OIL CONSERVATION DIVISIO
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-122
Revised 10-1-78

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

RECEIVED BY
APR 30 1986
O. C. D.
ARTESIA, OFFICE

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test: ☒ Initial ☐ Annual ☐ Special		Test Date: 9/4/85	
Company: Read & Stevns, Inc.	Connection: To Air		
Pool: Wildcat - Morrow	Formation: Morrow	Unit: -	
Completion Date: 8/24/85	Total Depth: ~~8768'~~ 8810	Plug Back TD: 8768'	Elevation: 3555'
Farm or Lease Name: Langley Federal			
Csg. Size: 4.5" / Wt.: 11.6# / d: / Set At: ~~8768'~~ 8810	Perforations: From 8522' To 8570'	Well No.: 3	
Tbg. Size: 2.375" / Wt.: 4.7# / d: / Set At: 8440'	Perforations: From To	Unit: O / Sec.: 14 / Twp.: 15S / Rge.: 27E	
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single	Packer Set At: 8440'	County: Chaves	
Producing Thru: Tubing	Reservoir Temp. °F: 140 @ 8546'	Mean Annual Temp. °F: 60	Baro. Press. – P_a: 13.2 psia
State: New Mexico			

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
8546	8546	0.649	0.08	0.19	0	0	4.0	Flange

	FLOW DATA						TUBING DATA		CASING DATA		
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	Duration of Flow
SI									2958	140	284
1.	4.03	x	1.75	415	7.5	84	0	0	2830	140	1
2.	4.03	x	1.75	420	18.0	90	0	0	2721	140	1
3.	4.03	x	1.75	420	46.0	100	0	0	2557	140	1
4.	4.03	x	1.75	440	83.5	80	0	0	2297	140	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, Fpv	Rate of Flow Q, Mcfd
1	14.93	56.67	428.2	0.9777	1.2413	1.0381	1066
2.	14.93	88.30	433.2	0.9723	1.2413	1.0368	1649
3.	14.93	141.16	433.2	0.9636	1.2413	1.0340	2606
4.	14.93	194.53	453.2	0.9813	1.2413	1.0413	3683
5.							

NO.	P_t	Temp. °R	T_r	Z
1	0.64	544	1.46	0.928
2.	0.65	550	1.47	0.930
3.	0.65	560	1.50	0.935
4.	0.68	540	1.45	0.922
5				

Gas Liquid Hydrocarbon Ratio 157.138 Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons 57.7 Deg.
Specific Gravity Separator Gas 0.649 XXXXXXXXX
Specific Gravity Flowing Fluid XXXXX 0.666
Critical Pressure 670 P.S.I.A. 669 P.S.I.A.
Critical Temperature 373 R 379 R

NO	P_c / P_c^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		2208	4874	460
2		2122	4502	832
3		1995	1978	1356
4		1796	3224	2110
5				

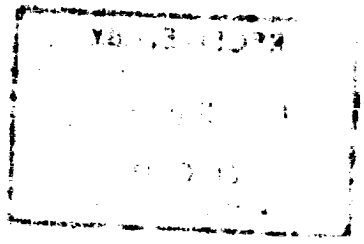
(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.5280$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 2.1255$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 7828$

Absolute Open Flow 7827 Mcfd @ 15.025 Angle of Slope θ 50.9 Slope, n 0.813

Remarks:

Approved By Division	Conducted By:	Calculated By:	Checked By:
	Bennett & Cathey	Bennett & Cathey	



RECEIVED BY
APR 30 1986
ARTESIA, OFFICE

2987

BENNETT & CATHEY PRODUCTION TESTING

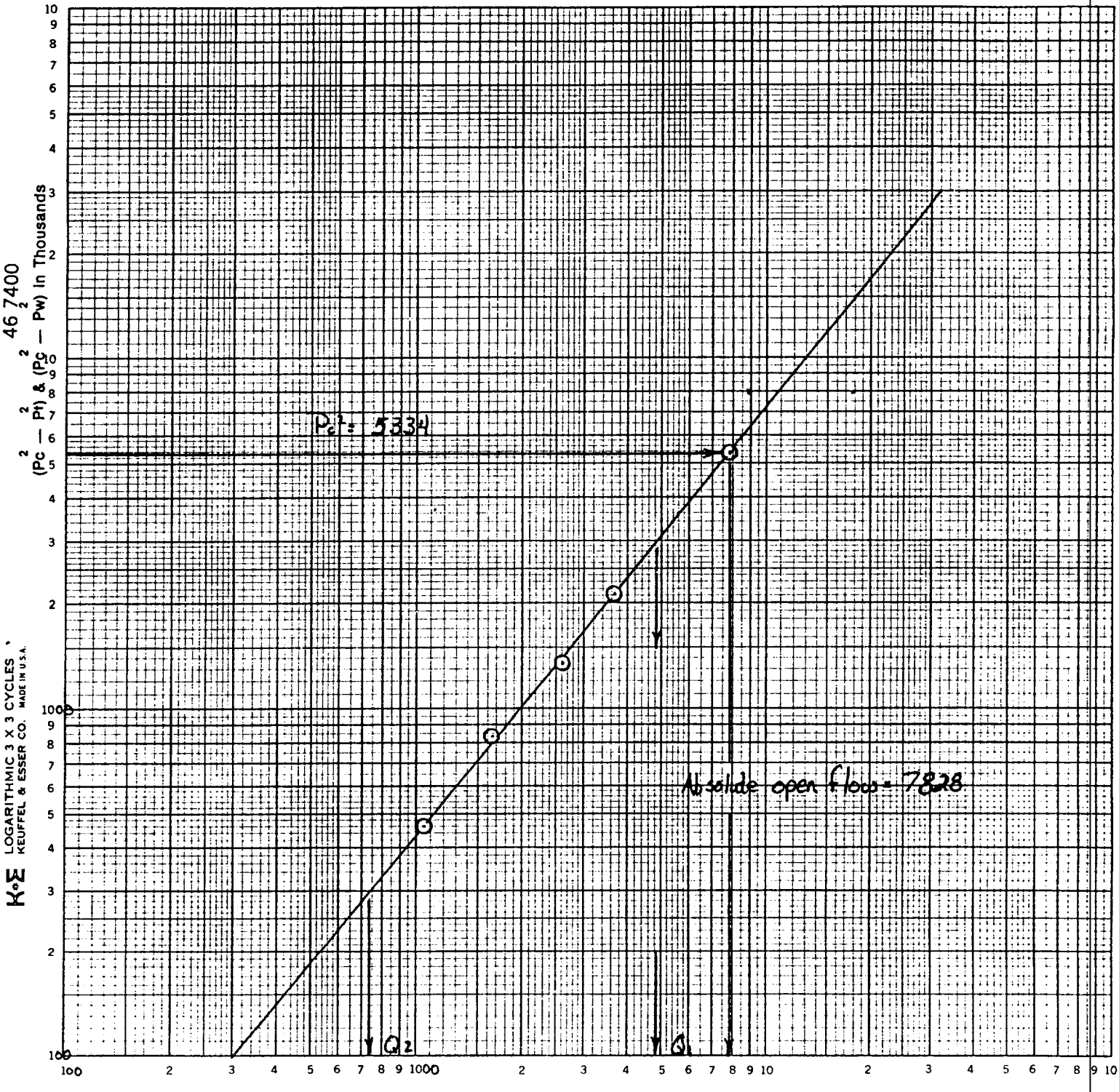
BACK PRESSURE CURVE

Operator Read & Stevens Lease Langley Fed Com Well No. 3 C. D.

County Chaves Field W/c Morrow Location 1190/S [illegible] 15 - 9 7

Date of Test 9-4-85 Slope "n" 0.813 Angle of Slope 50.9

Calc. Abs. Potential 7828 MCF/D



$\overline{\Delta P_1^2}$ $Pc^2 - Pw^2 =$ 3000

$\overline{\Delta P_2^2}$ $Pc^2 - Pw^2 =$ 300

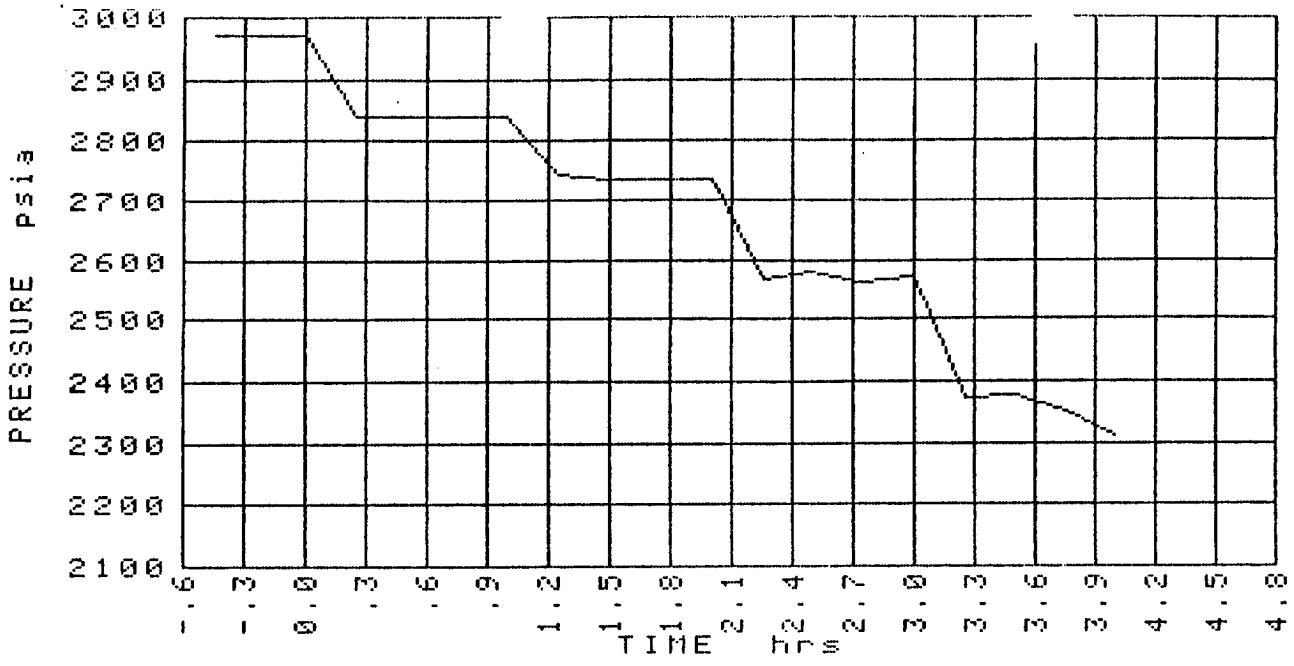
$Q_1 =$ 4811

$Q_2 =$ 740

LOG $Q_1 =$ 3.6822

LOG $Q_2 =$ 2.8692

$n =$ 0.813



COMPANY: READ & STEVENS
LEASE: LANGLEY FEDERAL COM
FIELD:
COUNTY: CHAVES
STATUS: FOUR POINT BACK PRESSURE TEST
PERFORATIONS FROM: 8522 ft
DEPTH: 5450 ft

CONTACT: DARELL LOUDER
WELL: #3
ZONE:
STATE: NEW MEXICO
OPERATOR: RICHARD TOWNLEY
TO: 8570 ft
TEMPERATURE: 140'F

ELEMENT# RPG3#27626
CLOCK# 32160
ELEMENT# RPG3#23972
CLOCK# 32463

ELEMENT RANGE: 6175 psig
CLOCK RANGE: 24 hrs
ELEMENT RANGE: 6950 psig
CLOCK RANGE: 24 hrs

START CLOCK	09/04/85	09:42:00	2284 psig
SET ELEMENT	09/04/85	11:20:00	2284 psig
WELL SHUT IN	08/24/85	16:00:00	0 psig
TEST ENDED	09/04/85	16:00:00	1626 psig

GAIN= 1
FILE: RS-2:D701

BIAS= 248 psi
BAROMETRIC PRESSURE= 13.2 psia

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

PRESSURE TRANSIENT TEST DATA

COMPANY: READ & STEVENS
LEASE: LANGLEY FEDERAL COM
FIELD:
COUNTY: CHAVES
STATUS: FOUR POINT BACK PRESSURE TEST

CONTACT: DARELL LOUDER
WELL: #3
ZONE:
STATE: NEW MEXICO
OPERATOR: RICHARD TOWNLEY

PERFORATIONS FROM: 8,522.0'
TO: 8,570.0'
DEPTH: 5,450.0'
TEMPERATURE: 140.0'F

ELEMENT: RPG3#27626
RANGE: 6175 psig
CLOCK: 32160
RANGE: 24 hrs
ELEMENT: RPG3#23972
RANGE: 6950 psig
CLOCK: 32463
RANGE: 24 hrs

SURFACE PRESSURE MEASUREMENTS

EVENT	DATE	TIME	DEAD WEIGHT PRESSURE
START CLOCK	09/04/85	09:42:00	2,284.0 psig
SET ELEMENT	09/04/85	11:20:00	2,284.0 psig
WELL SHUT IN	08/24/85	16:00:00	0.0 psig
TEST ENDED	09/04/85	16:00:00	1,626.0 psig

SUBSURFACE PRESSURE MEASUREMENTS

DATE	TIME	t hrs	GAUGE PRESSURE psig	ABSOLUTE PRESSURE psia	RESERVOIR PRESSURE psia
09/04/85	11:33:54	-.435	2,709.4	2,722.6	2,970.6
09/04/85	12:00:00	0.000	2,709.4	2,722.6	2,970.6
09/04/85	12:15:00	.250	2,580.2	2,593.4	2,841.4
09/04/85	12:30:01	.500	2,582.0	2,595.2	2,843.2
09/04/85	12:45:01	.750	2,581.6	2,594.8	2,842.8
09/04/85	12:59:59	1.000	2,581.6	2,594.8	2,842.8
09/04/85	13:15:00	1.250	2,485.0	2,498.2	2,746.2
09/04/85	13:30:00	1.500	2,472.1	2,485.3	2,733.3
09/04/85	13:45:00	1.750	2,473.5	2,486.7	2,734.7
09/04/85	14:00:01	2.000	2,472.8	2,486.0	2,734.0
09/04/85	14:15:01	2.250	2,305.8	2,319.0	2,567.0
09/04/85	14:29:59	2.500	2,319.5	2,332.7	2,580.7
09/04/85	14:45:00	2.750	2,303.0	2,316.2	2,564.2
09/04/85	15:00:00	3.000	2,309.0	2,322.2	2,570.2
09/04/85	15:15:00	3.250	2,114.0	2,127.2	2,375.2
09/04/85	15:30:01	3.500	2,117.5	2,130.7	2,378.7
09/04/85	15:45:01	3.750	2,088.1	2,101.3	2,349.3
09/04/85	15:59:59	4.000	2,048.9	2,062.1	2,310.1

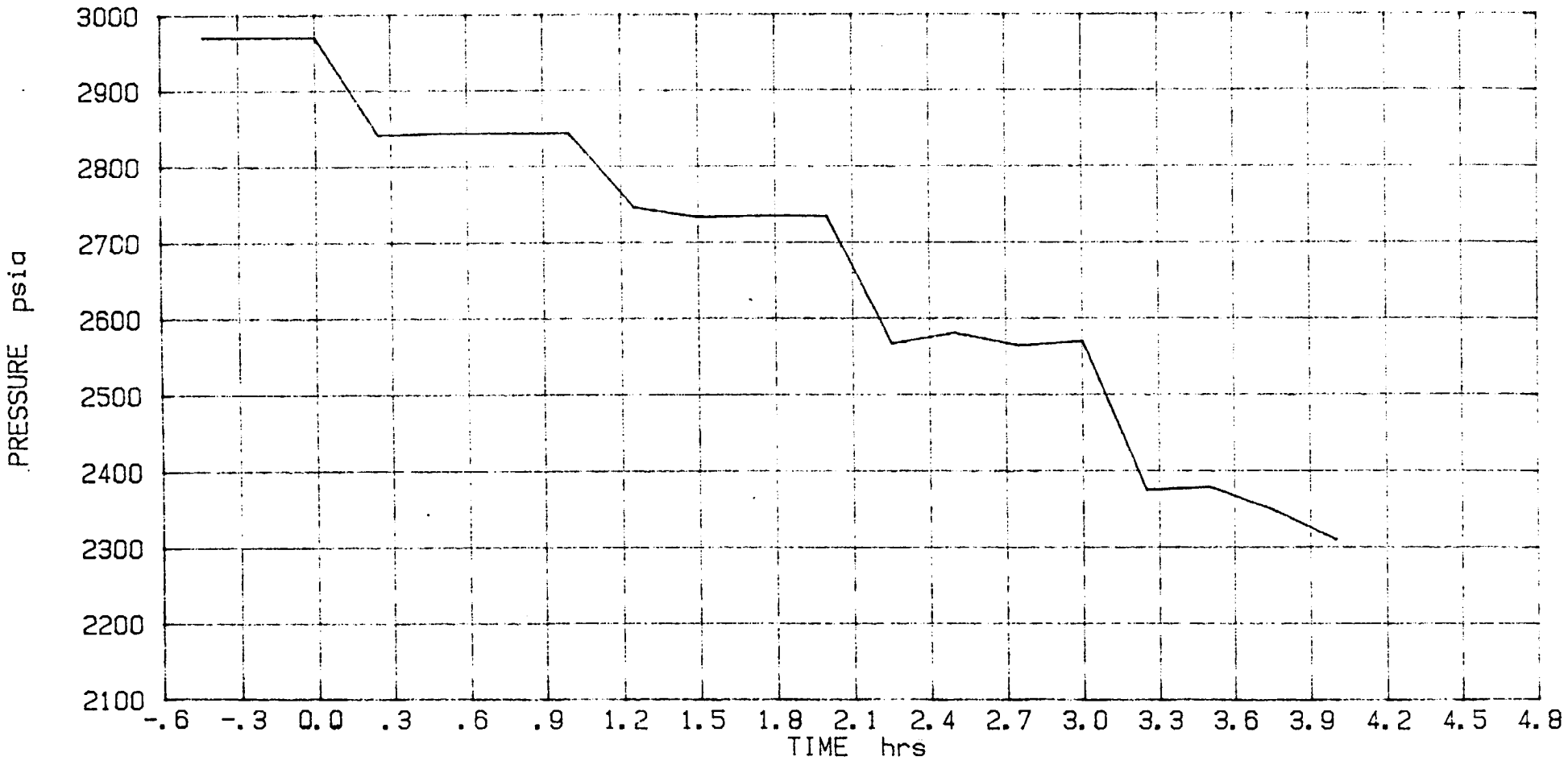
TEST DATE: 09/04/85 TO 09/04/85
TEST DEPTH: 5450 ft
ELEMENT NO: RPG3#23972
RANGE: 6950 psig
CLOCK: 32463
RANGE: 24 hrs
OPERATOR: RICHARD TOWNLEY

DARELL LOUDER

READ & STEVENS

LANGLEY FEDERAL COM #3

BENNETT-CATHEY WIRE LINE SERVICE
Box 787 Artesia, N. M. 88210 (505) 748-3354



UNIT :
LEASE : LANGLEY FED COM
WELL : 3
S/T/R :
COUNTY: CHAVES
STATE : NEW MEXICO

TYPE TEST: 4 POINT
: INITIAL
TEST DATE: 9/ 4/85

NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT ANNUAL POINT BACK PRESSURE TEST FOR GAS WELLS

COMPANY: READ AND STEVENS
FIELD: POOL:
COMPLETED 8 24 85 TD = 8768.
CSG SIZE = 4.5000 WT = 11.60
TBG SIZE = 2.3750 WT = 4.70
TYPE COMPLETION: SINGLE
PRODUCING THROUGH: TUBING
RESERVOIR TEMP., F =140. @ 8546. FT.

CONNECTION: TO AIR
RESERVOIR:
PBD = 8768. ELEV = 3555.
SET AT 8768. PERF: 8522.- 8570.
SET AT 8440. PERF: 0.- 0.
PACKER SET AT: 8440.
BARO.PRESS = 13.20 PSIA
MEAN GROUND TEMP., F = 60.

L	H	G	% CO2	% N2	% H2S	PROVER	M-RUN	TAPS
8546.	8546.	0.649	0.08	0.19	0.	0.	4.0	FLANGE

NO.	LINE SIZE	ORI. SIZE	FLOW PSIG	HW IN.	FLOW TEMP	TBG. PSIG	TBG. TEMP	BHP PSIG	BH TEMP	FLOW HRS.
SI								2958.	140.	284.0
1	4.03 X	1.750	415.	7.5	84.	0.	0.	2830.	140.	1.0
2	4.03 X	1.750	420.	18.0	90.	0.	0.	2721.	140.	1.0
3	4.03 X	1.750	420.	46.0	100.	0.	0.	2557.	140.	1.0
4	4.03 X	1.750	440.	83.5	80.	0.	0.	2297.	140.	1.0

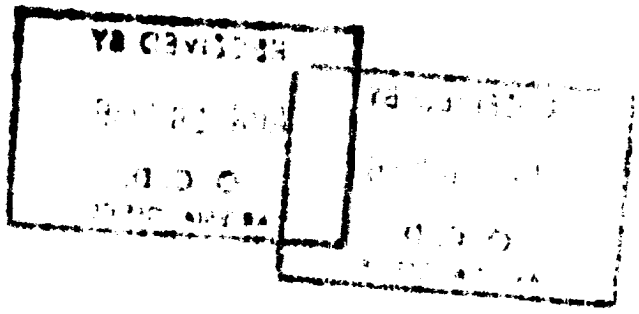
NO.	COEFFICIENT (24 - HOUR)	SQRT. (HWPM)	PRESS. PM	T-FACTR F(T)	G-FACTR F(G)	SC-FACTR F(PV)	FLOW MCFD
1	14.93	56.67	428.2	0.9777	1.2413	1.0381	1066.
2	14.93	88.30	433.2	0.9723	1.2413	1.0368	1649.
3	14.93	141.16	433.2	0.9636	1.2413	1.0340	2606.
4	14.93	194.53	453.2	0.9813	1.2413	1.0413	3683.

NO.	P(R)	TEMP. R	T(R)	Z
1	0.64	544.	1.46	0.928
2	0.65	550.	1.47	0.930
3	0.65	560.	1.50	0.935
4	0.68	540.	1.45	0.922

GAS LIQ RATIO, MCF/BBL		157.138
API G OF HYDROCARBONS		57.7
SP G SEPARATOR GAS	0.649	XXXXX
SP G FLOWING FLUID	XXXXX	0.666
CRITICAL PRES., PSIA	670.	669.
CRITICAL TEMP., R	373.	379.

NO.	PW	PW*PW	PC*PC-PW*PW
1	2208.	4874.	460.
2	2122.	4502.	832.
3	1995.	3978.	1356.
4	1796.	3224.	2110.

PC =	2309.5
PC*PC =	5334.
PC*PC/(PC*PC-PW*PW)=	2.5280
(PC*PC/(PC*PC-PW*PW))**N =	2.1255
AOF (MCF/DAY)=	7828.



UNIT :
LEASE : LANGLEY FED COM
WELL : 3
S/T/R :
COUNTY: CHAVES
STATE : NEW MEXICO

TYPE TEST: 4 POINT : INITIAL
TEST DATE: 9/ 4/85

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

CALC WH OPEN FLOW= 7828. MCFD @ 15.025, SLOPE ANGLE= 50.9, N= 0.813

APPROVED BY COMMISSION:	CONDUCTED BY:	CALCULATED BY:	CHECKED BY:

I, _____, BEING FIRST DULY SWORN ON OATH, STATE THAT

I AM FAMILIAR WITH FACTS AND FIGURES SET FORTH IN THIS REPORT,

AND THAT THE REPORT IS TRUE AND CORRECT.

_____
SIGNATURE AND TITLE OF AFFIANT

_____
COMPANY

SUBSCRIBED AND SWORN TO BEFORE ME THIS ____ DAY OF _____, 19____

MY COMMISSION EXPIRES

_____
NOTARY PUBLIC