

NEW MEXICO OIL CONSERVATION COM. ON
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

RECEIVED
C-122
Revised 6-1-65

FEB 18 1980

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 02-13-80		O. C. D. ARTESIA, OFFICE	
Company MESA PETROLEUM Co.				Connection AIR			
Well Designation UNDESIGNATED				Location ATOKA		Well	
Completion Date 12-08-79		Total Length 8911		Flowing Depth 8835		Elevation 3642 GL	
Casing Size 4 1/2		Set At 8911		Perforations From 8678 To 8704		Well No. # 2	
Tubing Size 2 3/8		Set At 8625		Perforations From To		Unit Sec. Twp. Rge. G 11 16 27	
Type Well - Single - Prodenhead - G.G. or G.O. Multiple SINGLE- GAS				Packer Set At 8625		County EDDY	
Producing thru TBG.		Reservoir Temp. °F 160 @ 8625		Mean Annual Temp. °F 60		State NEW MEXICO	
L 8625		H 8625		G _g .660		Prover	
		% CO ₂ 1.619		% N ₂ .968		Meter Run 4"	
				% H ₂ S		Fig. FIG.	

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.	Temp. °F	Press. p.s.i.g.		Temp. °F
51							2296				72 HR.
1.	4 X	1.000		450	5.0	56	1922				1 HR.
2.	4 X	1.000		435	8.0	74	1682				1 HR.
3.	4 X	1.000		435	12.0	94	1360				1 HR.
4.	4 X	1.000		425	14.5	102	980				1 HR.
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor F _t	Gravity Factor F _g	Super Comp. Factor, F _{pv}	Rate of Flow Q, Mgd
1	4.753	48.12	463.2	1.004	1.231	1.052	297
2	4.753	59.88	448.2	.9868	1.231	1.043	361
3	4.753	73.34	448.2	.9688	1.231	1.038	432
4	4.753	79.71	438.2	.9619	1.231	1.035	464
5.							

NO.	P _f	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Mcf/Dal.
1.	.69	516	1.37	.904		
2.	.66	534	1.42	.920		
3.	.66	554	1.47	.929		
4.	.65	562	1.49	.933		
5.						

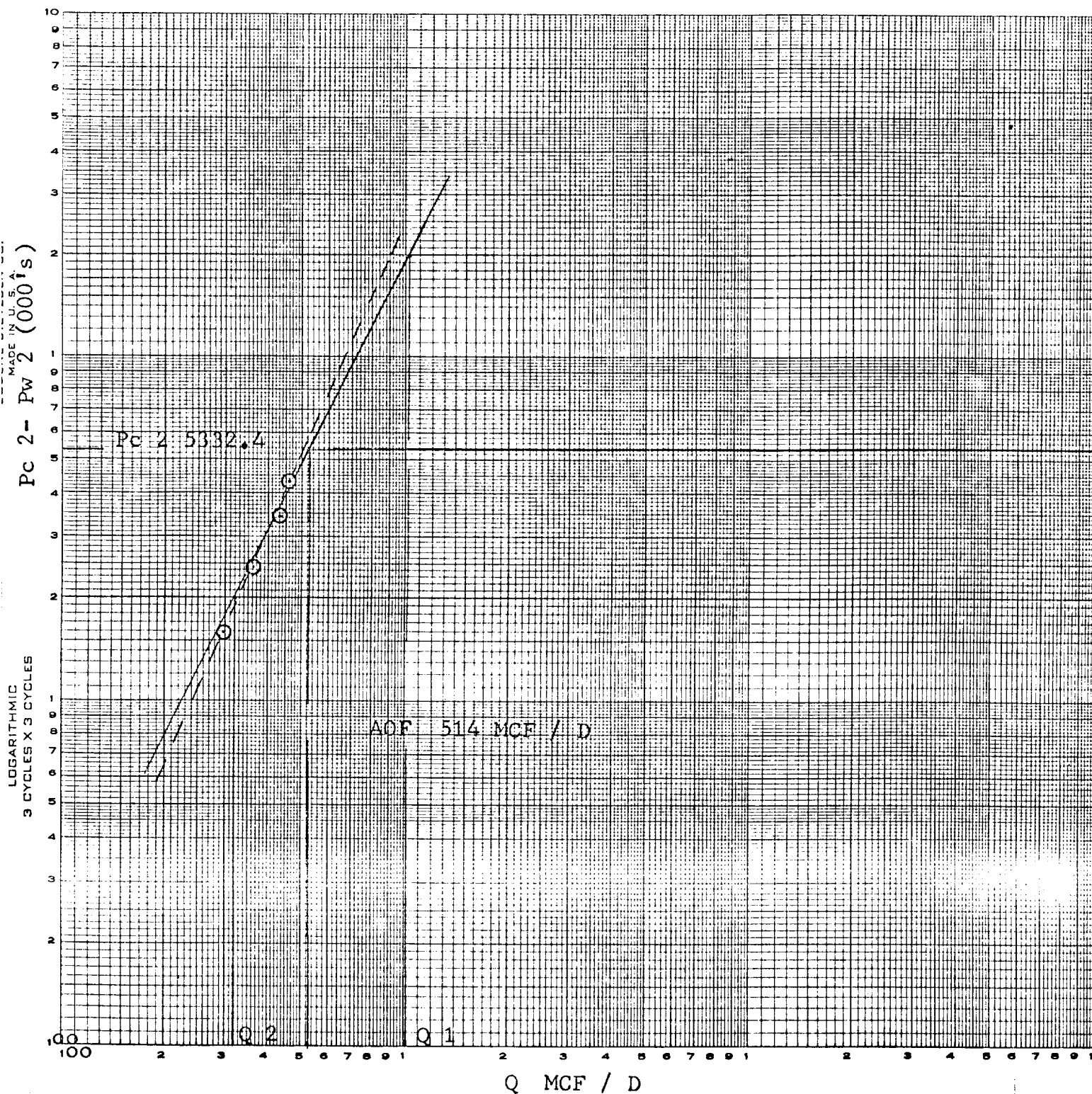
A.P.L. Gravity of Liquid Hydrocarbons _____ Mcf/Dal. Specific Gravity Separator Gas .660 Specific Gravity Flowing Fluid _____ Critical Pressure 674 P.S.I.A. Critical Temperature 377 R			
---	--	--	--

$P_c = 2309.2$ $P_w = 5332.4$	$(1) \frac{P_c^2}{P_c^2 - P_w^2} = 1.229$ $(2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.108$																								
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>NO.</th> <th>P_f</th> <th>P_w</th> <th>P_f² - P_w²</th> </tr> <tr> <td>1</td> <td>1935.8</td> <td>3747.3</td> <td>1585.1</td> </tr> <tr> <td>2</td> <td>1696.2</td> <td>2877.1</td> <td>2455.3</td> </tr> <tr> <td>3</td> <td>1375.0</td> <td>1890.7</td> <td>3441.7</td> </tr> <tr> <td>4</td> <td>996.3</td> <td>992.6</td> <td>4339.8</td> </tr> <tr> <td>5</td> <td></td> <td></td> <td></td> </tr> </table>	NO.	P _f	P _w	P _f ² - P _w ²	1	1935.8	3747.3	1585.1	2	1696.2	2877.1	2455.3	3	1375.0	1890.7	3441.7	4	996.3	992.6	4339.8	5				$ACT = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = .514$
NO.	P _f	P _w	P _f ² - P _w ²																						
1	1935.8	3747.3	1585.1																						
2	1696.2	2877.1	2455.3																						
3	1375.0	1890.7	3441.7																						
4	996.3	992.6	4339.8																						
5																									

Absolute Open Flow	514	Mcf/D 15.025	Angle of Slope	63.5	Slope, n	.500
--------------------	-----	--------------	----------------	------	----------	------

Approved By	Conducted By	Calculated By	Checked By
	Larry Davis	Larry Davis	

LEASE : WELLS FEDER. ,
 WELL NO. : # 2
 UNIT : G / 11/16/27
 COUNTY : EDDY
 STATE : NEW MEXICO
 DATE : FEBRUARY 13, 1980



Q 1 = 1012; LOG OF Q 1 = 3.005149

Q 2 = 320; LOG OF Q 2 = 2.505149

N = .500

NEW-TEX LAB

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

CERTIFICATE OF ANALYSIS

No. 2183
Run No. _____
Date of Run 2-14-80
Date Secured 2-13-80

A Sample of Mesa Petroleum Wells Federal #2
Secured from Davis Services
At Box 2033 Secured by _____
Hobbs, NM 88240 Time _____ Date _____
Sampling conditions _____ Press _____
Temp. _____

FRACTIONAL ANALYSIS

Percentage Composition

	MOL %	LIQ. %	G.P.M.
Carbon Dioxide	1.619		
Air			
Nitrogen	.968		
Oxygen			
Hydrogen sulfide			
Hydrogen			
Methane	86.559		
Ethane	6.175		1.647
Propane	3.254		.896
Butanes			
Iso-Butane	.276		.090
N-Butane	.590		.185
Pentanes			
Iso-Pentane	.180		.066
N-Pentane	.168		.061
Hexanes	.091		.037
Heptanes	.120		.051
Octanes			
TOTAL	100.000		3.033

Calc. Sp. Gr. — 0.6595
Calc. A.P.I. — _____
Calc. Vapor Press. — _____ PSIA
Sp. Gr. _____
Mol. Wt. _____

LIQUID CONTENT (GAL./MCF)

Propane Calc. G.P.M. .896
Butanes Calc. G.P.M. .275
Pentanes Plus. G.P.M. .215
Ethane Calc. G.P.M. 1.647
RVP Gasoline G.P.M. _____
B.T.U./Cu. Ft. @ 14.696 P.S.I.A.
Dry Basis 1119
Wet Basis 1099
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