

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

Form C-122

Type Test ☒ Initial ☐ Annual ☐ Special					Test Date 2/20/1999	
Company Yates Petroleum Corp				Connection Agave Energy Company		
Pool Wildcat				Formation Morrow		Unit
Completion Date 2/12/1999		Total Depth 12830		Plug Back TD 12776		Elevation 3995
Farm or Lease Name FIELD APK STATE						
Csg. Size 5.500	Wt. 17.000	d 4.892	Set At 12830	Perforations: From 12301 To 12448		Well No. 3
Tbg. Size 2.875	Wt. 6.500	d 2.441	Set At 12185	Perforations: From 12301 To 12448		Unit Sec. Twp. Rge. K 2 16S 35E
Type Well Single				Packer Set At 12257		County Lea
Producing Thru Tubing		Resv. Temp. °F 187 @ 12350		Mean Temp. °F 62		State New Mexico
L 12830	H 12830	Gg 0.697	%CO ₂ 0.503	%N ₂ 0.956	%H ₂ S 0.000	Prover 0.000
					Meter Run 4.000	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	3500	0			0
1.	4.026	x	1.250	410	62.0	60	1290	60			24
2.	4.026	x	1.250	410	68.0	60	997	60			24
3.	4.026	x	1.250	410	72.0	60	703	60			24
4.	4.026	x	1.250	410	75.0	60	410	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.	7.469	162.0	423.2	1.0000	1.198	1.049	1520
2.	7.469	169.6	423.2	1.0000	1.198	1.049	1592
3.	7.469	174.6	423.2	1.0000	1.198	1.049	1638
4.	7.469	178.2	423.2	1.0000	1.198	1.049	1672
5.							

NO.	Pr	Temp °R	Tr	Z	Gas Liquid Hydrocarbon Ratio	0	Mcf/bbl.
1.	0.63	520	1.35	0.909	A.P.I. Gravity of Liquid Hydrocarbons	0.000	Deg.
2.	0.63	520	1.35	0.909	Specific Gravity Separator Gas	0.697	XXXXXXXXXX
3.	0.63	520	1.35	0.909	Specific Gravity Flowing Fluid	XXXXXXXXXX	0.697
4.	0.63	520	1.35	0.909	Critical Pressure	669	P.S.I.A. 669 P.S.I.A.
5.					Critical Temperature	384	°R 384 °R

Pc	3513.2	Pc²	12342.6
NO.	Pt²	Pw	Pw²
1.	1698.3	1314.2	1727.1
2.	1020.5	1026.5	1053.7
3.	512.9	741.8	550.3
4.	179.1	469.6	220.5
5.			

(1) $\frac{Pc^2}{Pc^2 - Pw^2} = 1.047$

(2) $\left[\frac{Pc^2}{Pc^2 - Pw^2} \right]^n = 1.033$

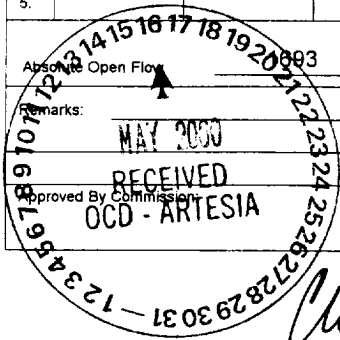
AOF = Q $\left[\frac{Pc^2}{Pc^2 - Pw^2} \right]^n = 1693$

Absolute Open Flow $\uparrow$ 1693 Mcfd @ 15.025

Angle of Slope θ 36

Slope, n 0.716

Remarks:	Conducted By: Rocky Harper	Calculated By: Katie Brunson	Checked By: Pinson McWhorter
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WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (Pw) C-122D

DATE 2/20/1999

COMPANY Yates Petroleum Corp LEASE FIELD APK STATE WELL NO. 3

LOCATION: Unit K Section 2 Township 16S Range 35E

L 12830 H 12830 L/H 1.000 G 0.697 %CO₂ 0.503 %N₂ 0.956 %H₂S 0.000

d 2.441 Fr 0.010495 GH 8942.5 Pcr 669.2 Tcr 384.5

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	1.520	1.592	1.638	1.672	
2 Tw(W.H.°R)	520	520	520	520	
3 Ts(B.H.°R)	647	647	647	647	
4 T = (Tw+Ts) / 2	583.2	583.2	583.2	583.2	
5 Z (Est.)	0.807	0.839	0.880	0.924	
6 TZ	470.7	489.5	513.1	539.0	
7 GH / TZ	18.997	18.268	17.428	16.592	
8 e ^s (Table XIV)	2.039	1.984	1.922	1.863	
9 1-e ^{-s} (Table XIV)	0.510	0.496	0.480	0.463	
10 Pt	1303.2	1010.2	716.2	423.2	
11 P _t ² / 1000	1698.3	1020.5	512.9	179.1	
12 Fr (Table XV)	0.010495	0.010495	0.010495	0.010495	
13 Fc = FrTZ	4.940	5.137	5.385	5.656	
14 FcQm	7.51	8.18	8.82	9.46	
15 L / H(FcQm) ²	56.4	66.9	77.8	89.4	
16 Fw = L / H(FcQm) ² (1-e ^{-s})	28.74	33.18	37.37	41.43	
17 Pw ² = P _t ² +Fw	1727.1	1053.7	550.3	220.5	
18 Ps ² = e ^s Pw ²	3521.1	2090.3	1057.5	410.9	
19 Ps	1876.5	1445.8	1028.3	641.0	
20 P = (Pt+Ps) / 2	1589.8	1228.0	872.3	532.1	
21 Pr = (P / Pcr)	2.38	1.84	1.30	0.80	
22 Tr = (T / Tcr)	1.52	1.52	1.52	1.52	
23 Z (Table XI)	0.807	0.839	0.880	0.924	

Company
Well
Location
10^6

Yates Petroleum Corp
FIELD APK STATE #3
K 2-16S-35E

County
Date

Lea
2-20-1999

Q, Mcfd

10^5

P₀-P_{wf}

10^4

10^3

10^4
AOF = 1693

10^5

