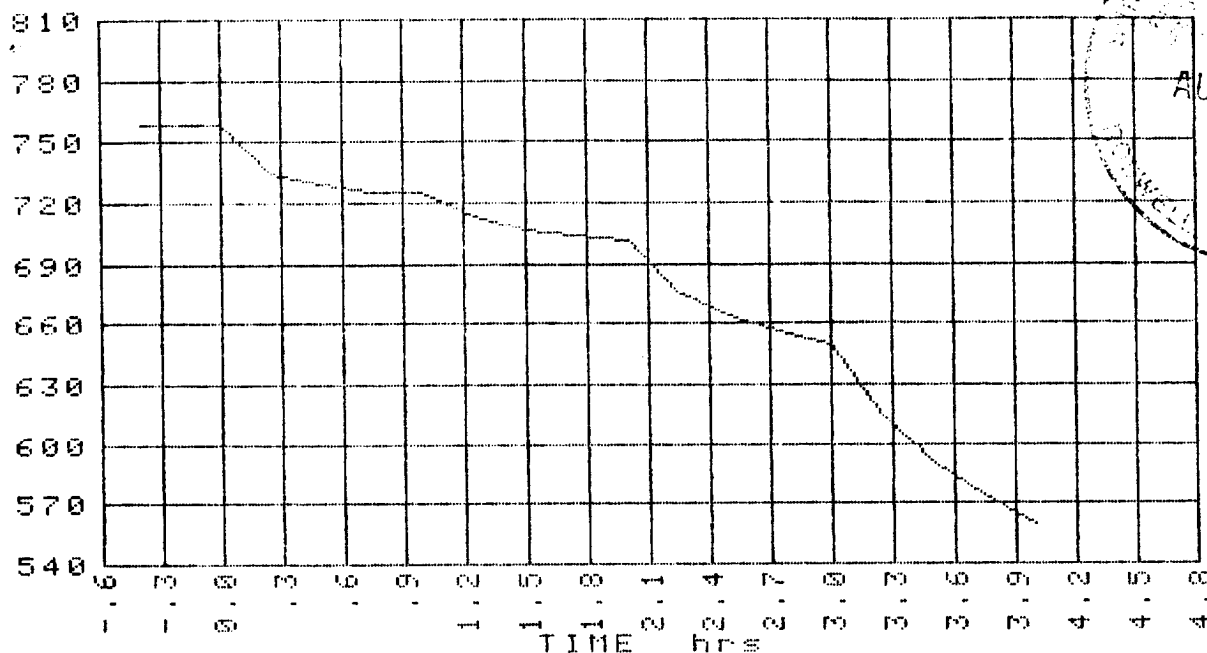
$$Q_2 = 68$$

$$\text{LOG } Q_1 = 2.6263$$

$$\text{LOG } Q_2 = 1.8325$$

$$n = 0.7938 = .794$$

PRESSURE psia



COMPANY: MCKAY OIL
 LEASE: PECOS FEDERAL
 FIELD:
 COUNTY: CHAVES
 STATUS: FOUR POINT BACK PRESSURE TEST
 PERFORATIONS FROM: 4128 ft
 DEPTH: 4080 ft

CONTACT: CLARENCE SPERLING
 WELL: #1
 ZONE: ABO
 STATE: NEW MEXICO
 OPERATOR: RICHARD TOWNLEY
 TO: 4317 ft
 TEMPERATURE: 110°F

ELEMENT# RP63#21121
 CLOCK# 21357
 ELEMENT# RP63#17772
 CLOCK# 3443

ELEMENT RANGE: 5175 psig
 CLOCK RANGE: 24 hrs
 ELEMENT RANGE: 3850 psig
 CLOCK RANGE: 12 hrs

START CLOCK 05/04/87
 SET ELEMENT 05/04/87
 WELL SHUT IN 11/11/11
 TEST ENDED 05/04/87

09:15:00 669 psig
 10:12:00 669 psig
 00:00:00 0 psig
 17:45:00 476 psig

GAIN= 1
 FILE: 136-PECOS:D701

BIAS= 4 psi
 BAROMETRIC PRESSURE= 13.2 psia

5 6 AM

7

8

9

10

11

NOON

1

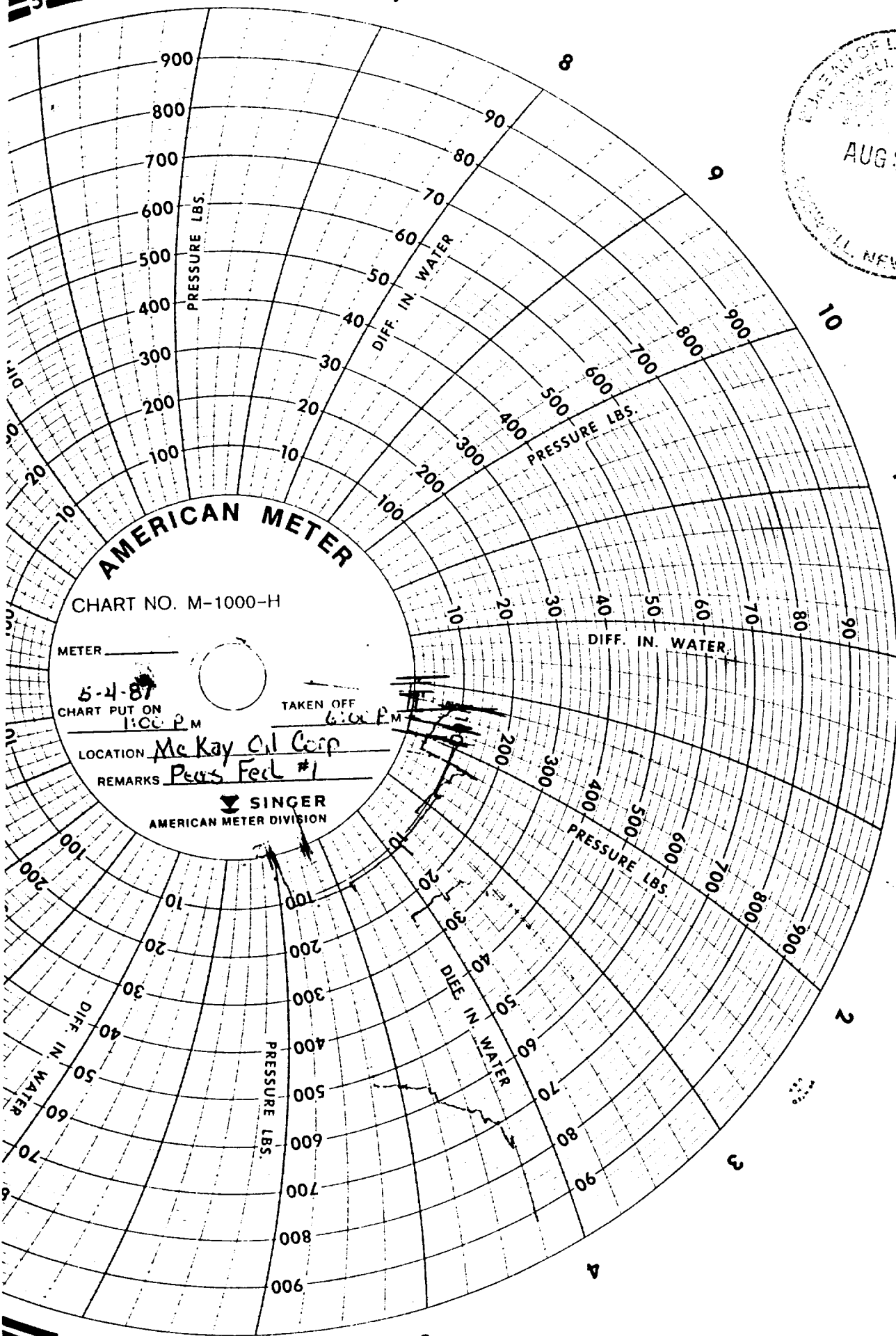
2

3

4

5

7 6 PM



AMERICAN METER

CHART NO. M-1000-H

METER _____

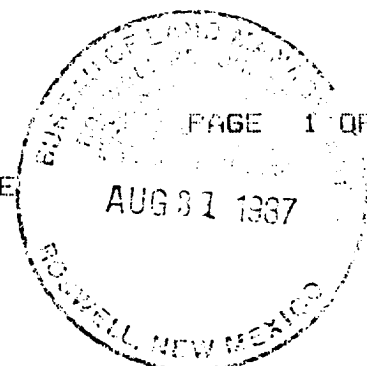
5-4-87
CHART PUT ON
1:00 P.M.

TAKEN OFF
6:00 P.M.

LOCATION McKay Oil Corp

REMARKS Pears Field #1

SINGER
AMERICAN METER DIVISION



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

PRESSURE TRANSIENT TEST DATA

COMPANY: MCKAY OIL
LEASE: PECOS FEDERAL
FIELD:
COUNTY: CHAVES
STATUS: FOUR POINT BACK PRESSURE TEST

CONTACT: CLARENCE SPERLING
WELL: #1
ZONE: ABO
STATE: NEW MEXICO
OPERATOR: RICHARD TOWNLEY

PERFORATIONS FROM: 4,128.0'
DEPTH: 4,080.0'

TO: 4,317.0'
TEMPERATURE: 110.0°F

ELEMENT: RPO3#21121
CLOCK: 21357
ELEMENT: RPO3#17772
CLOCK: 3443

RANGE: 5175 psig
RANGE: 24 hrs
RANGE: 3850 psig
RANGE: 12 hrs

SURFACE PRESSURE MEASUREMENTS

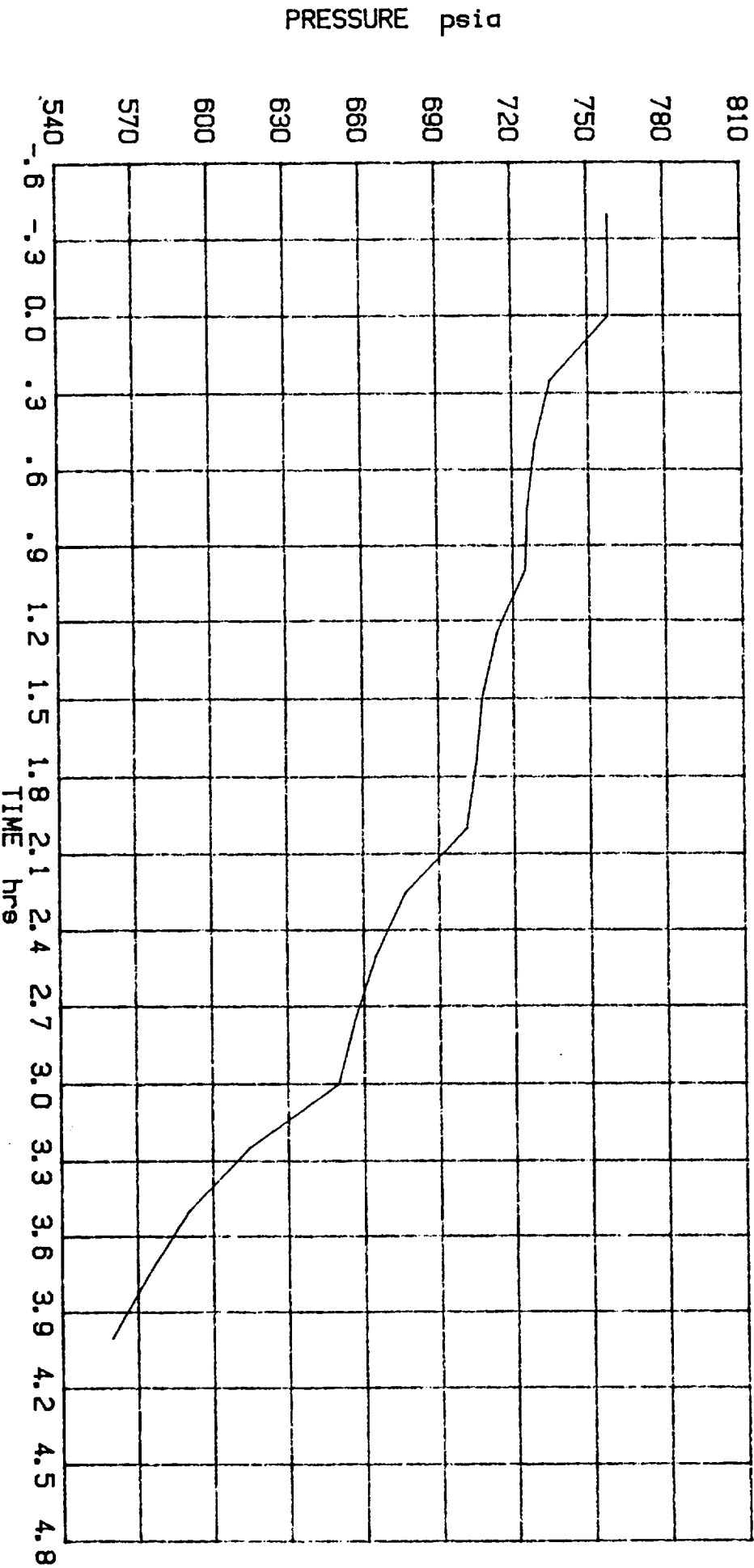
EVENT	DATE	TIME	DEAD WEIGHT PRESSURE
START CLOCK	05/04/87	09:15:00	669.0 psig
SET ELEMENT	05/04/87	10:12:00	669.0 psig
WELL SHUT IN	11/11/11	00:00:00	0.0 psig
TEST ENDED	05/04/87	17:45:00	496.0 psig

SUBSURFACE PRESSURE MEASUREMENTS

DATE	TIME	t hrs	GAUGE PRESSURE psig	ABSOLUTE PRESSURE psia	RESERVOIR PRESSURE psia
05/04/87	13:21:14	-.396	741.0	754.2	758.2
05/04/87	13:45:00	0.000	741.0	754.2	758.2
05/04/87	14:00:00	.250	718.0	731.2	735.2
05/04/87	14:15:00	.500	711.8	725.0	729.0
05/04/87	14:30:00	.750	708.6	721.8	725.8
05/04/87	14:45:00	1.000	707.7	720.9	724.9
05/04/87	15:00:00	1.250	696.2	709.4	713.4
05/04/87	15:15:00	1.500	690.1	703.3	707.3
05/04/87	15:30:00	1.750	687.6	700.8	704.8
05/04/87	15:45:00	2.000	683.9	697.1	701.1
05/04/87	16:00:00	2.250	659.5	672.7	676.7
05/04/87	16:15:00	2.500	647.6	660.8	664.8
05/04/87	16:30:00	2.750	639.2	652.4	656.4
05/04/87	16:45:00	3.000	632.6	645.8	649.8
05/04/87	17:00:00	3.250	597.1	610.3	614.3
05/04/87	17:15:00	3.500	573.1	586.3	590.3
05/04/87	17:30:00	3.750	557.1	570.3	574.3
05/04/87	17:45:00	4.000	542.7	555.9	559.9

TEST DATE: 05/04/87 TO 05/04/87
 TEST DEPTH: 4080 ft
 ELEMENT NO: RPC3#17772
 RANGE: 3850 psi g
 CLOCK: 3443
 RANGE: 12 hrs
 OPERATOR: RICHARD TOWNLEY

CLARENCE SPERLING
MCKAY OIL
PECOS FEDERAL #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

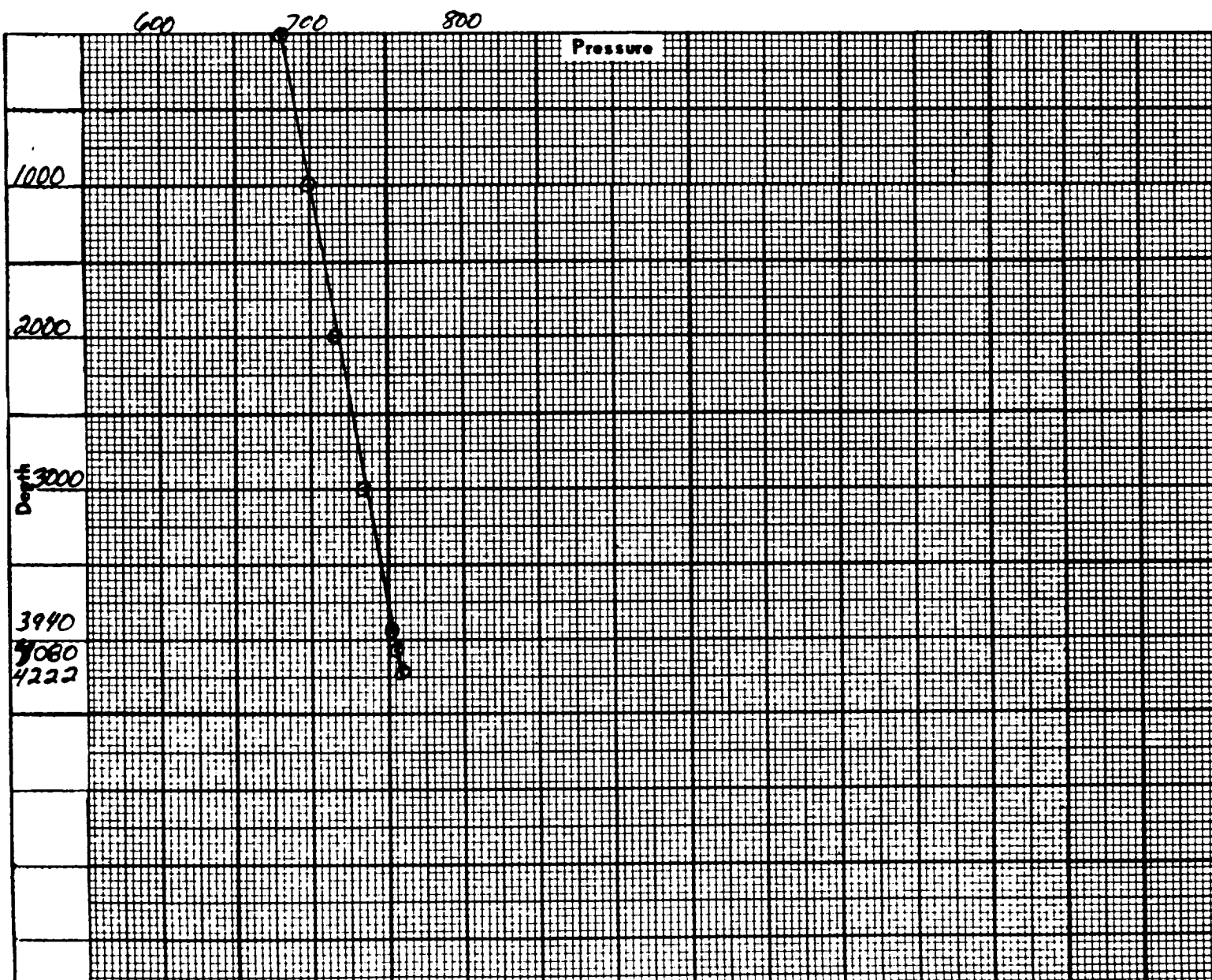


BOTTOM HOLE PRESSURE SURVEY REPORT

OPERATOR MCKAY OIL
 LEASE PECOS FEDERAL
 WELL NO. #1
 POOL FORMATION ABO
 DATE 5- 4-87 TIME 1012 HRS.
 CO. MAN CLERENCE SPERLING
 STATUS SHUT IN TEST DEPTH 4080 FEET
 TIME S.I. N/A LAST TEST DATE
 BHP LAST TEST
 TUB. PRES. 669# BHP CHANGE
 CAS. PRES. FLUID TOP
 DATUM PLANE WATER TOP
 DATUM PSIA 759.2 RUN BY JOE HERNANDEZ
 TEMP 110° CLOCK # 3443
 PRESSURE RANGE 0-3850#
 ELEMENT NO. RP3#17772

DEPTH	PSIA PRESSURE	LB/100 FT GRADIENT
0	682.2	
1000	698.2	1.6
2000	715.2	1.8
3000	734.2	1.8
3940	751.2	1.8
4080	755.2	2.8
4222	759.2	2.8

4222 FEET IS EXTRAPOLATED
 LENGTH OF TIME WELL SHUT IN
 72 HRS.+
 PERFS: 4128 FT TO 4317 FT



**Flow Measurement Engineers
Analysis Results Summary
Casper, WY 82601**

Run No. 505-1
Date Run 05/05/87
Date Sampled 05/04/87

Lease: <u>PECOS FEDERAL #1</u>	Producer <u>MCKAY OIL CORP.</u>
Location <u>ISLER</u>	County <u>CHAVES</u> State <u>NEW MEXICO</u>
Purpose <u>WELL TEST</u>	Sampled By <u>B & C WRLN.</u>
Sampling Temp. <u>66</u> °F	Atmos Temp. <u>65</u> °F
Volume/day <u>366 MCF</u>	Formation <u>ABO</u>
Pressure on Bomb <u>115</u>	PSIG: Line Pressure <u>128.2</u> PSIA <u>PSIG</u>

Press. Base: 14.73

BTU Dry	<u>1076</u>
BTU Wet	<u>1058</u>
Calc. Specific Gravity	.652

BTU Dry	1074
BTU Wet	1055

Reid Vap. Press. #/Sq.In.

Z Factor	.9976
N Value	1.2995
Ave Mol Wt	18.8388
Ave Cu Ft/Gal	

Run by JEFFREY A. PROPP

Calculated By JEFFREY A. PROPP

Ethane + GPM 2.390

Remarks:

Distribution:

