

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 5/21/04		30-025-29451	
Company Yates Petroleum Corporation				Connection 7/10/04					
Pool Und. Morton; Morrow (Gas)				Formation Morrow				Unit	
Completion Date 5/24/04		Total Depth 13330		Plug Back TD 13294		Elevation 4063		Farm or Lease Name Reed AXV	
Csg. Size 3.500	Wt. 9.300	d 4.090	Set At 13330	Perforations: From 12968 To 12999		Well No. 1			
Tbg. Size 3.500	Wt. 9.300	d 2.992	Set At 13330	Perforations: From 12968 To 12999		Unit K	Sec. 12	Twp. 15S	Rge. 34E
Type Well Single				Packer Set At 13330		County Lea			
Producing Thru Tubing		Resv. Temp. °F 183 @ 12983		Mean Temp. °F 62		Baro. Press. - Pa 13.2		State NM	
L 12968	H 12968	Gg 0.670	%CO ₂ 0.701	%N ₂ 0.848	%H ₂ S 0.000	Prover 0.000	Meter Run 2.000	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
St.	0.000	x	0.000	0	0.0	0	4300	0			0
1.	2.067	x	1.375	700	23.0	60	1600	60			24
2.	2.067	x	1.375	700	25.0	60	1300	60			24
3.	2.067	x	1.375	700	27.0	60	1000	60			24
4.	2.067	x	1.375	700	28.0	60	700	60			24
5.		x									

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{hwP_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1.	10.200	128.1	713.2	1.0000	1.222	1.078	1721
2.	10.200	133.5	713.2	1.0000	1.222	1.078	1794
3.	10.200	138.8	713.2	1.0000	1.222	1.078	1865
4.	10.200	141.3	713.2	1.0000	1.222	1.078	1899
5.							

NO.	Pr	Temp °R	Tr	Z	Gas Liquid Hydrocarbon Ratio	26	Mcfd/bbl.
					A.P.I. Gravity of Liquid Hydrocarbons	52.500	Deg.
1.	1.06	520	1.38	0.860	Specific Gravity Separator Gas	0.670	XXXXXXXXXX
2.	1.06	520	1.38	0.860	Specific Gravity Flowing Fluid	XXXXXXXXXX	0.784
3.	1.06	520	1.38	0.860	Critical Pressure	671	P.S.I.A. 667 P.S.I.A.
4.	1.06	520	1.38	0.860	Critical Temperature	376	°R 413 °R
5.							

P _c	4313.2	P _c ²	18603.7
NO.	P _i ²	P _w	P _w ²
1.	2602.4	1616.8	2614.0
2.	1724.5	1318.2	1737.6
3.	1026.6	1020.8	1041.9
4.	508.7	725.4	526.3
5.			

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.103$

(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.082$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1941$

12 13 14 15 16 17 18

19 20 21 22 23 24 25

26 27 28 29 30 31 32

33 34 35 36 37 38 39

40 41 42 43 44 45 46

47 48 49 50 51 52 53

54 55 56 57 58 59 60

61 62 63 64 65 66 67

68 69 70 71 72 73 74

75 76 77 78 79 80 81

82 83 84 85 86 87 88

89 90 91 92 93 94 95

96 97 98 99 100 101 102

103 104 105 106 107 108 109

110 111 112 113 114 115 116

117 118 119 120 121 122 123

124 125 126 127 128 129 130

131 132 133 134 135 136 137

138 139 140 141 142 143 144

145 146 147 148 149 150 151

152 153 154 155 156 157 158

159 160 161 162 163 164 165

166 167 168 169 170 171 172

173 174 175 176 177 178 179

180 181 182 183 184 185 186

187 188 189 190 191 192 193

194 195 196 197 198 199 200

Absolute Open Flow	1941	Mcfd @ 15.025	Angle of Slope θ	39	Slope, n	0.802
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 5/21/04

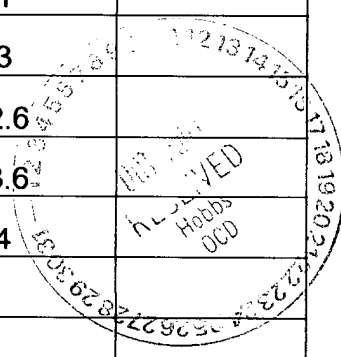
COMPANY Yates Petroleum Corporation LEASE Reed AXV WELL NO. 1

LOCATION: Unit K Section 12 Township 15S Range 34E

L 12968 H 12968 L/H 1.000 G 0.784 %CO₂ 0.701 %N₂ 0.848 %H₂S 0.000

d 2.992 Fr 0.006167 GH 10161.7 Pcr 667.2 Tcr 413.0

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	1.721	1.794	1.865	1.899	
2 Tw(W.H.°R)	520	520	520	520	
3 Ts(B.H.°R)	643	643	643	643	
4 T = (Tw+Ts) / 2	581.2	581.2	581.2	581.2	
5 Z (Est.)	0.711	0.732	0.776	0.836	
6 TZ	413.4	425.4	451.1	486.0	
7 GH / TZ	24.580	23.889	22.526	20.907	
8 e ^{As} (Table XIV)	2.514	2.449	2.327	2.190	
9 1-e ^{As} (Table XIV)	0.602	0.592	0.570	0.543	
10 Pt	1613.2	1313.2	1013.2	713.2	
11 P _t ² / 1000	2602.4	1724.5	1026.6	508.7	
12 Fr (Table XV)	0.006167	0.006167	0.006167	0.006167	
13 Fc = FrTZ	2.550	2.623	2.782	2.998	
14 FcQm	4.39	4.71	5.19	5.69	
15 L / H(FcQm) ²	19.3	22.2	26.9	32.4	
16 Fw = L / H(FcQm) ² (1-e ^{As})	11.60	13.12	15.36	17.61	
17 Pw ² = P _t ² +Fw	2614.0	1737.6	1041.9	526.3	
18 Ps ² = e ^{As} Pw ²	6570.3	4254.7	2424.3	1152.6	
19 Ps	2563.3	2062.7	1557.0	1073.6	
20 P = (Pt+Ps) / 2	2088.2	1687.9	1285.1	893.4	
21 Pr = (P / Pcr)	3.13	2.53	1.93	1.34	
22 Tr = (T / Tcr)	1.41	1.41	1.41	1.41	
23 Z (Table XI)	0.711	0.732	0.776	0.836	



Company
Well
Location

Yates Petroleum Corporation
Reed AXV #1
K 12-15S-34E

County
Date

Lee
5-21-04

Q, Mcfd

