

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

Form C-122

Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 8/3/03		30-025-34899			
Company Yates Petroleum Corporation						Connection 7/21/03					
Pool Sand Springs Atoka-Morrow						Formation Morrow		Unit			
Completion Date 7/20/03			Total Depth 14227		Plug Back TD 12400		Elevation 4160		Farm or Lease Name Sand Springs ASU State		
Csg. Size 7.000	Wt. 26.000	d 6.276	Set At 13166	Perforations: From 12068 To 12088				Well No. 4			
Tbg. Size 2.875	Wt. 6.500	d 2.441	Set At 11990	Perforations: From 12068 To 12088				Unit B	Sec. 11	Twp. 11S	Rge. 34E
Type Well Single						Packer Set At 11990		County Lea			
Producing Thru Tubing			Resv. Temp. °F 181 @ 12088		Mean Temp. °F 62		Baro. Press. - Pa 13.2		State NM		
L 11990	H 11990	Gg 0.695	%CO ₂ 1.008	%N ₂ 1.469	%H ₂ S 0.000	Prover 0.000	Meter Run 2.000	Taps Flange			

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow	
NO.	Prover Line Size	X	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
Sl.	0.000	x	0.000	0	0.0	0	2300	0			0
1.	2.067	x	1.375	350	2.0	60	1900	60			24
2.	2.067	x	1.375	350	6.0	60	1383	60			24
3.	2.067	x	1.375	350	9.0	60	867	60			24
4.	2.067	x	1.375	350	11.0	60	350	60			24
5.		x									

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{hwPm}$	Pressure Pm	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1.	10.200	27.0	363.2	1.0000	1.200	1.040	343
2.	10.200	46.7	363.2	1.0000	1.200	1.040	594
3.	10.200	57.2	363.2	1.0000	1.200	1.040	728
4.	10.200	63.2	363.2	1.0000	1.200	1.040	805
5.							

NO.	Pr	Temp °R	Tr	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1.	0.54	520	1.36	0.924	40	
2.	0.54	520	1.36	0.924	47.500	
3.	0.54	520	1.36	0.924	0.695	XXXXXXXXXX
4.	0.54	520	1.36	0.924	0.772	XXXXXXXXXX
5.						

Pc	Pc ²	Pw	Pw ²	Pc ² - Pw ²	(1) $\frac{Pc^2}{Pc^2 - Pw^2} =$	(2) $\left[\frac{Pc^2}{Pc^2 - Pw^2} \right]^n =$
1.	3660.3	1913.5	3661.6	1689.3	1.171	1.127
2.	1949.4	1397.6	1953.4	3397.5		
3.	774.8	884.1	781.5	4569.3		
4.	131.9	376.4	141.6	5209.3		
5.						

AOF = Q $\left[\frac{Pc^2}{Pc^2 - Pw^2} \right]^n =$ 820

SEP 2003
RECEIVED
Hobbs
OCD

Absolute Open Flow	820	Mcf/d @ 15.025	Angle of Slope θ	37	Slope, n	0.756
Remarks:						

Approved By Commission: 	Conducted By: Mike Barrett	Calculated By: Misty Carter	Checked By: George Freeman
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WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (Pw) C-122D

DATE 8/3/03

COMPANY Yates Petroleum Corporation LEASE Sand Springs ASU State WELL NO. 4

LOCATION: Unit B Section 11 Township 11S Range 34E

L 11990 H 11990 L/H 1.000 G 0.772 %CO₂ 1.008 %N₂ 1.469 %H₂S 0.000

d 2.441 Fr 0.010495 GH 9261.1 Pcr 667.9 Tcr 407.1

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	0.343	0.594	0.728	0.805	
2 Tw(W.H.°R)	520	520	520	520	
3 Ts(B.H.°R)	641	641	641	641	
4 T = (Tw+Ts) / 2	580.2	580.2	580.2	580.2	
5 Z (Est.)	0.723	0.741	0.816	0.921	
6 TZ	419.7	429.7	473.4	534.1	
7 GH / TZ	22.066	21.552	19.565	17.340	
8 e ^{as} (Table XIV)	2.288	2.243	2.082	1.916	
9 1-e ^{as} (Table XIV)	0.563	0.554	0.520	0.478	
10 Pt	1913.2	1396.2	880.2	363.2	
11 Pt ² / 1000	3660.3	1949.4	774.8	131.9	
12 Fr (Table XV)	0.010495	0.010495	0.010495	0.010495	
13 Fc = FrTZ	4.405	4.510	4.968	5.605	
14 FcQm	1.51	2.68	3.62	4.51	
15 L / H(FcQm) ²	2.3	7.2	13.1	20.3	
16 Fw = L / H(FcQm) ² (1-e ^{as})	1.29	3.98	6.80	9.73	
17 Pw ² = Pt ² +Fw	3661.6	1953.4	781.5	141.6	
18 Ps ² = e ^{as} Pw ²	8376.0	4381.9	1627.5	271.4	
19 Ps	2894.1	2093.3	1275.7	520.9	
20 P = (Pt+Ps) / 2	2403.7	1744.7	1078.0	442.1	
21 Pr = (P / Pcr)	3.60	2.61	1.61	0.66	
22 Tr = (T / Tcr)	1.43	1.43	1.43	1.43	
23 Z (Table XI)	0.723	0.741	0.816	0.921	

Company
Well
Location
10^5

Yates Petroleum Corporation
Sand Springs ASU State #4
B 11-11S-34E

County
Date

Lea
8-3-03

Q, Mcfd

10^4

10^3

10^2

10^3

10^4

AOF = 820

P_o - P_{wf}

