

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

RECEIVED

☒ Initial		☐ Annual		☐ Special		Test Date 10-9-74		DEC 11 1974	
Tenneco Oil Company				Connection None				O. C. B.	
				Formation Morrow				ARTESIA, OFFICE	
Test Date 10-9-74		Total Depth		Plug Back TD 11,056		Elevation 3556 Gr		Form of Logging Federal Com	
5 1/2 17#		Set At 11,096		Perforations: From 10,761 To 10,804		Well No. 34-1			
2 7/8 EUE		Set At 10,653		Perforations: From To		C 33 17-S 29-E			
Type of Well - Single - Spontaneous - G.C. or C.O. Multiple Single						Packer Set At		County Eddy	
Reservoir Temp. °F 162		Mean Annual Temp. °F 60		Baro. Press. - P _c 13.2		State New Mexico			
Tubing		Casing		Provs.		Meter Run		XXXXX	
								CUT	

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow
NO.	Provs. Log	X	Casing Size	XXXXX Inches	Diff. h _w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	
1	3.0		2.0	7		54	1612	74		1 Hr
2	3.0		2.0	11		60	1537	74		1 Hr
3	3.0		2.0	17		54	1554	74		1 Hr
4	3.0		2.0	24		36	1516	74		1 Hr

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	1140 Mcf/D		7" Hg	.9962	1.237	1.031	1443
2	1460 Mcf/D		11" Hg	1.000	1.237	1.032	1864
3	1870 Mcf/D		17" Hg	1.006	1.237	1.033	2411
4	2280 Mcf/D		24" Hg	1.024	1.237	1.036	2892

NO.	P	Temp. °F	$\bar{P}$	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	.10	524	1.40	.940	121042	54.2	.645	XXXXXX	670	375
2	.10	520	1.39	.939						
3	.10	514	1.37	.937						
4	.10	496	1.32	.932						

2382.2	5674.8				(1) $\frac{P_c^2}{P_c^2 - P_w^2} = \frac{5674.8}{794.3}$	(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 5.149$
2316.2	5364.8			310.0		
2290.2	5245.0			429.8		
2256.2	5090.4			584.4		
2209.2	4880.6			794.3		

15408

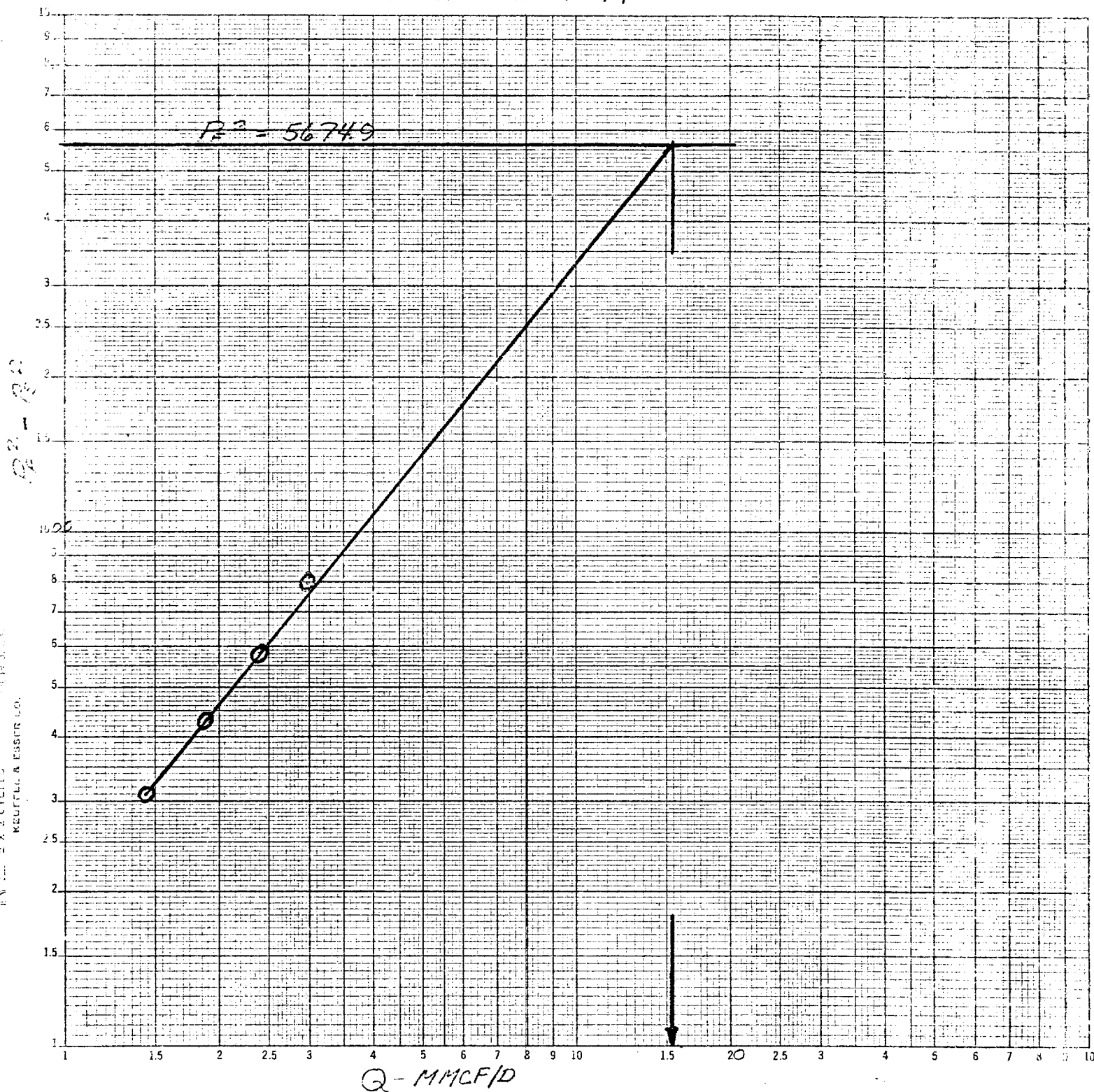
Mold @ 15.025

Angle of Slope

.833

Calculated open flow potential computed using bottom hole pressure at mid perf using pressure measuring device.

TENNECO OIL COMPANY
 FEDERAL COM 33-1
 GRAYBERG MORROW
 EDDY COUNTY, NEW MEXICO
 TEST DATE: 10-9-74



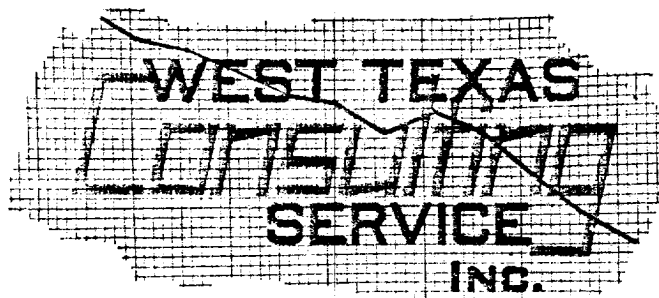
$$Q_1 = 12.25 \text{ MMCF} \quad \log_{10} Q_1 = 1.088$$

$$Q_2 = 1.80 \text{ MMCF} \quad \log_{10} Q_2 = .255$$

$$n = .833$$

$$CAOF = 15.41 \text{ MMCF/D}$$

H. L. HAGLER
W. T. HAGLER
J. N. CASPARIS
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R. D. OVERSTREET
R. G. ROBERSON



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AREA CODE 915
682-5361 • 553-1810

2209 W. INDUSTRIAL AVE.
MIDLAND, TEXAS 79701

FULL INSURANCE
COVERAGE

INDIVIDUAL WELL DATA SHEET

Company Tenneco Oil Company Lease Federal Well No. 33-1
Field _____ County Eddy State New Mexico
Test Date 10-9-74 Time 10:40 AM Status of Well _____ Shut In _____
Top of Pay 10,761' Total Depth 11,056 PB Producing Formation Morrow
Tubing 2 7/8 EUE Depth 10,653 B.H.C. _____ Packer _____ Pressure Datum MPP
Casing 5 1/2 " Depth 11,096 Perf. 10,761-10,804 Liner _____ Packer _____

Depth Feet	Δ Depth	Pressure Lbs. Sq. In.	Δ Pressure	*Gradient Lbs./Ft.		
Surface		1684				
	2500		135	.054	Tubing Press.	1687 DWG
2500		1819			Top of Fluid	No
	2500		151	.060	Top of Water	No
5000		1970			Hrs.- Shut In	
	2500		166	.067	Temp. @ 10,782'	= 162°F
7500		2136			Elevation	3556 Gr
	2500		170	.068	Last Test Date	
10,000		2306			Press. Last Test	
	500		34	.068	B.H.P. Change	
10,500		2340				
	282		29	.103	RPG	9192
10,782 Run Depth & MPP		2369			Calibration No.	43
					Run By	R G Roberson
					Calculated By	H L Hagler
1st Rate		2303				
2nd Rate		2277				
3rd Rate		2243				
4th Rate		2196				

* Pressure and Gradients are calculated in decimals. Pressure and Δ pressure are shown to the nearest pound.

Calculations and Remarks: All Pressure Instruments are Temperature Compensated

Distribution 4 - 1200 Lincoln Tower Building - Denver. Colorado 80203
10-15-74 1 - Our File

SOUTH WESTERN LABORATORIES

1703 West Industrial — P. O. Box 2150

MIDLAND, TEXAS

683-3348

RECEIVED

DEC 11 1974

O. C. C.
TESIA, OFFICE

FRACTIONAL ANALYSIS REPORT

Rec'd. 10-10-74

SAMPLE MARKED Federal 33-1, Gas Sample

FILE NO. C-1950-G

LAB. NO. 20695

SAMPLE FROM Tenneco Oil Company

DATE SECURED 10-9-74

DATE OF RUN 10-10-74

SECURED BY WTES, Inc.

COMPONENT	MDL. %	G. P. M.	LIQUID VOL. %	
Oxygen				
Nitrogen	1.08			
Carbon Dioxide	0.40			
Methane	86.34			
Ethane	7.49			
Propane	3.09	0.848		
i-Butane	0.42	0.137		
n-Butane	0.68	0.214		
i-Pentane	0.17	0.062		
n-Pentane	0.15	0.054		
Hexanes	0.08	0.033		
Heptanes plus	0.10	0.046		
Hydrogen Sulfide	*			
Helium				
Hydrogen				
Carbon Monoxide				
TOTALS	100.00	1.394		

CONDENSATE VALUES, G.P.M.

Propane

Butane

Gasoline

HEATING VALVE, B.T.U. Per Cu. Ft.*

Calculated from % Composition 1140

Calculated water saturated 1120

SULPHUR CONTENT, Grains Per 100 Cu. Ft.*

Hydrogen Sulfide

Mercaptans

SPECIFIC GRAVITY*

Calculated from % Composition 0.654

Gravity Balance

*14.696 lbs./sq. in., 60° F

REMARKS * None detected by Tutwiler (less than 4 grains/100 cu. ft.)

COPIES : 3cc Tenneco Oil Company
1cc West Texas Engineering Service, Inc.

SOUTHWESTERN LABORATORIES

Jack H. Barton