

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 11/24/03		30-025-34861	
Company Yates Petroleum Corporation				Connection 11/22/03					
Pool Sand Springs, Atoka-Morrow				Formation Morrow				Unit	
Completion Date 11/22/03		Total Depth 13500		Plug Back TD 12450		Elevation 4142		Farm or Lease Name Sand Springs ASU State	
Csg. Size 7.000	Wt. 26.000	d 6.276	Set At 13182	Perforations: From 12139 To 12200		Well No. 3			
Tbg. Size 2.875	Wt. 6.500	d 2.441	Set At 11900	Perforations: From 12139 To 12200		Unit J		Sec. 11	Twp. 11S
Type Well Single				Packer Set At 11900		County Lea			
Producing Thru Tubing		Resv. Temp. °F 175 @ 11875		Mean Temp. °F 62		Baro. Press. - Pa 13.2		State NM	
L 11900	H 11900	Gg 0.665	%CO ₂ 0.955	%N ₂ 1.193	%H ₂ S 0.000	Prover 0.000	Meter Run 4.000	Taps Flange	

FLOW DATA						TUBING DATA		CASING DATA		Duration	
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	of Flow
Sl.	0.000	x	0.000	0	0.0	0	2600	0			0
1.	4.026	x	2.375	600	1.0	60	2350	60			24
2.	4.026	x	2.375	600	2.0	60	1767	60			24
3.	4.026	x	2.375	600	3.0	60	1183	60			24
4.	4.026	x	2.375	600	4.0	60	600	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.	28.980	24.8	613.2	1.0000	1.226	1.064	937
2.	28.980	35.0	613.2	1.0000	1.226	1.064	1325
3.	28.980	42.9	613.2	1.0000	1.226	1.064	1622
4.	28.980	49.5	613.2	1.0000	1.226	1.064	1873
5.							

NO.	Pr	Temp °R	Tr	Z	Gas Liquid Hydrocarbon Ratio	25	Mcf/bbl.
1.	0.91	520	1.40	0.883	A.P.I. Gravity of Liquid Hydrocarbons	51.000	Deg.
2.	0.91	520	1.40	0.883	Specific Gravity Separator Gas	0.665	XXXXXXXXXX
3.	0.91	520	1.40	0.883	Specific Gravity Flowing Fluid	XXXXXXXXXX	0.785
4.	0.91	520	1.40	0.883	Critical Pressure	672	P.S.I.A. 668 P.S.I.A.
5.					Critical Temperature	373	°R 412

Pc	2613.2	Pc ²	6828.8
NO.	Pi ²	Pw	Pw ²
1.	5584.7	2365.3	5594.5
2.	3169.1	1785.4	3187.6
3.	1430.9	1208.6	1460.8
4.	376.0	651.0	423.9
5.			

(1) $\frac{Pc^2}{Pc^2 - Pw^2} = 1.272$

AOF = Q $\left[\frac{Pc^2}{Pc^2 - Pw^2} \right]^n = 1878$

$\frac{Pc^2}{Pc^2 - Pw^2} = 1.272$

$\frac{Pc^2}{Pc^2 - Pw^2} = 1.272$

Absolute Open Flow	1878	Mcf/d @ 15.025	Angle of Slope θ	31	Slope, n	0.607
--------------------	------	----------------	-------------------------	----	----------	-------

Remarks:

Approved By Commission:	Conducted By:	Calculated By:	Checked By:
	Noel Gomez	Misty Carter	George Freeman

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (Pw) C-122D

DATE 11/24/03

COMPANY Yates Petroleum Corporation LEASE Sand Springs ASU State WELL NO. 3

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

L 11900 H 11900 L/H 1.000 G 0.785 %CO₂ 0.955 %N₂ 1.193 %H₂S 0.000

d 2.441 Fr 0.010495 GH 9337.9 Pcr 667.7 Tcr 412.0

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	0.937	1.325	1.622	1.873	
2 Tw(W.H.°R)	520	520	520	520	
3 Ts(B.H.°R)	635	635	635	635	
4 T = (Tw+Ts) / 2	577.2	577.2	577.2	577.2	
5 Z (Est.)	0.735	0.705	0.745	0.855	
6 TZ	424.3	407.2	430.0	493.5	
7 GH / TZ	22.006	22.934	21.717	18.920	
8 e ^{^s} (Table XIV)	2.283	2.363	2.257	2.033	
9 1-e ^{^s} (Table XIV)	0.562	0.577	0.557	0.508	
10 Pt	2363.2	1780.2	1196.2	613.2	
11 Pt ² / 1000	5584.7	3169.1	1430.9	376.0	
12 Fr (Table XV)	0.010495	0.010495	0.010495	0.010495	
13 Fc = FrTZ	4.453	4.273	4.513	5.180	
14 FcQm	4.17	5.66	7.32	9.70	
15 L / H(FcQm) ²	17.4	32.0	53.6	94.2	
16 Fw = L / H(FcQm) ² (1-e ^{^s})	9.78	18.48	29.88	47.85	
17 Pw ² = Pt ² +Fw	5594.5	3187.6	1460.8	423.9	
18 Ps ² = e ^{^s} Pw ²	12769.7	7533.1	3297.0	861.7	
19 Ps	3573.5	2744.6	1815.8	928.3	
20 P = (Pt+Ps) / 2	2968.3	2262.4	1506.0	770.7	
21 Pr = (P / Pcr)	4.45	3.39	2.26	1.15	
22 Tr = (T / Tcr)	1.40	1.40	1.40	1.40	
23 Z (Table XI)	0.735	0.705	0.745	0.855	

Company
Well
Location
10^5

Yates Petroleum Corporation
Sand Springs ASU State #3
J 11-11S-34E

County
Date

Lea
11-24-03

Q, Mcfd

10^4

Po-Pwf

10^3

10^2

10^3

10^4

AOF = 1878

