

Type Test: ☐ Initial ☒ Annual ☐ Special				Test Date: 11-12-71	
Company: Morris R. Antweil ✓				Connection: Llano, Inc.	
Field: South Carlsbad <i>Strawn</i>				Formation: Strawn	
Completion Date: 10-3-70		Total Depth: 11825'		Plug Back ID: 11614'	
Elevation: 3264' DF		Farm or Lease Name: Allen			
Well No.: 1 UT					
Unit: J		Sec: 31		Twp: 22s	
Range: 27e					
Type Well - Single - Bradenhead - G.G. or G.O. Multiple				Packer Set At: 11370'	
G.G. Multiple (Dual)				County: Eddy	
Producing Thru: Tubing		Reservoir Temp. °F: 171 @ 10150		Mean Annual Temp. °F: 60	
Baro. Press. - P _a : 13.2		State: New Mexico			
L: 10307'		H: -		G _g : 0.642	
% CO ₂ : 0.62		% N ₂ : 0.36		% H ₂ S: 0.00	
Prover: X		Meter Run: F		Taps:	

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. DWT	Temp. °F	Press. p.s.i.g.	Temp. °F	
SI							3875				48.0 hrs
1.	10/64	1.75	450	25	82	3810	72		DUAL		1.0
2.	11/64	1.75	450	36	70	3733	72		-	-	1.0
3.	12/64	1.75	450	48	66	3694	72		-	-	1.0
4.	13/64	1.75	470	60	63	3650	72		-	-	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 F _g	Super Compress. Factor F _{pv}	Rate of Flow Q, Mcfd
1	14.93	107.61	463.2	0.9795	1.248	1.039	2040.6
2	14.93	129.13	463.2	0.9905	1.248	1.043	2485.7
3	14.93	149.10	463.2	0.9943	1.248	1.044	2883.8
4	14.93	170.27	483.2	0.9971	1.248	1.047	3312.0
5							

NO.	P _t	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	A.P.I. Gravity of Liquid Hydrocarbons	Specific Gravity Separator Gas	Specific Gravity Flowing Fluid	Critical Pressure	Critical Temperature
1	0.69	542	1.47	0.926	3.146	57.8	0.642	X X X X X X X X	673	368
2	0.69	530	1.44	0.920				X X X X X		
3	0.69	526	1.43	0.918						
4	0.72	523	1.42	0.913						
5										

NO.	P _t	P _w *	P _w ²	P _c ² - P _w ²
1	-	5041.2	25413.7	577.9
2	-	5020.2	25202.4	789.2
3	-	4997.2	24972.0	1019.6
4	-	4971.2	24712.8	1278.8
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 25.492$

(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 7.0$

AGI = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 20475$

Gas Liquid Hydrocarbon Ratio: 3.146 Mcf/bbl.

A.P.I. Gravity of Liquid Hydrocarbons: 57.8 Deg.

Specific Gravity Separator Gas: 0.642

Specific Gravity Flowing Fluid: X X X X X

Critical Pressure: 673 P.S.I.A.

Critical Temperature: 368 R

Absolute Open Flow: 20500 Mcfd @ 15.025		Angle of Slope @ 58° 57'		Slope, n: 0.602	
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Remarks: BHP @ (-7103') 10307' used for pressure calculations

Approved By Commission:	Conducted By: COLEMAN PET. ENG.	Calculated By: JOE A. COLEMAN	Checked By: JOE A. COLEMAN
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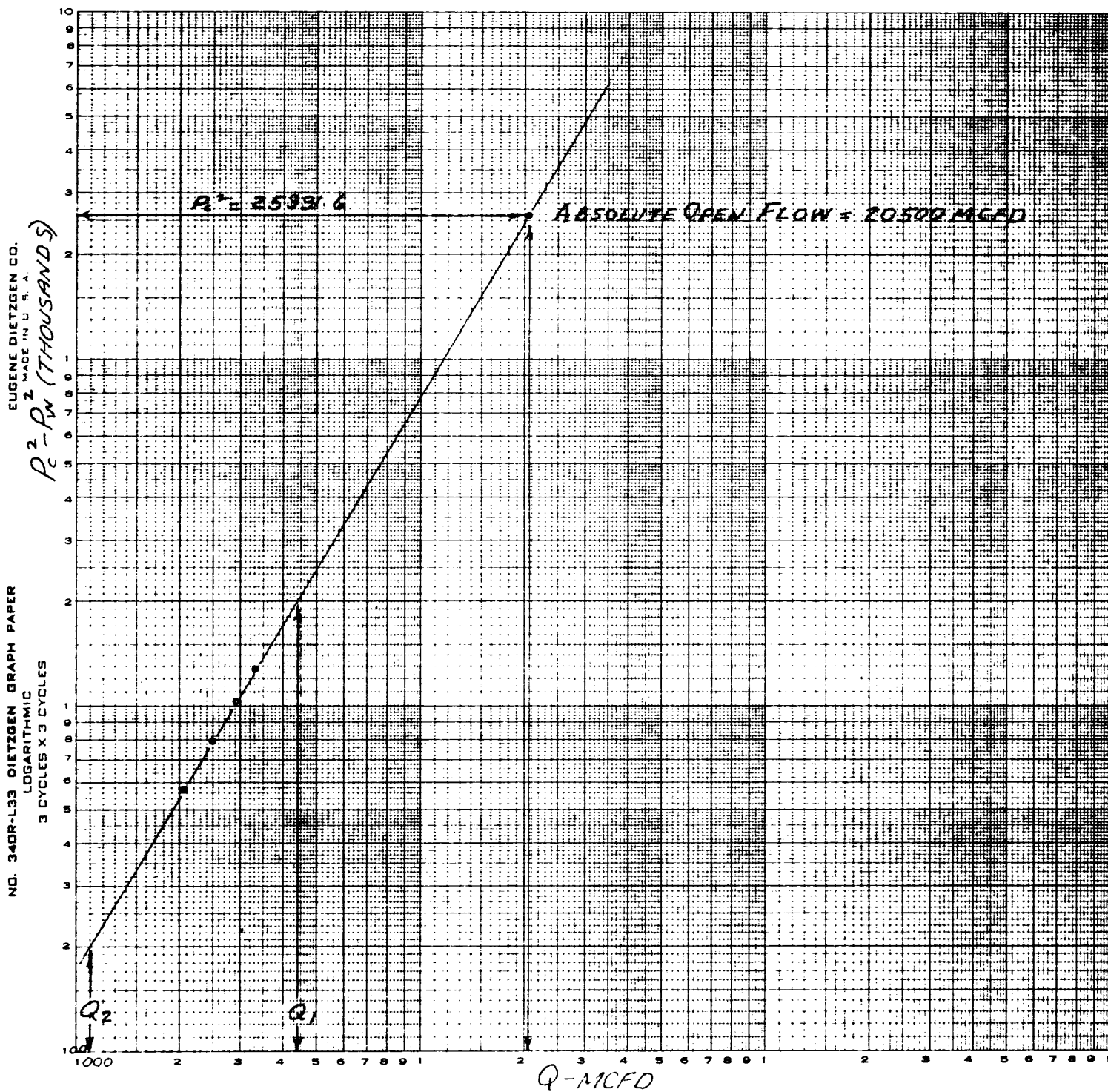
COMPANY MORRIS R. ANTWEIL

WELL ALLE., NO. 1 UT

LOCATION Sec. 31 22 s 27 e

COUNTY EDDY NEW MEXICO

DATE November 12, 1971



$$Q_1 = 4700 \text{ MCFD}; \text{LOG } Q_1 = 3.67345$$

$$Q_2 = 1100 \text{ MCFD}; \text{LOG } Q_2 = 3.04139$$

$$n = 0.60206 = 0.602$$