

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 1/17/89		JAN 26 '89	
Company BHP PETROLEUM COMPANY INC				Connection AIR		O. C. D. ARTESIA OFFICE	
Pool WILDCAT ELLENBURGER				Formation MONTOTA ELLENBURGER		Unit L	
Completion Date 1/12/89		Total Depth 6630		Plug Back TD 6630		Elevation 0	
Form or Lease Name YATES 36 STATE							
Coq. Size 5.500	Wi. 15.5	d 4.950	Set At 6630	Perforations: From 6142 To 6176		Well No. 1	
Thq. Size 2.875	Wi. 6.5	d 2.441	Set At 5906	Perforations: From 0 To 0		Unit Sec. Twp. Rge. L 36 10S 26E	
Type Well - Single - Drdhead - G.G. or G.O. Multiple SINGLE-GAS				Packer Set At 0		County CHAVES	
Producing Thru TUBING		Reservoir Temp. °F 101 P 6159		Mean Annual Temp. °F 60.0		Baro. Press. - P _a 13.2	
State N M							
L 6159	H 6159	Co .672	% CO ₂ 4.01	% N ₂ 3.41	% H ₂ S .00	Prover .0	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. hw	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.		Temp. °F
SI									2472.	101	72.0
1.	4.03 X	1.625		275.	4.0	65.	0.	0.	2451.	101	1.0
2.	4.03 X	1.625		280.	13.0	72.	0.	0.	2439.	101	1.0
3.	4.03 X	1.625		290.	16.0	72.	0.	0.	2428.	101	1.0
4.	4.03 X	1.625		290.	84.0	60.	0.	0.	2384.	101	1.0
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, Mcd
1	12.79	33.95	288.2	.9952	1.2199	1.0257	541.
2	12.79	61.74	293.2	.9887	1.2199	1.0249	976.
3	12.79	69.65	303.2	.9887	1.2199	1.0258	1102.
4	12.79	159.59	303.2	1.0000	1.2199	1.0280	2560.
5							

NO.	P _t	Temp. °R	T _t	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1	.42	525.	1.44	.951	69.2	
2	.43	532.	1.46	.952	60.2	
3	.45	532.	1.46	.950	.672	
4	.45	520.	1.42	.946		
5						

$P_c = 2,017.3 P_c^2 = 4069$				
NO.	P _t ²	P _w	P _w ²	P _c ² - P _w ²
1	6073.	2001.	4003.	66.
2	6014.	1991.	3964.	105.
3	5960.	1982.	3929.	140
4	5748.	1947.	3790.	279.
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 14.5842$

(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 14.5842$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 37335.$

JAN 24 1989

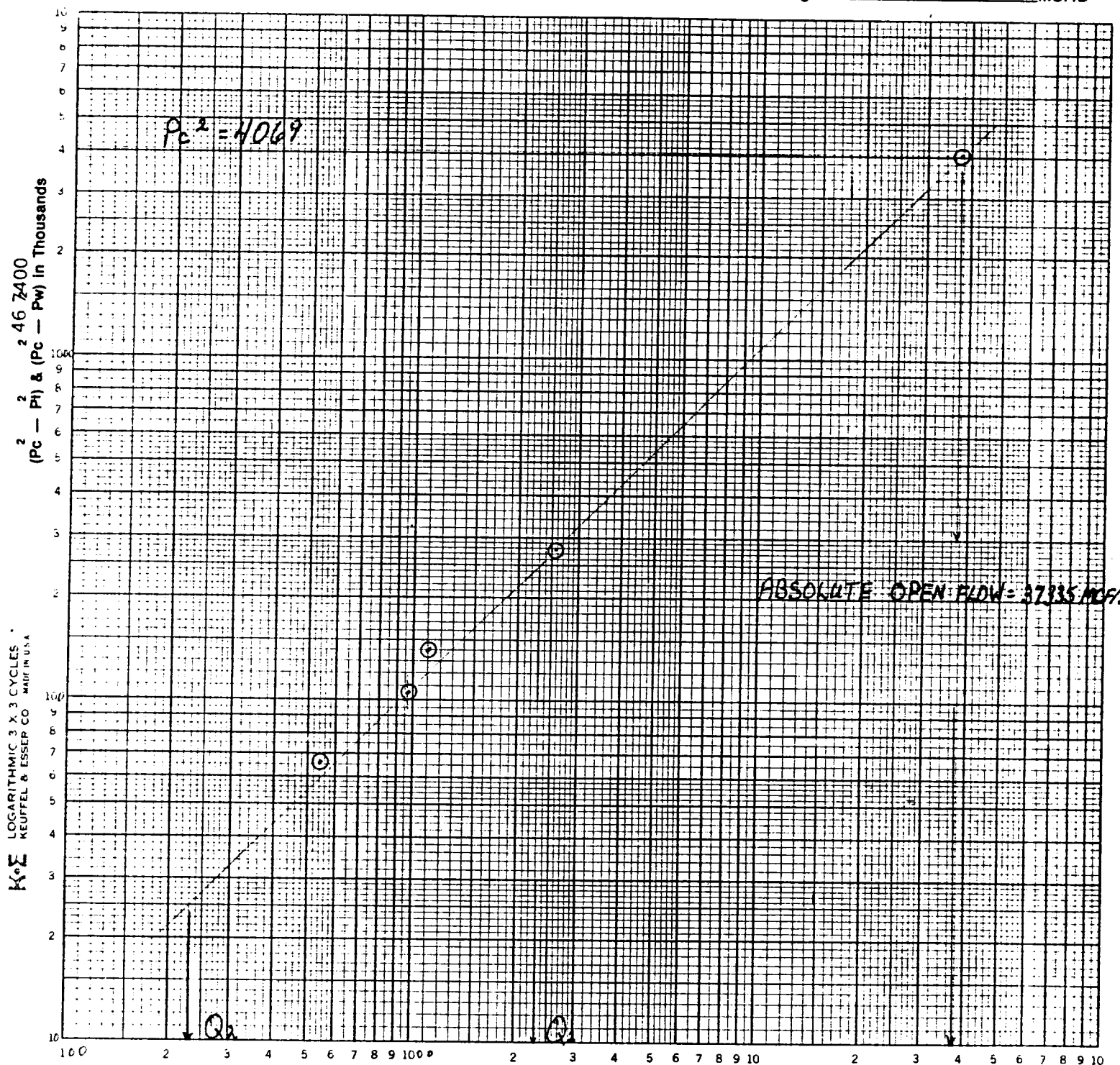
Absolute Open Flow	37335.	Mcd @ 15.025	Angle of Slope @	45.0	Slope, n	1.000
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Remarks: B.H.P. MEASURED WITH ELECTRONIC GAUGES -

Approved By Division	Conducted By: BENNETT-CATHEY	Calculated By: MATT LEE	Checked By:
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BENNETT & CATHEY PRODUCTION TESTING BACK PRESSURE CURVE

Operator BHP PETROLEUM COMPANY Lease Yates State 36 Well No. 1
 County CHAVES Field _____ Location _____
 Date of Test 1-17-89 Slope "n" 1.000 Angle of Slope 45.0
 Calc. Abs. Potential 37335 MCF/D



$$\Delta P_1^2 \quad P_c^2 - P_w^2 = 250$$

$$\Delta P_2^2 \quad P_c^2 - P_w^2 = 25$$

$$Q_1 = 2300$$

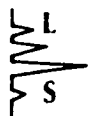
$$Q_2 = 230$$

Q, Mcfd

$$\text{LOG } Q_1 = 3.362$$

$$\text{LOG } Q_2 = 2.362$$

$$n = 1.000$$



LABORATORY SERVICES

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Artesia, New Mexico 88210

SAMPLE IDENTIFICATION: Yates 36 #1
COMPANY: B. H. P. PETROLEUM COMPANY INC
LEASE:
PLANT:

SAMPLE DATA: DATE SAMPLED: ----
ANALYSIS DATE: 1/17/89
PRESSURE — PSIG: 290
TEMPERATURE — °F:
GAS (xx) LIQUID ()
SAMPLED BY: Monty Randolph
ANALYSIS BY: Rolland Perry

REMARKS: H₂S ran at lab.

COMPONENT ANALYSIS

COMPONENT		MOL PERCENT	GPM	LIQ. VOL. PERCENT
Hydrogen Sulfide	(H ₂ S)	-0-		
Nitrogen	(N ₂)	3.41		
Carbon Dioxide	(CO ₂)	4.01		
Methane	(C ₁)	85.50		
Ethane	(C ₂)	4.27	1.089	
Propane	(C ₃)	1.36	0.375	
I-Butane	(C ₄)	0.23	0.075	
N-Butane	(NC ₄)	0.41	0.129	
I-Pentane	(C ₅)	0.17	0.062	
N-Pentane	(NC ₅)	0.16	0.058	
Hexane	(C ₆)	0.32	0.148	
Heptanes Plus	(C ₇ +)	0.16	0.090	
		100.00	2.026	

BTU/CU. FT. — DRY 1035
AT 14.650 WET 1017

SPECIFIC GRAVITY — CALCULATED 0.672
MEASURED

VAPOR PRESSURE (ABSOLUTE) — CALCULATED

26# GASOLINE — 0.403

CU. FT./GAL. —