

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

Form C-122

RECEIVED

Type Test [x] Initial [] Annual [] Special					Test Date 11/28/82		JAN 20 1983		
Company Yates Petroleum Corporation					Connection Transwestern Pipeline Company			O. C. D.	
Pool Pecos Slope - Abo Pool					Formation Abo			Unit ARTESIA, OFFICE	
Completion Date 5/5/82		Total Depth 4100.0'		Plug Back TD 4031.0'		Elevation 3665.3'		Farm or Lease Name Cottonwood RchMK St	
Csg Size 4.500"	Wt. 9.500#	d 4.090"	Set At 4086.0'	Perforations: From 3799.0' To 3805.0'		Well No. 3			
Tbg Size 2.375"	Wt. 4.700#	d 1.995"	Set At 3750.0'	Perforations: From 0.0' To 0.0'		Unit Sec M 36		Twp 6S	Rge 25E
Type Well Single					Packer Set At 3750.0'		County Chaves		
Producing Thru Tubing		Resv. Temp. °F 98 @ 3750'		Mean Temp. °F 62.0		Baro. Press. - Pa 13.2 psia.		State New Mexico	
L 3750.0'	H 3750.0'	Gg .643	%CO2 .09	%N2 5.68	%H2S 0.00	Prover 0.000"	Meter Run 2.000"	Taps Flange	

FLOW DATA					TUBING DATA		CASING DATA		Duration of Flow
NO	Prover Orifice Size X Size	Press. psig	Diff. hw	Temp. °F	Press. psig	Temp. °F	Press. psig	Temp. °F	
SI	0.000 X 0.000	0	0.0	72	1015	0	0	0	0 hrs.
1.	2.067 X 1.000	170	26.4	72	876	62	0	0	24 hrs.
2.	2.067 X 1.000	180	37.3	72	832	62	0	0	24 hrs.
3.	2.067 X 1.000	185	55.6	72	769	62	0	0	24 hrs.
4.	2.067 X 1.000	190	64.0	70	720	62	0	0	24 hrs.
5.	0.000 X 0.000	0	0.0	0	0	0	0	0	0 hrs.

RATE OF FLOW CALCULATIONS

NO	Coefficient (24 HOUR)	√hwPm	Pressure Pm	Flow Temp Factor Ft.	Gravity Factor Fg	Super Compress. Fact. Fpv	Rate of Flow Q, Mcfd
1.	4.947	69.54	183.20	.989	1.247	1.014	430
2.	4.947	84.89	193.20	.989	1.247	1.014	525
3.	4.947	104.98	198.20	.989	1.247	1.014	649
4.	4.947	114.04	203.20	.991	1.247	1.015	707
5.	0.000	0.00	0.00	0.000	0.000	0.000	0

NO	Pr	Temp. °R	Tr	Z	Gas Liquid Hydrocarbon Ratio	Dry	Mcfd/bbl.
1.	.28	532	1.50	.973	A.P.I. Gravity of Liquid Hydrocarbons	0.000	Deg.
2.	.29	532	1.50	.973	Specific Gravity Separator Gas	.643	xxxxxxxxxxxx
3.	.30	532	1.50	.972	Specific Gravity Flowing Fluid	xxxxxx	.643
4.	.31	530	1.50	.971	Critical Pressure	661.4	PSIA
5.	0.00	0	0.00	0.000	Critical Temperature	354.1	°R

Pc 1028.2	Pc2 1057.2						
NO	Pt2	√Pw	Pw2	Pc2-Pw2	(1)	Pc2	(2)
1.	790.7	890.5	793.0	264.2	$\frac{Pc2}{Pc2-Pw2} = 2.3993$	$\left[\frac{Pc2}{Pc2-Pw2} \right]^n = 2.0278$	
2.	714.4	847.2	717.8	339.4			
3.	611.8	785.6	617.1	440.1			
4.	537.6	737.5	543.9	513.3			
5.	0.0	0.0	0.0	0.0			

$$AOF = Q \left[\frac{Pc2}{Pc2-Pw2} \right]^n = 1317 \text{ Mcfd}$$

Absolute Open Flow 1317 Mcfd @ 15.025 Angle of Slope, θ 39 Slope, n .808
Remarks:

Approved By:	Conducted By: David Weaver	Calculated By: Andie Alderson	Checked By:
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WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (PW) C-122D

Adopted 9-1-65

DATE 1/20/83

COMPANY Yates Petroleum Corporation LEASE Cottonwood RichMK St WELL NO. 3

LOCATION: Unit M Section 36 Township 6S Range 25E

L 3750.0 H 3750.0 L/H 1.000 G .643 %CO₂ .09 %N₂ 5.68 %H₂S 0.00

d 1.995 Fr .017777 GH 2411.3 Pcr 661.4 Tcr 354.1

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	.430	.525	.649	.707	0.000
2 Tw(W.H.%R)	522.0	522.0	522.0	522.0	0.0
3 Ts(B.H.%R)	558.0	558.0	558.0	558.0	0.0
4 T=(Tw+Ts)/2	540.0	540.0	540.0	540.0	0.0
5 Z(Est.)	.875	.880	.888	.895	0.000
6 TZ	472.3	475.3	479.7	483.2	0.0
7 GH/TZ	5.105	5.073	5.026	4.990	0.000
8 e ^s (Table XIV)	1.211	1.210	1.207	1.206	0.000
9 1-e ^{-s} (Table XIV)	.174	.173	.172	.171	0.000
10 Pt	889.2	845.2	782.2	733.2	0.0
11 Pt ² /1000	790.7	714.4	611.8	537.6	0.0
12 Fr(Table XV)	.017777	.017777	.017777	.017777	0.000000
13 Fc=FrTZ	8.403	8.450	8.528	8.594	0.000
14 FcQm	3.614	4.435	5.538	6.078	0.000
15 L/H(FcQm) ²	13.060	19.671	30.665	36.940	0.000
16 Fw=L/H(FcQm) ² (1-e ^{-s})	2.274	3.408	5.268	6.301	0.000
17 Pw ² =Pt ² +Fw	793.0	717.8	617.1	543.9	0.0
18 Ps ² =e ^s Pw ²	960.1	868.2	745.1	655.7	0.0
19 Ps	979.9	931.8	863.2	809.8	0.0
20 P=(Pt+Ps)/2	934.5	888.5	822.7	771.5	0.0
21 Pr=(P/Pcr)	1.41	1.34	1.24	1.17	0.00
22 Tr=(T/Tcr)	1.52	1.52	1.52	1.52	0.00
23 Z(Table XI)	.875	.880	.888	.895	0.000

Company	Yates Petroleum Corporation
Well	Cottonwood RchMK St No. 3
Location	M, 36-6S-25E
County	Chaves
Date	1/20/83

$P_c^2 - P_w^2$, THOUSANDS

