

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENTP. O. BOX 2088
SANTA FE, NEW MEXICO 87501Form C-122
Revised 10-1-78

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ FOUR POINT ☐ Annual ☐ Special		Test Date 1-12-82		RECEIVED 990 FNL	
Company ELK OIL COMPANY ✓		Connection AIR NEW WELL		1980 JAN 20 1982	
Pool UNDESIGNATED <i>ABO</i>		Formation ABO		Unit B	
Completion Date 12-28-81		Total Depth 6200		Plug Back TD 5300	
Elevation 3811 KB		Farm or Lease Name RUNYAN STATE		O. C. D.	
Coq. Size 5.500	Wt. 15.5	d 4.950	Set At 5,300	Perforations: From 4783 To 4838	
Trq. Size 2.375	Wt. 4.7	d 1.995	Set At 4,735	Perforations: From OPEN To ENDED	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple SINGLE				Packer Set At NONE	
Producing Thru TUBING		Reservoir Temp. °F 111 @ 4,811		Mean Annual Temp. °F 60°	
Baro. Press. - P _a 13.2		State NEW MEXICO		County CHAVES	
L 4810	H 4810	Gg 0.674	% CO ₂ 3.22	% N ₂ 6.27	% H ₂ S 2.00
Prover 2.00		Meter Run		Taps	

FLOW DATA							TUBING 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							951		1100		360 HRS.
1.	2"	X	.0625	928		41	928	43	1080		1
2.	2"	X	.09375	893		44	893	38	1046		1
3.	2"	X	.125	855		41	855	37	994		1
4.	2"	X	.1875	738		46	738	36	855		1
5.											

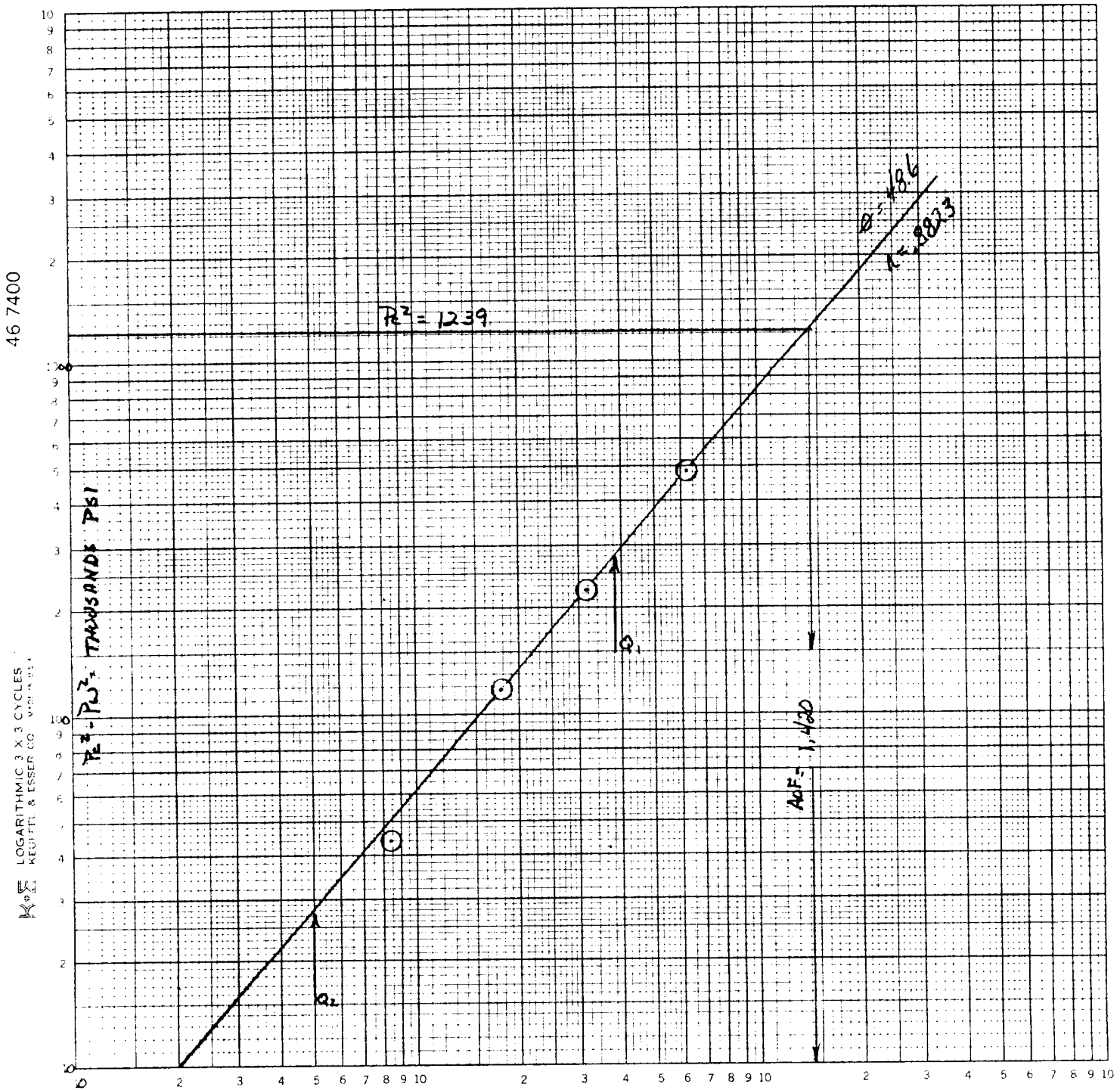
RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor F _t	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	.0657	.00	941.2	1.0188	1.2181	1.0990	84
2	1.446	.00	906.2	1.0157	1.2181	1.0924	177
3	.2716	.00	868.2	1.0188	1.2181	1.0911	319
4	.6237	.00	751.2	1.0137	1.2181	1.0740	621
5							

NO.	P _t	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
1	1.40	501	1.40	.828	A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
2	1.35	504	1.41	.838	Specific Gravity Separator Gas .6740
3	1.29	501	1.40	.840	Specific Gravity Flowing Fluid X X X X X
4	1.12	506	1.42	.867	Critical Pressure 673 P.S.I.A.
5					Critical Temperature 357 R

NO.	P _t	P _w	P _w ²	P _c ² - P _w ²	(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.5551$	(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2.2879$
1	1093.2	1195.1	44.0			
2	1059.2	1121.9	117.0			
3	1007.2	1014.5	225.0			
4	868.2	753.8	485.0			
5						

Absolute Open Flow 1,420.8 Mcfd @ 15.025			Angle of Slope 48.6		Slope, n 8823	
Remarks: BOTTOM HOLE PRESSURES MEASURED WITH AMARADA PRESSURE ELEMENTS.						
Approved By Division		Conducted By: RICHARD TOWNLEY		Calculated By: BENNETT & CATHEY		Checked By:

ELK OIL COMP.
 RUNYAN STATE #1
 B 24 95 26E
 CHAVES COUNTY
 1-12-82



$$\Delta P_1: P_c^2 - P_w^2 = 280$$

$$\Delta P_2: P_c^2 - P_w^2 = 28$$

$$Q_1 = 381$$

$$Q_2 = 50$$

$Q, \text{ Mcfd}$

$$\text{LOG } Q_1 = 2.58127$$

$$Q_2 = 1.69897$$

$$n = .8823$$

COMPANY ELK OIL COMPANY WELL NAME RUNYAN STATE WELL NO. 1
DATE OF TEST 1-12-82 FORMATION ABO PAGE 1 OF 1

ELEMENT NUMBER RPG3 #7201B RANGE 3,200 LBS.
CLOCK NUMBER B3443 RANGE 12 HOURS
TIME WELL SHUT IN 12-28-81
TIME CLOCK STARTED 0754 HOURS
DEAD WEIGHT ELEMENT ON SURFACE 964 SHUT IN PSIA LBS.
TIME ELEMENT REACHED BOTTOM 0819 HOURS
DEAD WEIGHT ELEMENT ON BOTTOM 964 SHUT IN PSIA LBS.
ELEMENT SET AT 4811 FEET.
TEMPERATURE 4811 FT. 111 °F.
DEAD WEIGHT AT THE END OF _____ HOURS _____ MINUTES.

[illegible]

TEST DATE: 1-12-82
TEST DEPTH: 4,811 FEET

ELEMENT NO.: RPG3 #7201B
RANGE: 3,200 LBS.

CLOCKS: B3443
RANGE: 12 HOURS

OPERATOR: RICHARD TOWNLEY

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

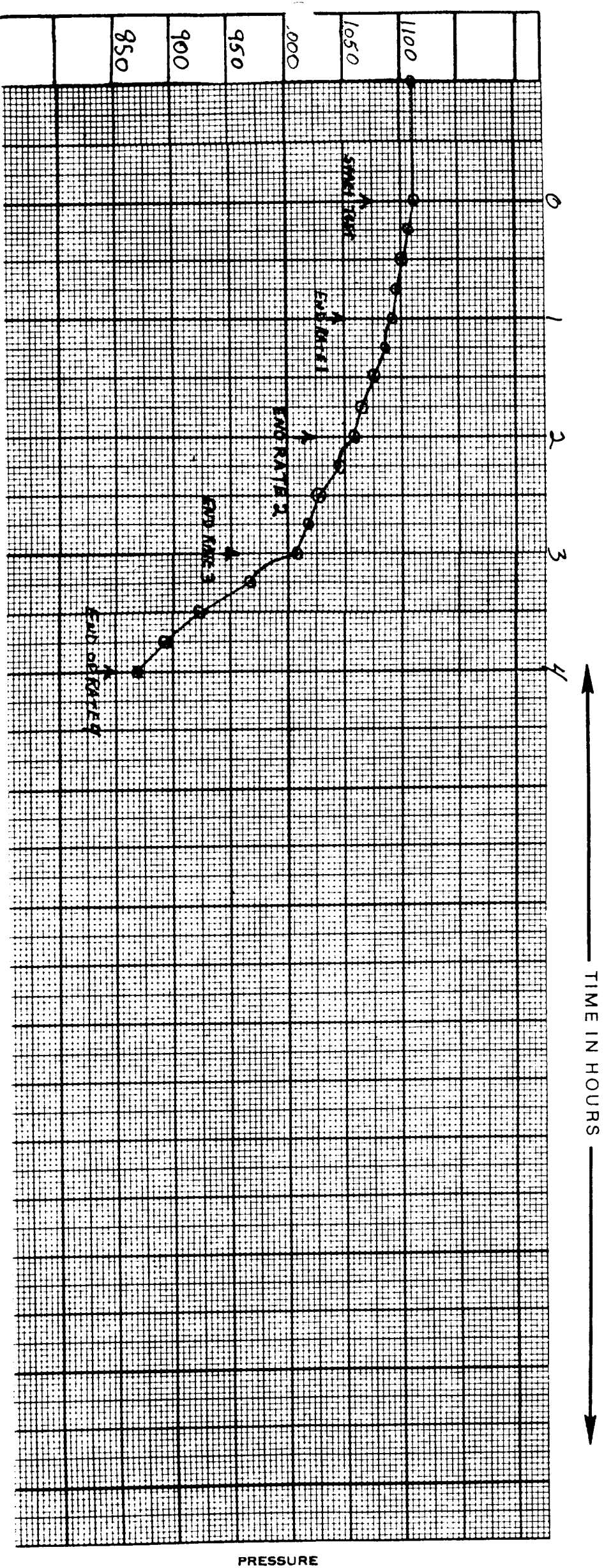
JOE KELLY

ELK OIL COMPANY

BENNETT-CATHEY WIRE LINE SERVICE
Box 787
Artesia, N.M. 88210
505/746-3281

Drawn By Scale: As Shown

BENNETT-
CATHEY
WELL SERVICES



NEW-TECH 11.1
 P.O. BOX 1141
 HOBBBS NM 88041-1141
 505-293-0551

ANALYSIS AREA: 6429
 DATE OF RUN: 11-13-82
 DATE RECEIVED: 11-12-82

ANALYSIS CERTIFICATE

SAMPLE CLIENT: ELK OIL - RUNYAN STATE #1
 CLIENT: BERWETT-CATHEY OILFIELD / PRODUCTION TESTING
 ADDRESS: BOX 787
 STATE: ARIZONA NW 36212

INITIAL PRESS: 0 PSIG SAMPLING TEMP: 0 DEG F
 SAMPLE NUMBER:

*** GASE ANALYSIS ***

	WTL PERCENT	SAL/ WTL
1	0.1704877	
2	0.1111766	
3	0.593417	
4	0.1111766	1.1111766
5	0.1111766	1.1111766
6	0.1111766	1.1111766
7	0.1111766	1.1111766
8	0.1111766	1.1111766
9	0.1111766	1.1111766
10	0.1111766	1.1111766
11	0.1111766	1.1111766
12	0.1111766	1.1111766
13	0.1111766	1.1111766
14	0.1111766	1.1111766
15	0.1111766	1.1111766
16	0.1111766	1.1111766
17	0.1111766	1.1111766
18	0.1111766	1.1111766
19	0.1111766	1.1111766
20	0.1111766	1.1111766

1.47 NT-RED GRV: 0.17
 1.12 PENTANE PLUS GRV: 0.12

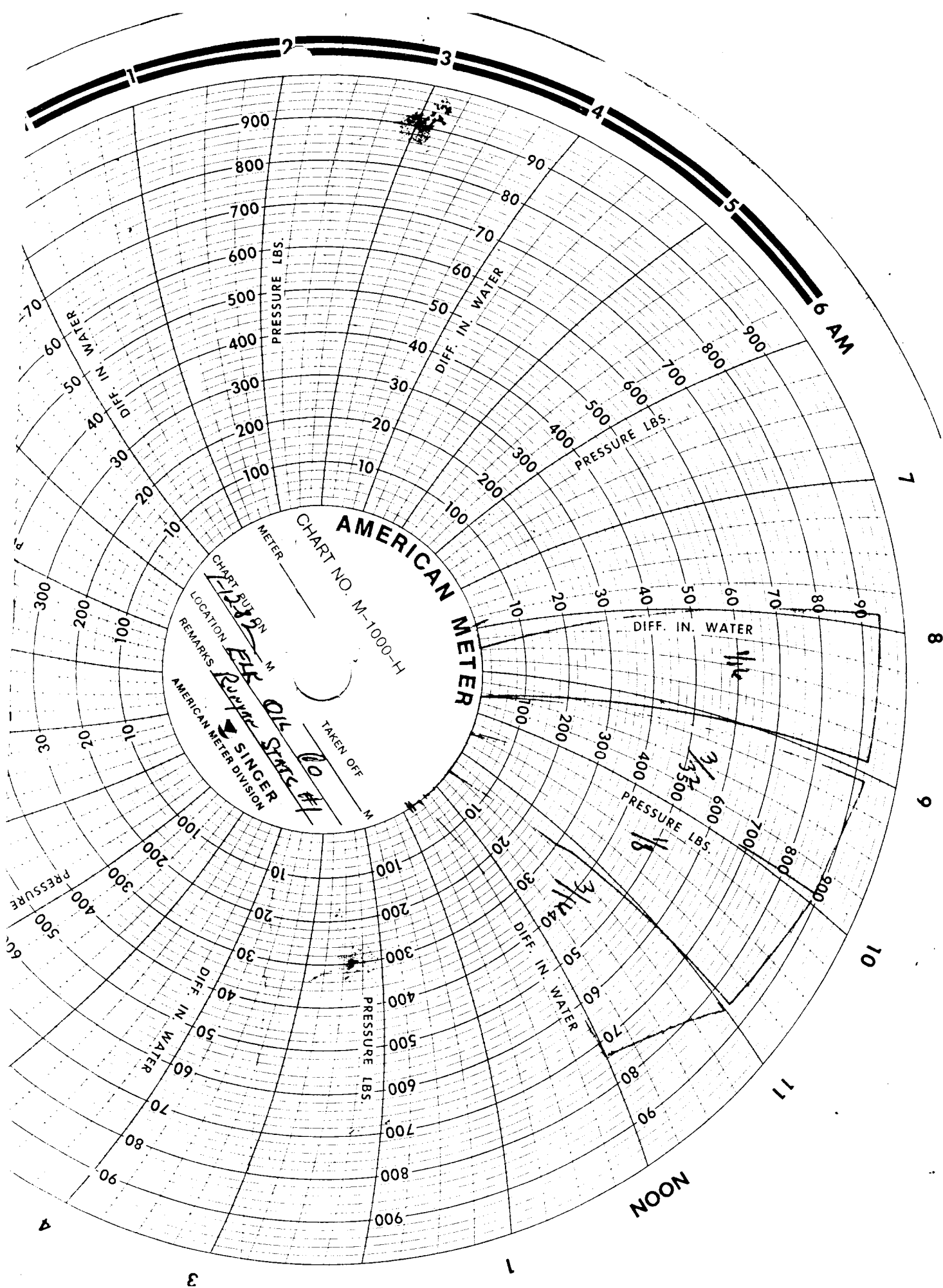
WTL (GRAY) (CALC): 16.734
 WTL (WTL): 19.51

WTL	PRESSURE (PSIA)	WTL	WTL
14.696	994	1812	
14.650	991	1809	
14.732	997	1814	
14.733	997	1815	

ANALYST: BY:

APPROVED BY:

Dean Mupson



BENNETT - CATHEY
Artesia, New Mexico 88210
SUBSURFACE PRESSURE MEASUREMENTS

COMPANY ELK OIL COMPANY WELL NAME RUNYAN STATE WELL NO. 1
DATE OF TEST 1-12-82 TO 1-15-82 FORMATION ABO PAGE 1 OF 1

CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

ELEMENT NUMBER RPG3 #7201B RANGE 3,200 LBS.
CLOCK NUMBER 17245 RANGE 72 HOURS
TIME WELL SHUT IN 1331 HOURS 1-12-82
TIME CLOCK STARTED 1314 HOURS
DEAD WEIGHT ELEMENT ON SURFACE 490 PSIA FLOWING LBS.
TIME ELEMENT REACHED BOTTOM 1330 HOURS
DEAD WEIGHT ELEMENT ON BOTTOM 490 PSIA FLOWING LBS.
ELEMENT SET AT 4810 FEET.
TEMPERATURE 4810 FT. 111 °F.
957 PSIA DEAD WEIGHT AT THE END OF 72 HOURS 58 MINUTES.

DATE	HOUR	TIME	DEFLECTION in/inches	CALCULATED PRESSURE psig	CORRECTION P ± PC psig	CORRECTED PRESSURE psia	PRESSURE AT MID-POINT OF PERFORATIONS psia
1-12-82	0	1331		543	13.2		556
	1/4	1346		713	13.2		726
	1/2	1401		784	13.2		797
	3/4	1416		838	13.2		851
	1	1431		888	13.2		901
	1-1/4	1446		922	13.2		935
	1-1/2	1501		953	13.2		966
	1-3/4	1516		978	13.2		991
	2	1531		992	13.2		1005
	2-1/2	1601		1010	13.2		1023
	3	1631		1025	13.2		1038
	3-1/2	1701		1032	13.2		1045
	4	1731		1039	13.2		1052
	4-1/2	1801		1044	13.2		1057
	5	1831		1050	13.2		1063
	6	1931		1055	13.2		1068
	7	2031		1058	13.2		1071
	8	2131		1061	13.2		1074
	9	2231		1064	13.2		1077
	10	2331		1066	13.2		1079
1-13-82	12	0131		1070	13.2		1083
	14	0331		1074	13.2		1087
	16	0531		1076	13.2		1089
	18	0731		1077	13.2		1090
	20	0931		1077	13.2		1090
	25	1431		1082	13.2		1095
	30	1931		1083	13.2		1096
	35	2431		1084	13.2		1097
1-14-82	40	0531		1085	13.2		1098
	50	1531		1087	13.2		1100
1-15-82	60	0131		1087	13.2		1100
	70	1131		1087	13.2		1100

TEST DATE: 1-12-82
TEST DEPTH: 4,810 FEET

ELEMENT NO.: RPG3 #7201B
RANGE: 3,200 LBS.

CLOCKS: 17245

RANGE: 72 HOURS

OPERATOR: STEVE HARWELL

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

JOE KELLY

ELK OIL COMPANY

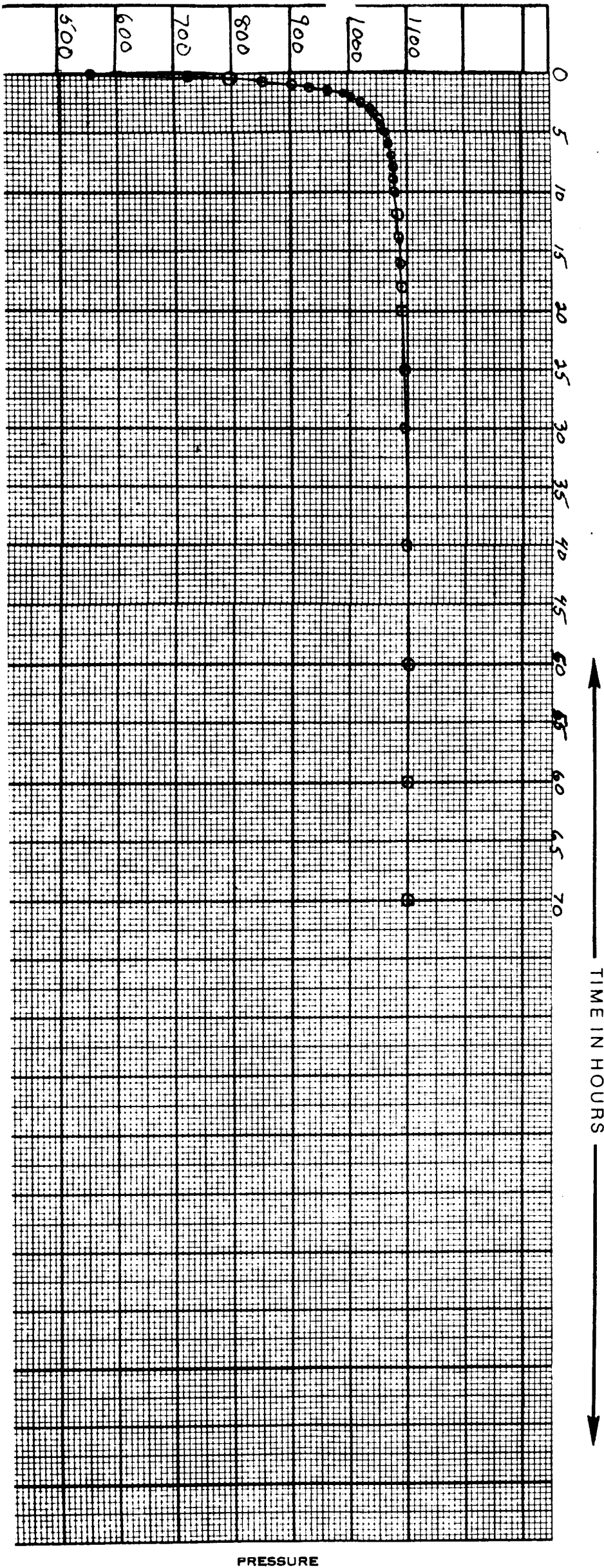
RUNYAN STATE WELL NO. 1

BENNETT-CATHEY WIRE LINE SERVICE
Box 787
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505/746-3281

Drawn By

Scale: As Shown

BENNETT-
CATHEY
WELL SERVICES





BE INETT-CATHEY WIRE L. E SERVICE



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

BOTTOM HOLE PRESSURE SURVEY REPORT

OPERATOR ELK OIL COMPANY
LEASE RUNYAN STATE
WELL NO. 1
POOL FORMATION ABO
DATE 1-15-82 TIME 1429 HOURS
STATUS SHUT IN TEST DEPTH 4,811 FEET
TIME S.I. 1331 HRS LAST TEST DATE 1ST TEST
CAS. PRES. 1-12-82 BHP LAST TEST
TUB. PRES. 957 BHP CHANGE
ELE. FLUID TOP
DATUM PLANE WATER TOP
DATUM PSIA 1100 RUN BY STEVE HARWELL
TEMP 111° PRESSURE RANGE 3,200
CLOCK NO.
ELEMENT NO. RPG3 #7201B

DEPTH	PRESSURE	GRADIENT
0	957	
1,000	992	3.5
2,000	1015	3.5
3,000	1047	3.2
4,661	1095	2.9
4,811	1100	3.3

TIME B.H.P. MEASURED: 1429 HOURS

LENGTH OF TIME WELL SHUT IN: 72 HOURS
58 MIN

