

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

Form C-122
C. 151
F. 14

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 12/08/1993	
Company Yates Petroleum Corp				Connection Transwestern Pipeline Co	
Pool Abo				Formation Pecos Slope	
Completion Date 11/05/1993		Total Depth 4300		Plug Back TD 4243	
				Elevation 3799	
Farm or Lease Name Kilgore SO		Well No 3			
Csg Size 4.500	Wt 10.500	d 4.052	Set At 4299	Perforations From 3768 To 3920	
Tbg Size 2.375	Wt 4.700	d 1.995	Set At 3672	Perforations From 3768 To 3920	
Type Well Single				Packer Set At 3672	
Producing Thru Tubing		Resv. Temp. °F 102 @ 4280		Mean Temp. °F 62	
				Baro. Press. - Pa 13.2	
State New Mexico					
L 3672	H 3672	Gg 0.644	%CO ₂ 0.015	%N ₂ 4.794	%H ₂ S 0.000
Prover 0.000		Meter Run 3.000		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	Duration of Flow
SI	0.000	x	0.000	0	0.0	0	300	0			0
1	3.068	x	1.375	180	1.0	52	290	62			24
2	3.068	x	1.375	180	11.0	53	253	62			24
3	3.068	x	1.375	175	23.4	55	217	62			24
4	3.068	x	1.375	180	37.0	54	180	62			24
5		x									

RATE OF FLOW CALCULATIONS							
NO	Coefficient (24 Hour)	$\sqrt{hwP_m}$	Pressure P _m	Flow Temp. Factor F _t	Gravity Factor F _g	Super Compress Factor, F _{pv}	Rate of Flow Q, Mcfd
1	9.249	13.9	193.2	1.0078	1.246	1.018	164
2	9.249	46.1	193.2	1.0068	1.246	1.018	544
3	9.249	66.3	188.3	1.0048	1.246	1.017	781
4	9.249	84.5	193.2	1.0058	1.246	1.018	997
5							

NO	Pr	Temp °R	Tr	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
					0	
					A.P.I. Gravity of Liquid Hydrocarbons	0.000
					Specific Gravity Separator Gas	0.644
					Specific Gravity Flowing Fluid	XXXXXXXXXX
					Critical Pressure	662 P.S.I.A.
					Critical Temperature	357 °R
1	0.29	512	1.43	0.965		662 P.S.I.A.
2	0.29	513	1.44	0.966		357 °R
3	0.28	515	1.44	0.967		
4	0.29	514	1.44	0.966		
5						

Pc	313.2	Pc ²	98.1		
NO	P _t	P _w	P _w ²	P _c ² - P _w ²	
1	91.9	303.8	92.3	5.8	
2	70.9	273.5	74.8	23.3	

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 4.216$

(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 3.447$

$n = 1876$

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

DATE 12/08/1993

COMPANY Yates Petroleum Corp LEASE Kilgore SO WELL NO. 3

LOCATION: Unit K Section 24 Township 6S Range 25E

L 3672 H 3672 L/H 1.000 G 0.644 %CO₂ 0.015 %N₂ 4.794 %H₂S 0.000

d 1.995 Fr 0.017777 GH 2365.9 Pcr 662.5 Tcr 357.2

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	0.164	0.544	0.781	0.997	
2 Tw(W.H.°R)	522	522	522	522	
3 Ts(B.H.°R)	562	562	562	562	
4 T = (Tw+Ts) / 2	541.7	541.7	541.7	541.7	
5 Z (Est.)	0.954	0.959	0.963	0.968	
6 TZ	516.6	519.3	521.8	524.2	
7 GH / TZ	4.580	4.556	4.534	4.513	
8 e ^s (Table XIV)	1.187	1.186	1.185	1.184	
9 1-e ^s (Table XIV)	0.158	0.157	0.156	0.156	
10 Pt	303.2	266.2	230.2	193.2	
11 Pt ² / 1000	91.9	70.9	53.0	37.3	
12 Fr (Table XV)	0.017777	0.017777	0.017777	0.017777	
13 Fc = FrTZ	9.183	9.231	9.276	9.319	
14 FcQm	1.51	5.02	7.24	9.29	
15 L / H(FcQm) ²	2.3	25.2	52.5	86.3	
16 Fw = L / H(FcQm) ² (1-e ^s)	0.36	3.96	8.20	13.44	
17 Pw ² = Pt ² +Fw	92.3	74.8	61.2	50.8	
18 Ps ² = e ^s Pw ²	109.6	88.8	72.5	60.1	
19 Ps	331.0	297.9	269.3	245.2	
20 P = (Pt+Ps) / 2	317.1	282.1	249.8	219.2	
21 Pr = (P / Pcr)	0.48	0.43	0.38	0.33	
22 Tr = (T / Tcr)	1.52	1.52	1.52	1.52	
23 Z (Table XI)	0.954	0.959	0.963	0.968	

Company
Well
Location

Yates Petroleum Corp
Kilgore SO #3
K 24-6S-25E

County
Date

Chaves
12-08-1993

Q, Mcfd

