

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

Form C-122
Revised 9-1-65

RECEIVED

Type Test MAY 1 1972 ☒ Initial ☐ Annual ☐ Special		Test Date 5-11-72	
Company Vates Petroleum Corp.		Connection Unconnected	
Pool Penasco Draw (Gas)		Formation San Andres	
Completion Date 5-11-72		Total Depth 1924	Plug Back TD 1820
Elevation 3616' GR		Farm or Lease Name Mobil Federal	
Csg. Size 4 1/2 x 5 1/2"	Wt. 9.5 x 15.5#	Set At 4.34 26 1820	Perforations: From 1097 To 1281
Tbg. Size 2 3/8"	Wt. 4.7#	Set At 1104	Perforations: From To
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single		Packer Set At None	County Eddy
Producing Thru Csg. Annulus	Reservoir Temp. °F 88	Mean Annual Temp. °F	Baro. Press. - P _a 13.2
State New Mexico			
L 1104	H 1189	Gg 0.729	% CO ₂ 2.30
% N ₂ 2.32		% H ₂ S 1.41	Prover Yes
Meter Run		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.	Temp. °F	Press. p.s.i.g.		Temp. °F
SI									261	88	-
1.	2	x	.375	9.5		97			249	88	1 hr.
2.	2	x	.375	16.5		93			234	88	1 hr.
3.	2	x	.500	12.0		87			214	88	1 hr.
4.	2	x	.500	16.5		81			187	88	1 hr.
5.											

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, Mcfd
1	2.378		22.7	.9662	1.169	.9989	61
2	2.378		29.7	.9697	1.169	.9982	80
3	4.279		25.0	.9750	1.169	.9984	122
4	4.279		29.7	.9804	1.169	.9981	145
5							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1.	.406	545.	1.428	.951	30.578	
2.	.394	544.	1.348	.942	42	
3.	.375	543.3	1.311	.940	.729	XXXXXXX
4.	.345	542.2	1.309	.944	Specific Gravity Separator Gas	.834
5.	.305	541.	1.306	.951	Specific Gravity Flowing Fluid	XXXXX
					Critical Pressure	683.7 P.S.I.A. 670.6 P.S.I.A.
					Critical Temperature	381.7 R 414.3 R

NO.	P _c	P _w	P _w ²	P _c ² - P _w ²	(1) $\frac{P_c^2}{P_c^2 - P_w^2} =$	(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n =$
1	68,749	390.1	152,178	8944	1.79	1.425
2	61,108	379.8	144,248	16874		
3	51,620	361.7	130,827	30315		
4	40,080	340.1	115,668	45454		
5						

Absolute Open Flow		323 Mcfd @ 15.025	Angle of Slope @	61.3	Slope, n	0.6078
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Remarks: Potential test witnessed By Transwestern representative - Mr. Jack Moore. - Well slugging, tends to load up.

Approved By Commission:	Conducted By: Don Weaver & Jack Moore	Calculated By: Eddie Mahfood	Checked By:
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WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

Form C-122D
Adopted 9-1-65

COMPANY

Yates Co

LEASE

Mobile Fed CT

WELL NO. 1

DATE

5-12-72

LOCATION: Unit

1C

Section

6

Township

19

Range

25

L 1104' 2 3/4" Hg

H 1189' c.p.

Ht 910, 909, 899, 894, 877

G_g = 1729 g_m = 834 % CO₂

2.30

% N₂ 2.32

% H₂S

1.41

906' 5 1/4" Hg

H 1189' c.p.

Ht 910, 909, 899, 894, 877

G_g = 1729 g_m = 834 % CO₂

2.30

% N₂ 2.32

% H₂S

1.41

906-TD 4 1/2" 9.54 c.p.

H 1189' c.p.

Ht 910, 909, 899, 894, 877

G_g = 1729 g_m = 834 % CO₂

2.30

% N₂ 2.32

% H₂S

1.41

Assumed P_{sc} = 1105(P_{sc}) = 288

H 1189' c.p.

Ht 910, 909, 899, 894, 877

G_g = 1729 g_m = 834 % CO₂

2.30

% N₂ 2.32

% H₂S

1.41

LINE	1	2	3	4	5	1	2	3	4	5
1 Q _m mcf/cd	S.S.	61	80	122	145	h _f = 279'	280'	290'	295'	312' Fluid Heads.
2 T _w (W.H. °R)	548	546	545	543	541	P _{sc} = 4319	4302	43017	42257	4179 c.d. gradient
3 T _s (B.H. °R)	542	542	541.6	541.4	541	P _{sc} = 120.5	120.5	124.7	125.6	130.4 psi
4 T = (T _w + T _s)	545	544	543.3	542.2	541	P _{sc} = 280.9	269.6	255.1	236.1	209.7 psi
5 Z (Est.)	.950	.942	.940	.944	.937	P _{sc} = 401.4	390.1	379.8	361.7	340.1 psi/cor
6 T _Z	5128	512.4	510.7	511.8	514.5					
7 GH/TZ	1.2812	1.3856	1.4686	1.4576	1.4208	P _{sc} = 161122	152178	144248	120827	115668
8 e ^s (Table XIV)	1.0492	1.0533	1.0565	1.0561	1.0547	P _{sc} = 8944	16.874	30315	45454	
9 1-e ^s (Table XIV)	-	.0508	.0538	.0534	.0522					
10 P _t	274.2	262.2	247.2	227.2	200.2					
11 P _t ² /1000	75.186	68.749	61.108	51.620	40.080					
12 F _t (Table XV)	-	.002362	.002344	.002344	.002344					
13 F _c = F _t TZ	-	1.2027	1.1971	1.1997	1.2060					
14 F _c Q _m	-	73.37	95.77	146.36	174.87					
15 L/H (F _c Q _m) ²	-	5383	9191	21421	30580					
16 F _w = L/H (F _c Q _m) ² (1-e ^s)	-	273	493	1.144	1.596					
17 P _w ² = P _t ² + F _w	75,186	69,022	61,601	52,764	41,696					
18 P _g ² = e ^s P _w ²	78,885	72,701	65,081	55,724	43,956					
19 P _{sc} P _L	280.9	269.6	255.1	236.1	209.7					
20 P = (P _L + P _s)	279.6	265.9	251.2	231.2	204.6					
21 P _t = (P/P _{ct})	.406	.394	.375	.345	.305					
22 T _t = (T/T _{ct})	1.428	1.348	1.311	1.309	1.306					
23 Z (Table XI)	.951	.942	.940	.944	.951					

Yates Petroleum Corp. - Mobil Federal CT#1

J-6-19-25

