

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

Form C-122
 Revised 9-1-65

Type Test ☒ Initial ☐ Annual ☐ Special					Test Date 12-14-84	
Company JOHN GOODRICH				Connection AIR NEW WELL		
Pool SOUTHEAST QUEEN				Formation QUEEN		Unit 100 F
Completion Date 6-2-84		Total Depth 2655		Plug Back To 2620		Elevation 4086
Form or Lease Name LOIS FEDERAL						Well No. #1
Casing Size 4.500	Wt. 9.5	d 4.090	Set At 2655.	Perforations: From 2583. To 2596.		Unit Sec. Twp. Hqs. 4 13S 31E
Tub. Size 2.375	Wt. 4.7	d 1.995	Set At 2650.	Perforations: From 0. To 0.		County CHAVES
Type Well - Single - Wardenhead - G.O. or G.O. Multiple SINGLE					State NEW MEXICO	
Producing thru TUBING		Reservoir Temp. °F 102. 2589.		Mean Annual Temp. °F 60.0		Baro. Press. - P _a 13.2
L 2589.	H 2589.	Gg 0.920	% CO ₂ 0.05	% N ₂ 66.68	% H ₂ S 0.	Prover 2.0
				Motor Run 0.	Tap FLANGE	

FLOW DATA						TUBING DATA		B.H.P. 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.		CHOKE
51							410.	60.			72.0
1.	2.00 X 0.063			380.	0.	22.	400.	60.	0.	7/64	1.0
2.	2.00 X 0.093			360.	0.	22.	385.	60.	0.	7/64	1.0
3.	2.00 X 0.125			365.	0.	22.	370.	60.	0.	16/64	1.0
4.	2.00 X 0.187			320.	0.	22.	334.	60.	0.	16/64	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 Compress. Factor, F _{sp}	Rate of Flow Q, Mscf
1	0.06	0.	393.2	1.0387	1.0426	1.0207	28.
2	0.14	0.	373.2	1.0387	1.0426	1.0197	57.
3	0.26	0.	378.2	1.0387	1.0426	1.0200	110.
4	0.60	0.	333.2	1.0387	1.0426	1.0177	222.

NO	P _h	Temp. °R	T _g	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
1	0.73	482.	1.74	0.960	A.P.I. Gravity of Liquid Hydrocarbon _____ Deg.
2	0.69	482.	1.74	0.962	Specific Gravity Separator Gas _____ 0.920
3	0.70	482.	1.74	0.961	Specific Gravity Flowing Fluid _____ 0.920
4	0.62	482.	1.74	0.965	Critical Pressure _____ 541. P.C.I.A. 541. P.S.I.A.
5					Critical Temperature _____ 277. °R 277. °R

P _e 423.2 P _w 179.	(1) $\frac{P_e^2}{P_e^2 - P_w^2} = 3.0953$	(2) $\left[\frac{P_e^2}{P_e^2 - P_w^2} \right]^n = 3.0953$
NO P _e P _w P _e ² P _e ² - P _w ²		
1 171. 413. 171. 8.		
2 159. 398. 159. 20.		
3 147. 383. 147. 32.		
4 121. 348. 121. 58.		
5		

Absolute Open Flow _____ 687.	Mod # 15.025	Angle of Slope ° _____ 45.0	Slope, n _____ 1.000
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Approved By Commission:	Conducted By: RICK HATCHETT	Calculated By: BENNETT & CATHEY INC.	Checked By:
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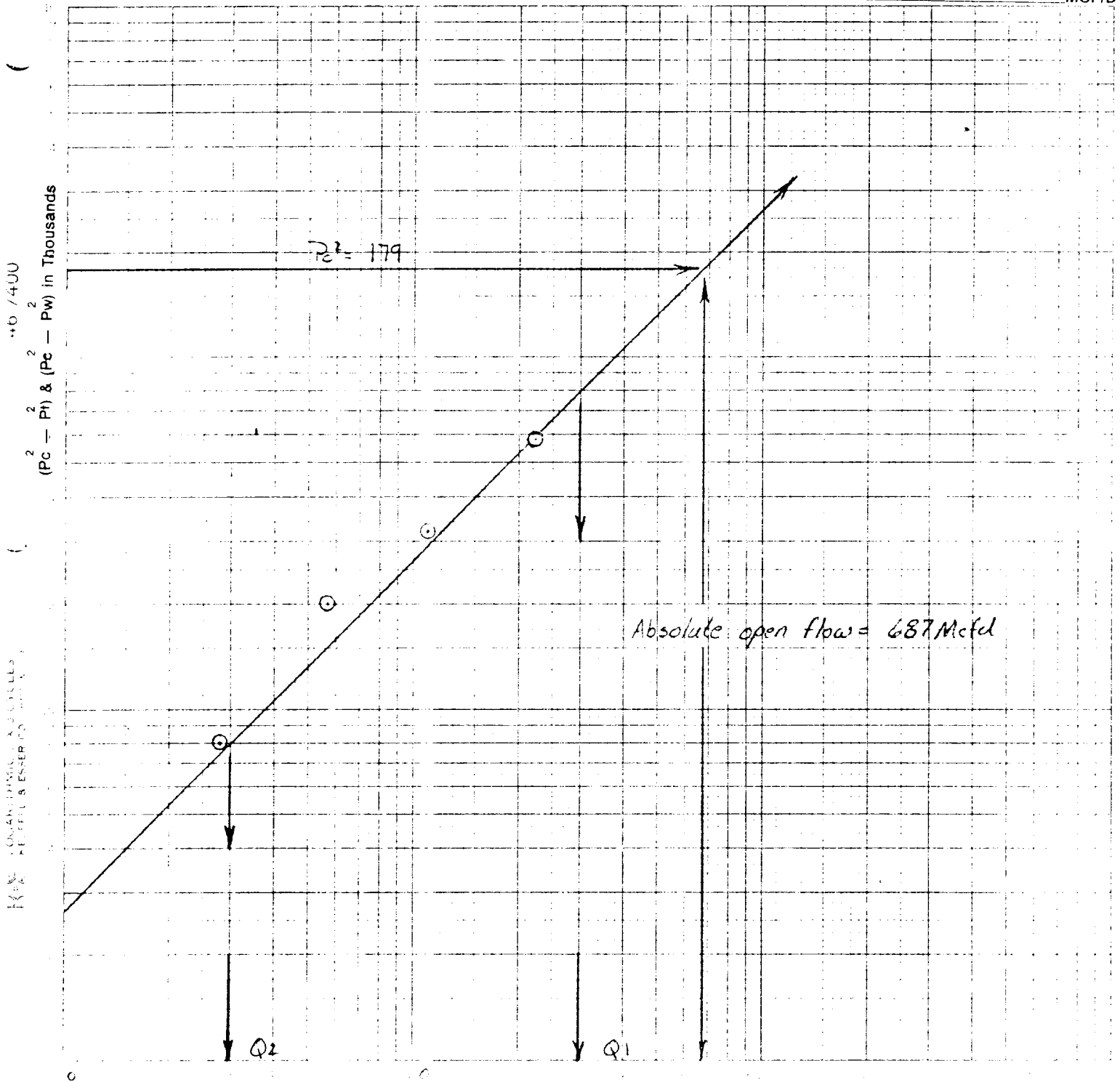
MAR 26 1985

U.S. DEPT. OF JUSTICE
FEDERAL BUREAU OF INVESTIGATION

BENNETT & CATHEY PRODUCTION TESTING BACK PRESSURE CURVE

Operator John Goodrich Lease Lois Federal Well No. 1
 County Chaves Field Southwest Queen Location 4-13S-31E
 Date of Test 12-14-84 Slope "n" 1.000 Angle of Slope 45°

Calc. Abs. Potential 687 MCF/D



$$\frac{\Delta P_1^2}{\Delta P_2^2} \frac{P_c^2 - P_w^2}{P_c^2 - P_w^2} = \frac{80}{8}$$

$$Q_1 = \underline{300}$$

$$Q_2 = \underline{30}$$

Q in MCF/Day

$$\text{LOG } Q_1 = \underline{2.4771}$$

$$\text{LOG } Q_2 = \underline{1.4771}$$

$$n = \underline{1.000}$$

NEW-TEX LAB

PHONE 505/393-3561

P. O. BOX 1161

611 W. SNYDER

HOBBS, NEW MEXICO 88240

ANALYSIS CERTIFICATE

CLIENT: BENNETT & CATHEY INC
ADDRESS: BOX 787
CITY, STATE: ARTESIA NM 88210

ANALYSIS NUMBER: 5282
DATE OF RUN: 12 15 84
DATE SECURED: 12 14 84

SAMPLE IDENT: JOHN GOODRICH/LOIS FEDERAL #1
SAMPLING PRESS: 410 PSIG SAMPLING TEMP: 22 DEG F

REMARKS: S E QUEEN AREA
REMARKS: CHAVES COUNTY NM

***** GAS ANALYSIS *****

	MOLE PERCENT	GAL/ MCF
NITROGEN	66.676	
CARBON DIOXIDE	0.047	
METHANE	21.142	
ETHANE	6.990	1.864
PROPANE	3.485	0.957
ISO-BUTANE	0.400	0.131
NORMAL BUTANE	0.829	0.261
ISO-PENTANE	0.168	0.062
NORMAL PENTANE	0.134	0.048
HEXANES	0.129	0.053
TOTAL	100.000	3.376

PROPANE GPM:	0.96	BUTANES GPM:	0.39
ETHANE GPM:	1.86	PENTANES PLUS GPM:	0.16

SPECIFIC GRAV (CALC): 0.9244
MOLE WEIGHT: 26.78

HHV-BTU/CU FT	PRESSURE (PSIA)	WET	DRY
14.696		475	483
14.650		473	482
14.730		476	484
14.735		476	485

Local Impure