

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

Form C-122
Revised 9-1-65

Test Type: ☒ Initial ☐ Annual		RECEIVED Date: 12-20-79		RECEIVED DEC 20 1979	
Company: MESA PETROLEUM Co.		Connection: AIR		JAN - 2 1980	
Pool: UNDESIGNATED		Formation: ATOKA		Unit: K	
Completion Date: 11-26-79		Total Depth: 8690		Perforations: 8621 3544 GL	
Csg. Size: 4 1/2"		Set At: 8690		Well No.: # 1	
Trq. Size: 2 3/8"		Set At: 8338		Unit: K Sec: 10 Twp: 16 Rge: 27	
Type Well - Single - Prodenhead - G.G. or G.O. Multiple				County: EDDY	
Producing Thru: TBG.		Reservoir Temp. °F:		State: NEW MEXICO	
L:		H:		Meter Run: 4"	
Gg: .6984		% CO ₂ : .313		% H ₂ S: 0	
% N ₂ : 1.077		Prover:		Taps: FLG	

FLOW DATA					TUBING DATA		CASING DATA		Duration of Flow	
NO.	Prover Line Size	Orifice Size	Press. p.s.i.g.	Diff. hw	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.		Temp. °F
1.	4 X .500	.500	330	6.0	56	2075				72 HR.
2.	4 X .500	.500	330	13.0	78	1885				1 HR.
3.	4 X .500	.500	360	25.5	82	1485				1 HR.
4.	4 X .500	.500	360	52.0	98	900				1 HR.

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mc/d
1.	1.182	45.38	343.2	1.004	1.197	1.043	67
2.	1.182	66.80	343.2	.9831	1.197	1.038	96
3.	1.182	97.55	373.2	.9795	1.197	1.040	141
4.	1.182	139.31	373.2	.9653	1.197	1.036	197

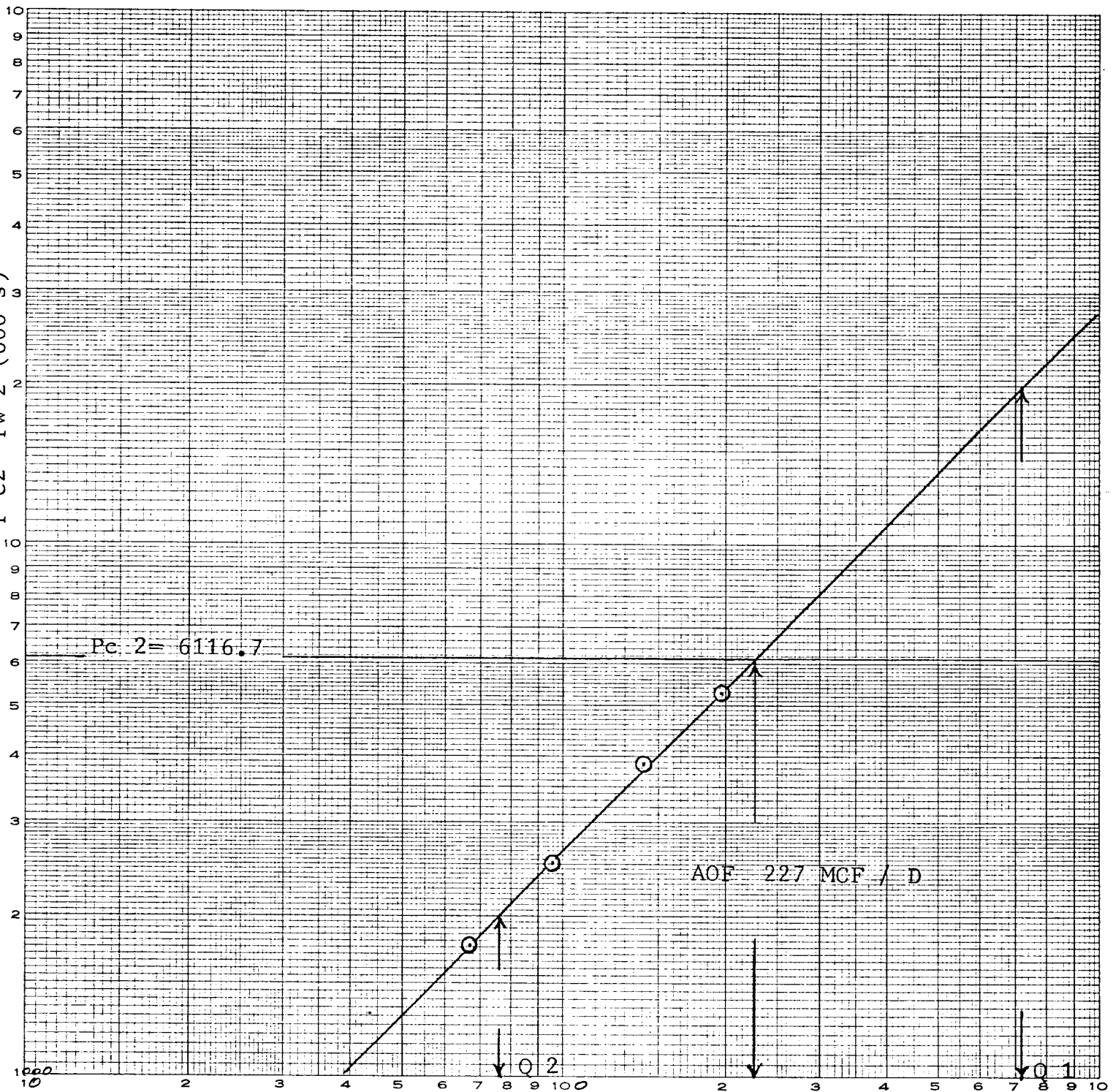
NO.	P _t	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1.	.51	516	1.32	.920	dry	
2.	.51	538	1.37	.929		
3.	.56	542	1.38	.925		
4.	.56	558	1.42	.931		

NO.	P _t ²	P _w	P _w ²	P _t ² - P _w ²	(1) $\frac{P_t^2}{P_t^2 - P_w^2} =$	(2) $\left[\frac{P_t^2}{P_t^2 - P_w^2} \right]^n =$
1.	2088.3	4360.7	1756.0		1.158	1.154
2.	1898.3	3603.4	12513.3			
3.	1498.4	2245.1	3871.6			
4.	913.8	835.0	5281.7			

Absolute Open Flow: 227 Mc/d @ 15.025		Angle of Slope: 45.75*		Slope, n: .977	
Remarks:					
Approved By: JOHN DAVIS		Conducted By: LARRY DAVIS		Checked By:	

COMPANY : MESA PETROLEUM
 LEASE : FULLER FED.
 WELL NO. : # 1
 UNIT : K / 10/16/27
 COUNTY : EDDY
 STATE : NEW MEXICO
 DATE : DECEMBER 20, 1979

DIETZGEN CORPORATION
 MADE IN U.S.A.
 ND. 341-L22 DIETZGEN GRAPH PAPER
 LOGARITHMIC
 2 CYCLES X 2 CYCLES



$Q \text{ MCF} / D$
 $Q1 = 720$; $\text{LOG OF } Q1 = 2.857332$
 $Q2 = 76$; $\text{LOG OF } Q2 = 1.880814$

$$N = .977$$

NEW-TEX LAB

P. O. BOX 1161
HOBBS, N.M. 88240

No. 2003
Run No.
Date of Run 12-21-79
Date Secured 12-20-79

CERTIFICATE OF ANALYSIS

A Sample of Mesa Petroleum Corporation Fuller Federal Comm #1
Secured from Davis Services
At Box 2033 Secured by
Hobbs, N.M. 88240 Time Date
Sampling conditions Press
Temp.

FRACTIONAL ANALYSIS

Percentage Composition

	MOL %	LIQ. %	G.P.M.
Carbon Dioxide	.313		
Air			
Nitrogen	1.077		
Oxygen			
Hydrogen sulfide			
Hydrogen			
Methane	81.967		
Ethane	9.100		2.427
Propane	4.895		1.348
Butanes			
Iso-Butane	.682		.223
N-Butane	1.049		.330
Pentanes			
Iso-Pentane	.205		.075
N-Pentane	.302		.109
Hexanes	.135		.055
Heptanes	.275		.117
Octanes			
TOTAL	100.000		4.684

Calc. Sp. Gr. 0.6984
Calc. A.P.I.
Calc. Vapor Press. PSIA
Sp. Gr.
Mol. Wt. 20.27

LIQUID CONTENT (GAL./MCF)

Propane Calc. G.P.M. 1.348
Butanes Calc. G.P.M. .553
Pentanes Plus. G.P.M. .356
Ethane Calc. G.P.M. 2.427
RVP Gasoline G.P.M.
B.T.U./Cu. Ft. @ 14.696 P.S.I.A.
Dry Basis 1208
Wet Basis 1187
Sulfur Analysis by Titration
Gr./100 Cu. Ft.
Hydrogen Sulfide
Mercaptans
Sulfides
Residual Sulfur
Total Sulfur

Run by Deane Simpson Checked by Approved by Deane Simpson

Additional Data and Remarks

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

Form C-122D
Adopted 9-1-65

COMPANY MESA PETROLEUM LEASE FULLER FED. WELL NO. # 1 DATE 12-20-79

LOCATION: Unit K Section 10 Township 16 Range 27

L 8322 H 8322 L/H 1.000 G .6984 % CO₂ .313 % N₂ 1.077 % H₂S 0

d 1.995 F .018231 GH 5812 P_{cr} 668 T_{cr} 392

1st 2nd 3rd 4th

LINE	1st	2nd	1st	2nd	1st	2nd	1st	2nd		
1 Q _m	.067	.067	.096	.096	.141	.141	.197	.197		
2 T _w (W.H. °R)	534	534	534	534	534	534	534	534		
3 T _s (B.H. °R)	617	617	617	617	617	617	617	617		
4 T = ($\frac{1}{2}T_w + T_s$)	575.5	575.5	575.5	575.5	575.5	575.5	575.5	575.5		
5 Z (Est.)	.755	.752	.762	.754	.793	.775	.858	.845		
6 TZ	434.5	432.8	438.5	433.9	456.4	446.0	493.8	486.3		
7 GH/TZ	13.376	13.430	13.253	13.394	12.735	13.031	11.770	11.952		
8 e ^s (Table XIV)	1.651	1.655	1.644	1.652	1.612	1.630	1.555	1.565		
9 1-e ^s (Table XIV)	.394	.396	.392	.395	.380	.387	.357	.361		
10 P _t	2088.2	2088.2	1898.2	1898.2	1498.2	1498.2	913.2	913.2		
11 P _t 2/1000	4360.6	4360.6	3603.2	3603.2	2244.6	2244.6	833.9	833.9		
12 F _r (Table XV)	.018231	.018231	.018231	.018231	.018231	.018231	.018231	.018231		
13 F _c = F _r TZ	7.9214	7.8899	7.9949	7.9110	8.3201	8.1313	9.0021	8.8657		
14 F _c Q _m	.531	.529	.768	.759	1.173	1.147	1.773	1.747		
15 L/H (F _c Q _m) ²	.282	.279	.589	.577	1.376	1.314	3.145	3.050		
16 F _w = L/H (F _c Q _m) ² (1-e ^{-s})	.111	.111	.231	.228	.523	.508	1.122	1.102		
17 P _w ² = P _t ² + F _w	4360.7	4360.7	3603.4	3603.4	2245.1	2245.1	835.1	835.0		
18 P _s ² = e ^s P _w ²	7201.1	7215.6	5923.2	5954.5	3619.5	3659.8	1298.4	1307.2		
19 P _s	2683.5	2686.2	2433.8	2440.2	1902.5	1913.1	1139.5	1143.3		
20 P = ($\frac{P_t + P_s}{2}$)	2385.8	2387.2	2166.0	2169.2	1700.3	1705.6	1026.3	1028.3		
21 P _r = (P/P _{cr})	3.57	3.57	3.24	3.25	2.55	2.55	1.54	1.54		
22 T _r = (T/T _{cr})	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47		
23 Z (Table XI)	.752	.752	.754	.754	.775	.775	.845	.845		