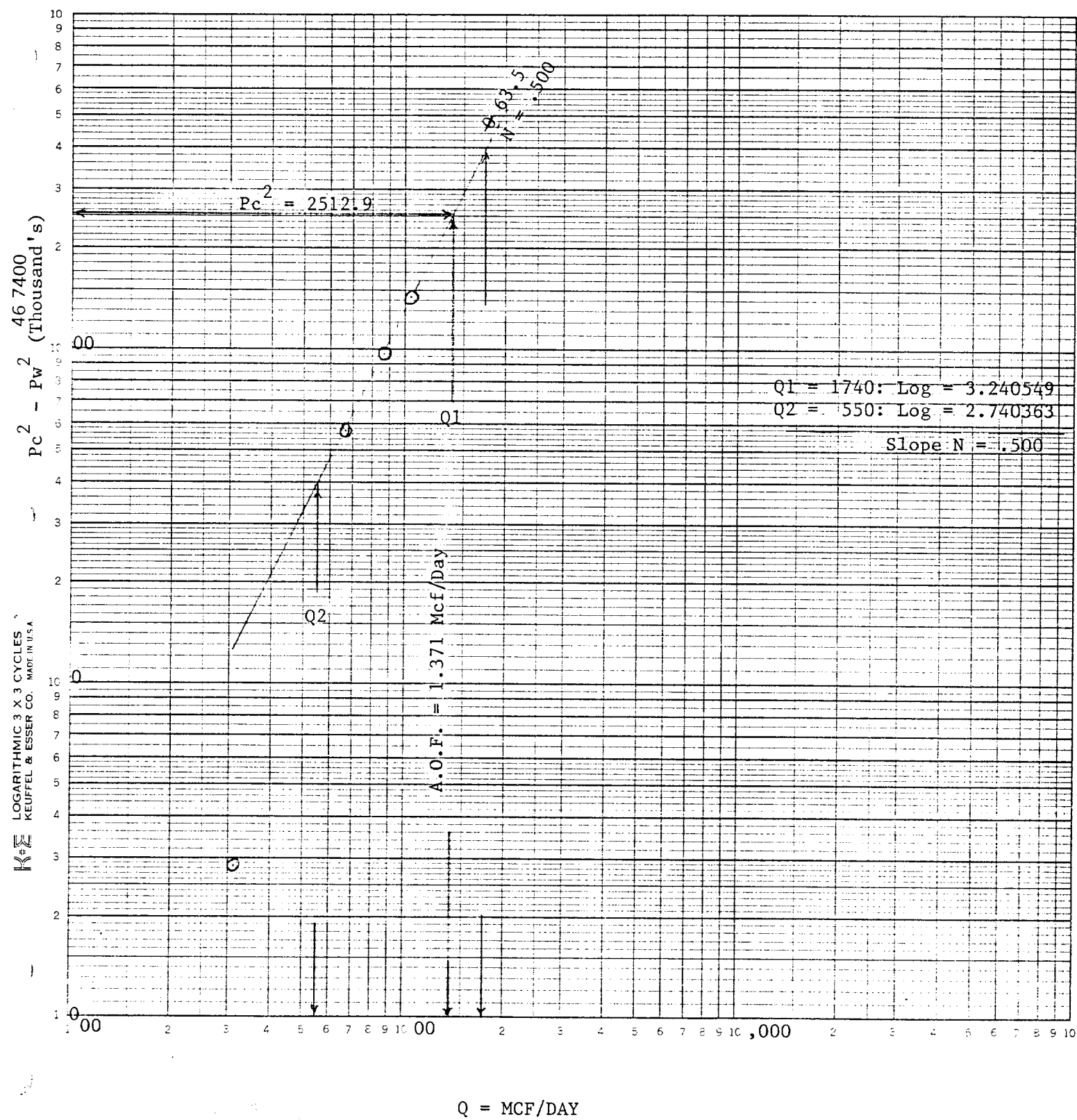


Type Test ☒ Initial ☐ Annual ☐ Special					Test Date 3-3-88						
Company C.W. Trainer				Connection Llano							
Pool Undesignated N. Vacuum				Formation Atoka				Unit			
Completion Date 2-20-88		Total Depth 12,150'		Plug Back TD 12121		Elevation 3984.3		Farm or Lease Name Betty State			
Csg. Size 5 1/2"	Wt. 17#	d 4.892	Set At 12150	Perforations: From 12006 To 12021				Well No. 1			
Tbg. Size 2 7/8"	Wt. 6.5#	d 2.441	Set At 11957	Perforations: From Open-Ended				Unit Soc. Twp. Rge. L 16 17-S 35E			
Type Well - Single - Bradenhead - G.C. or G.O. Multiple Single					Packer Set At 11922			County Lea			
Producing Thru Tubing		Reservoir Temp. °F 194° @ 11955		Mean Annual Temp. °F 60°		Baro. Press. - P _a 13.2		State N.M.			
L 11957	H 11957	Gg .633	% CO ₂ 0.397	% N ₂ 0.781	% H ₂ S	Prover	Meter Run 3.068	Taps Flange			
FLOW 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							1572		PKR	CHOKE	48 Hrs.
1.	3	X	1.000	585	4.00	64°	1444			6/64	1 Hr.
2.	3	X	1.000	600	20.00	112	1278			9/64	1 Hr.
3.	3	X	1.000	585	34.00	102	1117			11/64	1 Hr.
4.	3	X	1.000	585	46.00	83	870			14/64	1 Hr.
5.											
RATE OF FLOW CALCULATIONS											
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor F _g	Super. Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd				
1	4.789	48.92	59	.9962	1.257	1.061	311				
2	4.789	110.74	613.2	.9535	1.257	1.048	666				
3	4.789	142.61	598.2	.9619	1.257	1.047	865				
4	4.789	165.88	598.2	.9786	1.257	1.054	1030				
5.											
NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio No Fluid Mcf/bbl.						
1.	.89	524	1.42	.888	A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.						
2.	.91	572	1.55	.910	Specific Gravity Separator Gas .633		X X X X X X X X				
3.	.89	562	1.52	.912	Specific Gravity Flowing Fluid X X X X X						
4.	.89	543	1.47	.900	Critical Pressure 670 P.S.I.A.		P.S.I.A.				
5.					Critical Temperature 368 R		R				
P _c 1585.2 P _c ² 2512.9					(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.772$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.331$						
NO.	P _t ²	P _w	P _w ²	P _c ² - P _w ²	AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.371$						
1	2256.2	1576.2	2484.4	28.5							
2	2101.2	1405.2	1974.6	538.3							
3	1866.2	1249.4	1561.0	951.9							
4	1653.2	1032.7	1066.5	1418.4							
5	1358.2										
Absolute Open Flow 1,371 Mcfd @ 15.025					Angle of Slope @ 63.5			Slope, n .500			
Remarks: * Shut-in BHP Test calculated from known BHP.											
** Flowing BHP'S											
No Fluid Produced during Test.											
Approved By Commission:			Conducted By: W.S.			Calculated By: B.M.			Checked By: B.M.		

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C.W. TRAINER
 BETTY STATE NO. 1
 L-16-17S-35E.
 Lea County, New Mexico
 March 3, 1988



MAR 7 - 1988
OCD
HOBBY OFFICE

WORK SHEET FOR CALCULATION OF WELLHEAD PRESSURES (P_{cr} or P_w)

Form C-122F
Adopted 9-1-65

FROM KNOWN BOTTOM HOLE PRESSURE (P_f or P_s)

COMPANY C. W. TRAINER LEASE ENTER 3707 WELL NO. 1 DATE 3-3-68

LOCATION: Unit _____ Section 16 Township 19 S Range 36 E

L. 11959 H. 11959 L/H 1600 G. 682 % CO₂ 0.301 % N₂ 1.981 % H₂S _____

GH 7568.78 P_{cr} 690 T_{cr} 368

TABLE IX & X
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NE	1	2	3	4	5	6	7	8
1	T _w (W.H. °R)	534	534	534	534	534	534	534
2	T _g (B.H. °R)	654	654	654	654	654	654	654
3	T = $\frac{T_w + T_g}{2}$	594	594	594	594	594	594	594
4	Z (Est.)	1.853	1.831	1.865	1.842	1.852	1.900	1.892
5	TZ	506.6	493.6	513.8	506.1	521.5	516.9	524.6
6	GH/TZ	13.795	25.283	14.281	15.123	14.512	14.938	14.159
7	e ^s (Table XIV)	1.676	1.709	1.737	1.703	1.713	1.761	1.763
8	P _f or P _s	2101.2	2101.2	1866.2	1866.2	1658.2	1858.2	1858.2
9	P _f or P _s ²	4415.0	4415.0	3482.7	3482.7	2720.1	3444.9	3444.9
10	P _{cr} ² = P _f ² /e ^s or P _w ² = P _s ² /e ^s	2633.8	2484.3	2004.5	1854.3	1560.4	1854.3	1854.3
11	P _c or P _w	1622.9	1546.2	1415.8	1398.5	1259.4	1398.5	1398.5
12	P = $\left(\frac{P_w + P_s}{2}\right)$ or $\left(\frac{P_c + P_f}{2}\right)$	1882.0	1838.7	1600.0	1620.9	1456.5	1518	1455.5
13	P _r = (P/P _{cr})	2.99	2.94	2.94	2.94	2.17	2.19	1.98
14	T _r = (T/T _{cr})	1.61	1.61	1.61	1.61	1.61	1.61	1.61
15	Z (Table XI)	1.831	1.831	1.842	1.842	1.852	1.872	1.892

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