

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 12-28-82	
Company Tenneco Oil Exploration & Prod.		Connection None	
Locality South of Santa Fe, New Mexico		Formation Morrow	
Completion Date 12-23-82		Total Depth 13350'	
Plug Back TD 13279		Elevation 4145' GL	
Casing Size 5 1/2"		Well No. 1	
Weight 17.0		Set At 13550	
Perforations: From 13126 To 13145		Well No. 1	
Tubing Size 2 3/8"		Set At 13083	
Perforations: Open Ended		Unit H 25 16s 33e	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single		County Lea	
Packer Set At 13083		State New Mexico	
Producing Thru Tubing		Reservoir Temp. °F 190 @ 13050	
Mean Annual Temp. °F 60		Baro. Press. - P _a 13.2	
L 13136		H -	
C _g 0.7349		% CO ₂ 0.737	
% N ₂ 0.869		% H ₂ S -	
Prover -		Meter Run 2.900	
Taps F			

FLOW DATA							TUBING DATA		CASING DATA		Duration of Flow
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. in. H ₂ O	Temp. °F	Press. p.s.i.g. DWT	Temp. °F	Press. p.s.i.g.	Temp. °F	
1	2.900	7/64	1.500	550	10	83	4539	60	Packer		92.0 hrs.
2	2.900	9/64	1.500	550	30	85	4400	66			1.0 hr.
3	2.900	10/64	1.500	560	47	79	4280	71			1.0 hr.
4	2.900	12/64	1.500	580	69	75	4165	73			1.0 hr.
5							4079	74			

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 _{sp}	Rate of Flow Q, Mscf/d
1	11.23	75.05	563.2	0.9786	1.166	1.064	1023.24
2	11.23	129.98	563.2	0.9768	1.166	1.064	1768.90
3	11.23	164.14	573.2	0.9822	1.166	1.067	2252.46
4	11.23	202.31	593.2	0.9859	1.166	1.071	2797.16
5							

NO.	R ₁	Temp. °R	T ₁	Z	Gas Liquid Hydrocarbon Ratio	23.68	Mcf/bbl.
1	0.84	543	1.37	0.884	A.P.I. Gravity of Liquid Hydrocarbons	57	Deg.
2	0.84	545	1.37	0.884	Specific Gravity Separator Gas	0.7349	XXXXXX
3	0.85	539	1.36	0.879	Specific Gravity Flowing Fluid	XXXXX	
4	0.88	535	1.35	0.872	Critical Pressure	671	P.S.I.A.
5					Critical Temperature	397	R

$P_r = 6389.2^* \quad P_r^2 = 40821.9$				$\frac{P_r^2}{P_w^2 - P_r^2} = 8.428$		$\left[\frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 7.448$	
NO.	P ₁ ²	P _w ²	P _r ² - P _w ²				
1	6257.2	39152.6	1669.3				
2	6152.2	37849.6	2972.3				
3	6080.2	36968.8	3853.1				
4	5998.2	35978.4	4843.5				
5							

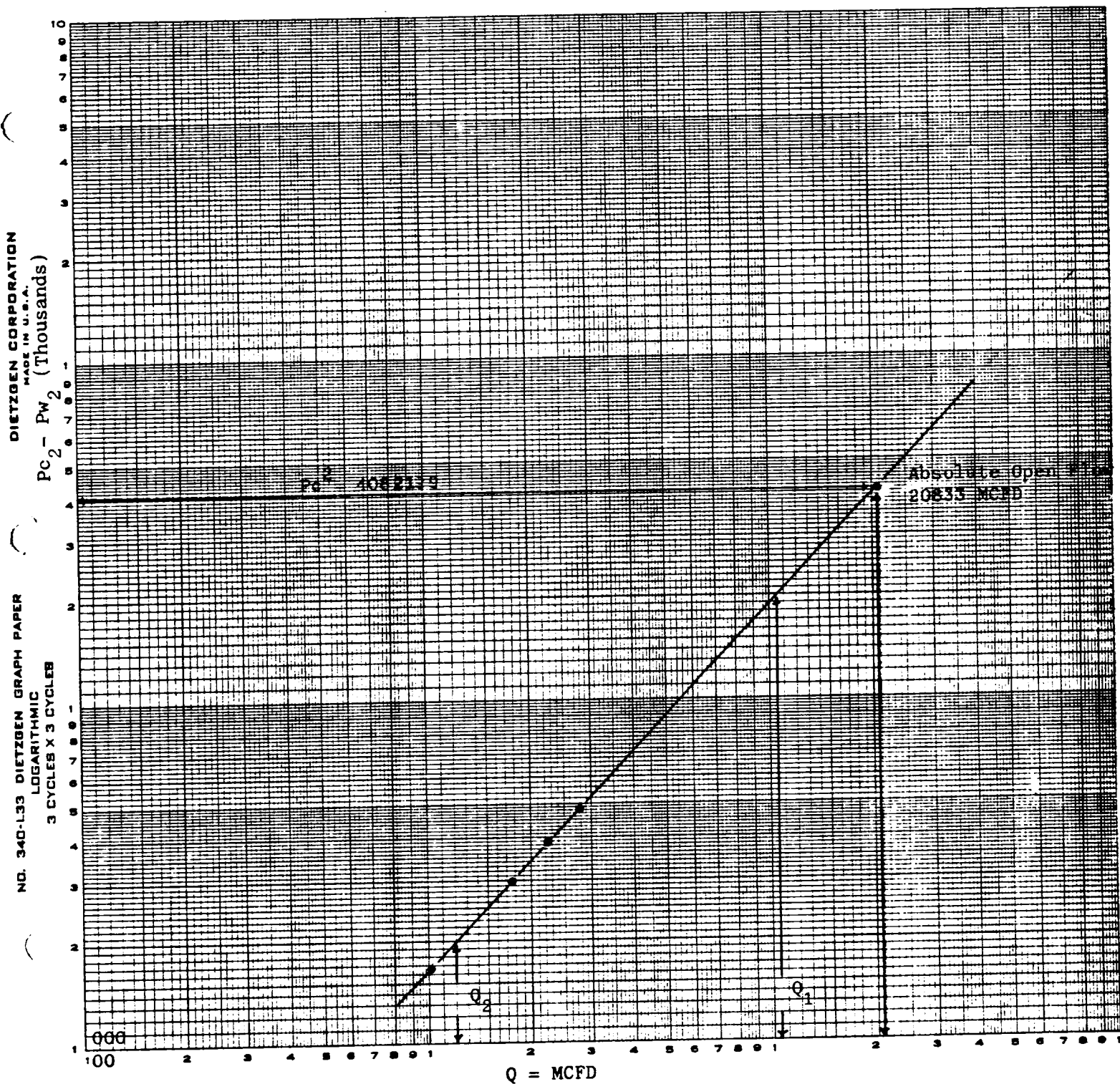
Absolute Open Flow		20833	Mscf @ 15.025	Angle of Slope @	46° 43'	Slope, n	0.942
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*Bottom Hole Pressures @ (-8991) 13136' used for Pressure Calculations

Remarks: Well Produced 13.8 BBLs Condensate in 4.0 hrs. = 82.8 BC/D

Approved By Division	Conducted By:	Calculated By:	Checked By:
<i>[Signature]</i>	Jarrel Well Testing, Inc.	D. Dickerson	D. Dickerson

COMPANY: Tenneco Oil Exploration & Production
 WELL: LG 25, No. 1
 LOCATION: H 25 26s 33e
 COUNTY: Lea
 DATE: December 28, 1982



$Q_1 = 10500$ MCFD; $\log Q_1 = 4.02119$

$Q_2 = 1200$ MCFD; $\log Q_2 = 3.07918$

$$N = \frac{4.02119 - 3.07918}{1} = 0.94201 = 0.942$$

NEW-TEX LAB

PHONE 505/393-3561

P. O. BOX 1161

611 W. SNYDER

HOBBS, NEW MEXICO 88240

ANALYSIS CERTIFICATE

CLIENT: JARREL WELL TESTING
ADDRESS: BOX 1457
CITY, STATE: HOBBS NM 88240

ANALYSIS NUMBER: 8908
DATE OF RUN: 12/27/82
DATE SECURED: 12/24/82

SAMPLE IDENT: TENNECO - L G 25 #1
SAMPLING PRESS: SAMPLING TEMP:

REMARKS: 8824 STATIO 2.492 MCF/D 93 DEGREES F
REMARKS: SAMPLED AT 9:00 AM

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

	MOLE PERCENT	GAL/ MCF
NITROGEN	0.869	
CARBON DIOXIDE	0.737	
METHANE	79.538	
ETHANE	11.309	3.016
PROPANE	4.687	1.287
ISO-BUTANE	0.696	0.227
NORMAL BUTANE	1.437	0.452
ISO-PENTANE	0.465	0.170
NORMAL PENTANE	0.431	0.156
HEXANES	0.316	0.130
HEPTANES PLUS	0.546	0.251
TOTAL	100.000	5.689

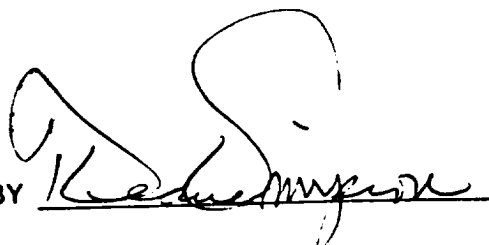
PROPANE GPM: 1.29 BUTANES GPM: 2.68
ETHANE GPM: 3.22 PENTANES PLUS GPM: 0.71

SPECIFIC GRAV (CALC): 0.7349
MOLE WEIGHT: 21.34

HEAT-BTU/CU FT	PRESSURE (PSIA)	WET	DRY
14.676	1242	1262	
14.650	1236	1258	
14.730	1243	1263	
14.735	1243	1263	

ANALYZED BY: DEANE SIMPSON

APPROVED BY



JARREL SERVICES, INC.

POST OFFICE BOX 1654

PHONE 505 393-5396

HOBBS, NEW MEXICO 88240

COMPANY: Tenneco Oil Exploration & Production

WELL: LG 25. No. 1

FIELD: Kemnitz - Morrow

CHRONOLOGICAL PRESSURE DATA

DATE	STATUS OF WELL	TIME	ELAPSED TIME HRS.	MIN.	SURFACE PRESSURE TBG	CSG	BHP @ (-8991) 13136' PSIG
1982							
12/28	Shut in 91.75 hrs.						
	Run Tandem Bombs &				DWT		
	hung Bombs @ 13050'	11:45 AM	91	45	4539	PKR	6376
	Started 1st Rate	12:00 N	92	00	4539	-	6376
	Flowing					MCFD	
	Finished 1st Rate	1:00 PM	1	00	4400	-	1023.24 6244
	& Started 2nd Rate						
	Finished 2nd Rate	2:00	1	00	4280	-	1768.90 6139
	& Started 3rd Rate						
	Finished 3rd Rate	3:00	1	00	4165	-	2252.46 6067
	& Started 4th Rate						
	Finished 4th Rate	4:00	1	00	4079	-	2797.16 5985
	& Pulled Bombs						