

NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR 3 WELL

Form C-122

Type Test: ☒ Initial ☐ Annual ☐ Special					Test Date: 08/21/2000	
Company: Yates Petroleum Corp			Connection: Agave Energy			
Pool: Morrow Wildcat			Formation: Wildcat Morrow			
Completion Date: 06/07/2000		Total Depth: 12977		Plug Back TD: 12800		Elevation: 4153
Farm or Lease Name: Hytech AUM State						
Csg Size: 5.500	Wt: 17.000	d: 4.892	Set At: 12977	Perforations: From 11706 To 11718		Well No: 1
Tbg Size: 2.875	Wt: 6.400	d: 2.441	Set At: 11648	Perforations: From 11706 To 11718		Unit: M Sec: 2 Twp: 10S Rge: 34E
Type Well: Single				Packer Set At: 11648		County: Lea
Producing Thru: Tubing		Resv. Temp. °F: 177 @ 11712		Mean Temp. °F: 62		Baro. Press. - Pa: 24.0
State: New Mexico						
L: 12977	H: 12977	Gg: 0.727	%CO ₂ : 0.836	%N ₂ : 1.900	%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
SI	0.000	x	0.000	0	0.0	0	1250	0			0
1	4.026	x	2.125	965	14.0	106	1175	62			24
2	4.026	x	2.125	965	30.0	103	1105	62			24
3	4.026	x	2.125	965	41.0	105	1035	62			24
4	4.026	x	2.125	965	53.0	105	965	62			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	22.600	117.7	989.0	0.9585	1.173	1.092	3265
2	22.600	172.2	989.0	0.9610	1.173	1.094	4801
3	22.600	201.4	989.0	0.9593	1.173	1.093	5595
4	22.600	228.9	989.0	0.9593	1.173	1.093	6362
5							

NO	Pr	Temp °R	Tr	Z	Gas Liquid Hydrocarbon Ratio	0	Mcft/bbl
					A.P.I. Gravity of Liquid Hydrocarbons	0.000	Deg
1.	1.48	566	1.45	0.839	Specific Gravity Separator Gas	0.727	XXXXXXXXXX
2.	1.48	563	1.44	0.835	Specific Gravity Flowing Fluid	XXXXXXXXXX	0.727
3.	1.48	565	1.44	0.837	Critical Pressure	668	P.S.I.A. 668
4.	1.48	565	1.44	0.837	Critical Temperature	391	°R 391
5.							

Pc	1274.0	Pc ²	1623.1
NO	Pr ²	Pw	Pw ²
1.	1437.6	1253.3	1570.7
2.	1274.6	1250.7	1564.2
3.	1121.5	1232.1	1518.0
4.	978.1	1222.4	1494.3
5.			

$$(1) \frac{Pc^2}{Pc^2 - Pw^2} = 15.441$$

$$AOF = Q \left[\frac{Pc^2}{Pc^2 - Pw^2} \right]^n = 43584$$

$$(2) \left[\frac{Pc^2}{Pc^2 - Pw^2} \right]^n = 7.789$$

Absolute Open Flow	43584	Mcfd @ 15.025	Angle of Slope θ	37	Slope, n	0.750
Remarks:						

Approved By Commission:	Conducted By: Paul Hanes	Calculated By: Dave Boneau	Checked By: Katie Brunson
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WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (Pw) C-122D

DATE 08/21/2000

COMPANY Yates Petroleum Corp LEASE Hytech AUM State WELL NO. 1

LOCATION: Unit M Section 2 Township 10S Range 34E

L 12977 H 12977 L/H 1.000 G 0.727 %CO₂ 0.836 %N₂ 1.900 %H₂S 0.000

d 2.441 Fr 0.010495 GH 9434.3 Pcr 668.0 Tcr 391.2

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	3.265	4.801	5.595	6.362	
2 Tw(W.H.°R)	522	522	522	522	
3 Ts(B.H.°R)	637	637	637	637	
4 T = (Tw+Ts) / 2	579.2	579.2	579.2	579.2	
5 Z (Est.)	0.794	0.797	0.802	0.806	
6 TZ	459.6	461.6	464.4	466.9	
7 GH / TZ	20.528	20.439	20.317	20.208	
8 e ^{-s} (Table XIV)	2.159	2.152	2.142	2.134	
9 1-e ^{-s} (Table XIV)	0.537	0.535	0.533	0.531	
10 Pt	1199.0	1129.0	1059.0	989.0	
11 Pt ² / 1000	1437.6	1274.6	1121.5	978.1	
12 Fr (Table XV)	0.010495	0.010495	0.010495	0.010495	
13 Fc = FrTZ	4.823	4.844	4.873	4.900	
14 FcQm	15.75	23.26	27.27	31.17	
15 L / H(FcQm) ²	247.9	540.9	743.5	971.6	
16 Fw = L / H(FcQm) ² (1-e ^{-s})	133.12	289.60	396.48	516.21	
17 Pw ² = Pt ² +Fw	1570.7	1564.2	1518.0	1494.3	
18 Ps ² = e ^{-s} Pw ²	3391.6	3366.3	3251.9	3188.2	
19 Ps	1841.6	1834.8	1803.3	1785.6	
20 P = (Pt+Ps) / 2	1520.3	1481.9	1431.1	1387.3	
21 Pr = (P / Pcr)	2.28	2.22	2.14	2.08	
22 Tr = (T / Tcr)	1.48	1.48	1.48	1.48	
23 Z (Table XI)	0.794	0.797	0.802	0.806	

Company Yates Petroleum Corp
Well Hytech AUM State #1
Location M 2-10S-34E

County Lea
Date 08-21-2000

Q, Mcfd

