

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

6-24-75
Form O-122
Revised 9-1-65

RECEIVED

APR 10 1975

**O. C. C.
ARTESIAN OFFICE**

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 4-1-75			
Company GREAT WESTERN DRILLING COMPANY				Connection TO AIR			
Pool WILDCAT				Formation STRAWN		Unit HAY HOLLOW UNIT	
Completion Date 4-1-75		Total Depth 12966'		Flag Bunk TD 11847'		Elevation 3214' GR.	
Csg. Size 5 1/2"	Wt. 17#	d 4.892	Set At 12678'	Perforations: From 11611' To 11642'		Well No. 1	
Tub. Size 2 3/8"	Wt. 4.6	d 1.995	Set At 11571'	Perforations: From OPEN To ENDED		Unit J	Sec. Twp. Rge. 11 26S 27E
Type Well - Single - Bradenhead - G.G. or G.O. Multiple SINGLE				Packer Set At 11556'		County EDDY	
Producing Thru TUBING		Reservoir Temp. °F 194° @ 11590'		Mean Annual Temp. °F 60		Baro. Press. - P _a 13.2	
State NEW MEXICO							
L 11571'	H 11571'	G _g 0.586	% CO ₂ 0.46	% N ₂ TRACE	% H ₂ S GR/100 0.008	Prover -	Meter Run 4"
						Taps FLANGE	

FLOW DATA						TUBING DATA		CASING 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							5232.0			CHOKE	96 HRS
1.	4"	x	2.00"	520.0	20.0	67	4768.0	65		10/64"	60 MIN
2.	4"	x	2.00"	525.0	37.0	57	4485.0	65		12/64"	60 MIN
3.	4"	x	2.00"	480.0	68.0	40	3906.0	69		14/64"	60 MIN
4.	4"	x	2.00"	720.0	72.0	48	3384.0	70		17/64"	90 MIN
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	19.81	103.27	533.2	.9933	1.306	1.041	2763
2	19.81	141.11	538.2	1.003	1.306	1.045	3827
3	19.81	183.13	493.2	1.020	1.306	1.046	5055
4	19.81	229.76	733.2	1.012	1.306	1.066	6413
5							

NO.	R	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio T.S.T.M. Mcf/bbl.	
1	0.79	527	1.51	.923	A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.	
2	0.80	517	1.48	.916	Specific Gravity Separator Gas 0.586 XXXXXXXXXX	
3	0.73	500	1.43	.914	Specific Gravity Flowing Fluid XXXXXX	
4	1.09	508	1.45	.880	Critical Pressure 672 P.S.I.A. P.S.I.A.	
5					Critical Temperature 350 R R	

$P_c = 6403.2$ $P_w^2 = 41001$					$(1) \frac{P_c^2}{P_c^2 - P_w^2} = 2.1544$		$(2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.6943$	
NO.	P _t ²	P _w	P _w ²	P _c ² - P _w ²				
1		5946.2	35357	5644				
2		5668.2	32128	8873				
3		5159.2	26617	14384				
4		4687.2	21970	19031				
5								

$ACF = 10,866$					$\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 10,866$	
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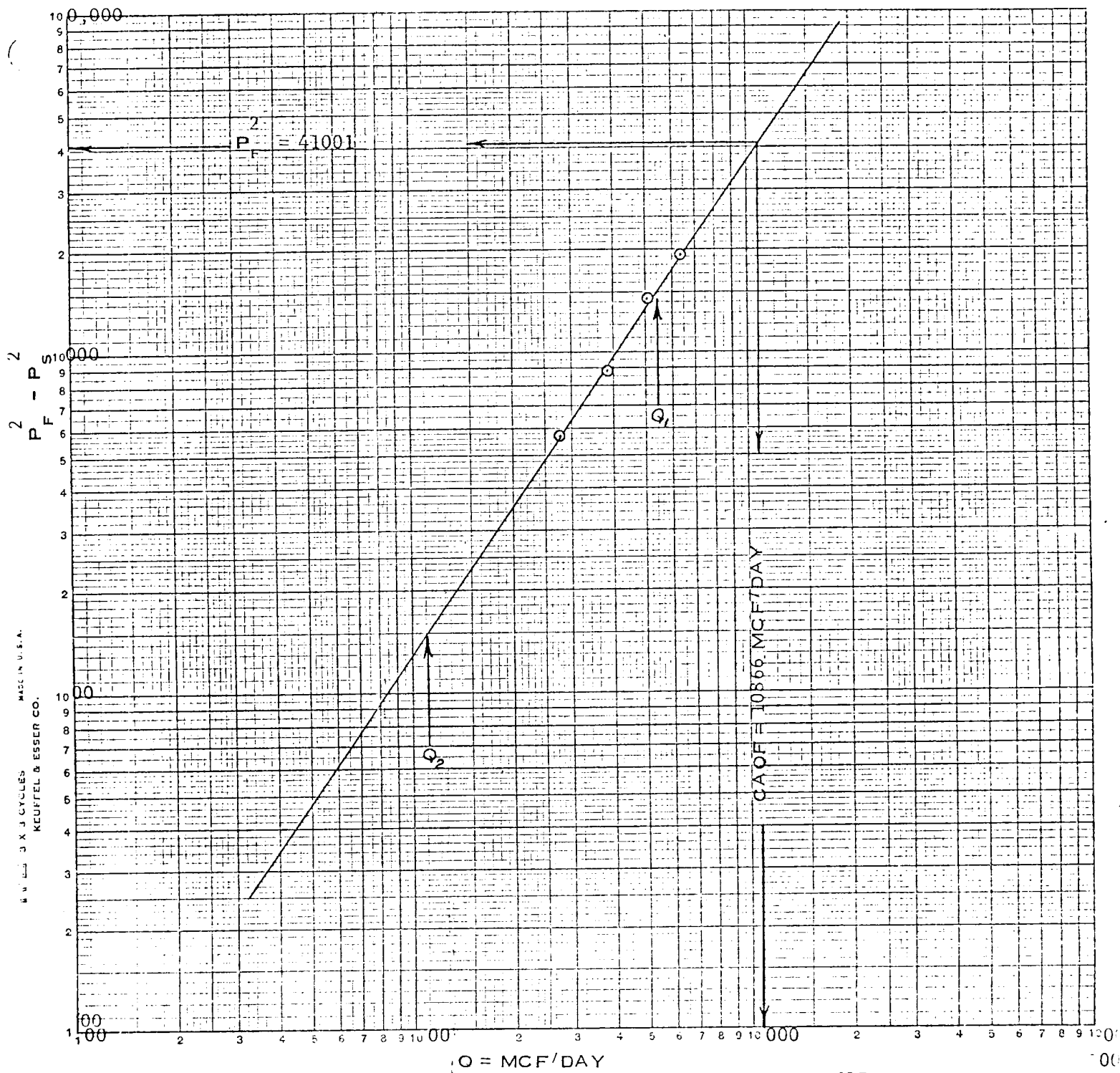
Absolute Open Flow 10,866 Mcfd @ 15.025		Angle of Slope 55.5°		Slope, n 0.687	
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Remarks: BOTTOM HOLE PRESSURE MEASURED WITH AMERADA GAUGE @ 11,590'					
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Approved By Commission:	Conducted By: MCT	Calculated By: R. WEST	Checked By: J.W.
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GREAT WESTERN DRILLING COMPANY
HAY HOLLOW UNIT, NO. 1

APRIL 1, 1975



ABS. SLOPE = (N) = $Q_1 = 5400 = 7.7323938$

$Q_2 = 1110 = 7.0453230$

(N) = 0.6870708

CAOF = $6413 (41001) = 10866 \text{ MCF/DAY}$
19031

GAS ANALYSIS - HAY HOLLOW NO. 1

<u>Composition</u>	<u>Mole%</u>
Nitrogen	.00
Carbon Dioxide	.46
Methane	95.04
Ethane	3.64
Propane	.56
I-Butane	.12
N-Butane	.11
I-Pentane	.04
N-Pentane	.02
Hexanes	.01
Heptanes	TR.

<u>Content</u>	<u>GPM</u>
Propane	.154
I-Butane	.039
N-Butane	.035
I-Pentane	.115
N-Pentane	.007
Hexane	<u>.004</u>
	.254

Hydrogen Sulfide - .08 grains/100 ft.³

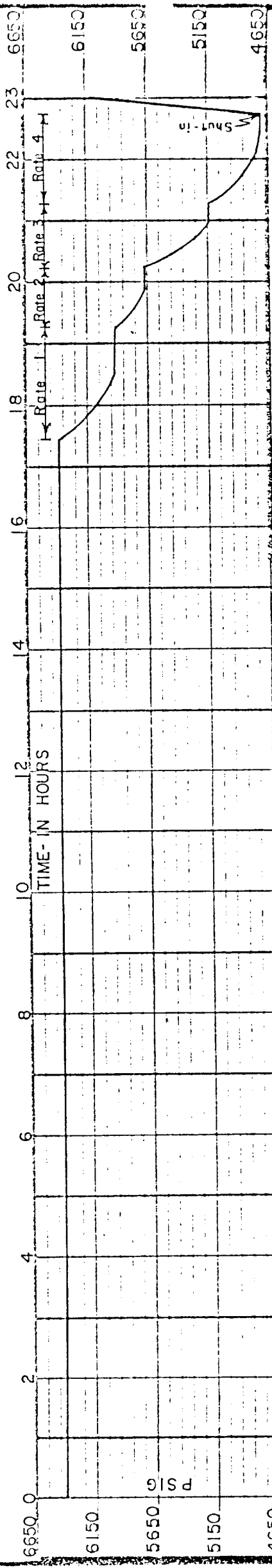
BTU Content - 1050.89

Specific Gravity - .586

DATE	TIME	CUM. HRS./MIN.	PSIG @ 11,590 FEET
3-31-75	5:00 pm	00 Hrs. 00 Min.	6390 Gauge reached 11,590 feet
4-01-75	10:25 am	17 25	6390 Open choke to light heater
4-01-75	12:15 pm	19 15	5933 End Rate 1, 10/64 choke
4-01-75	1:15 pm	20 15	5655 End Rate 2, 12/64 choke
4-01-75	2:15 pm	21 15	5146 End Rate 3, 14/64 choke
4-01-75	3:45 pm	22 45	4674 End rate 4, 17/64 choke Close choke
4-01-75	4:00 pm	23 Hrs. 00 Min.	6119 Gauge off bottom, end test

Test Date: 3-31-75 to 4-1-75
 Test Depth: 11,590 Feet
 Element No.: 34912
 Range: 0-8000 psi
 Clock No.: E-2145
 Range: 0-72 Hour

Note: The well had been shut-in approximately
 72 hours before test was started.



GREAT WESTERN DRILLING CO.

Hay Hollow Unit Well No. 1
 Bottom Hole Pressure Build-up and pressures to use in
 calculating Multi-point back pressure test

JOHN W. WEST ENGINEERING CO. HOUSTON, TEXAS
 Date: 4-4-75 Drawn by: mcf Scale: as shown