

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

Form C-122
Revised 9-1-65

C/SF C-122

RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 7-1-81		SEP 1 1981			
Company Yates Petroleum Corporation				Connection Yates Petroleum Corporation					
Pool Wildcat <i>Miss</i>				Formation Mississippi					
Completion Date 6-11-81		Total Depth 10,000		Plug Back TD 9560		Elevation 3653 KB		Unit O. C. D. ARTESIA, OFFICE	
Case Size 5 1/2	Wt. 17#	d 4.892	Set At 9969	Perforations: From 9250 To 9352		Well No. 2			
Thq. Size 2 7/8	Wt. 6.5#	d 2.441	Set At 9215	Perforations: From To		Unit Sec. Twp. Rye. L 11 19S 24E			
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single				Packer Set At 9215		County Eddy			
Producing Thru Tubing		Reservoir Temp. °F 152 @ 9300		Mean Annual Temp. °F 62		Baro. Press. - P _a 13.2		State New Mexico	
L 9291	H 9291	Cg 0.5811	% CO ₂ 1.70	% N ₂ 1.22	% H ₂ S 0.26	Prover -----	Meter Run 3	Taps Flanged	

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow	
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h _w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.		Temp. °F
SI							3364	88			Days
1.	3.068 X 1.500			436	10	60	3202	90			30 hrs.
2.	3.068 X 1.500			482	17	60	2855	89			48 hrs.
3.	3.068 X 1.500			530	24	70	2437	88			48 hrs.
4.	3.068 X 1.500			580	33	70	2178	87			48 hrs.
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor F _t	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	11.13	67.02	449.2	1.000	1.3118	1.0342	1012
2	11.13	91.75	495.2	1.000	1.3118	1.0383	1391
3	11.13	114.18	543.2	0.9905	1.3118	1.0389	1715
4	11.13	133.89	593.2	0.9905	1.3118	1.0426	2019
5							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
1	0.660	520	1.507	0.9350	A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
2	0.724	520	1.507	0.9275	Specific Gravity Separator Gas 0.5811
3	0.798	530	1.536	0.9265	Specific Gravity Flowing Fluid 681
4	0.871	530	1.536	0.9200	Critical Pressure 681.2 P.S.I.A.
5					Critical Temperature 345 R

P _c 4107.2 P _c ² 16871		$(1) \frac{P_c^2}{P_c^2 - P_w^2} = 1.7857$		$(2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.3364$	
NO	P _r ²	P _w	P _w ²	P _c ² - P _w ²	
1			15376	1495	
2			12375	4496	
3			9120	7751	
4			7323	9448	
5					

Absolute Open Flow 2698 Mcfd @ 15.025		Angle of Slope 60.47 deg.		Slope, n 0.5002	
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Remarks: Static pressures by Bennett Wireline Company flowing pressures by DWT. Calculations worksheet C122D attached.

Approved By Commission:	Conducted By: Danny Matthews	Calculated By: Eddie Mahfood	Checked By:
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WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

C-122D
Adopted 9-1-65

COMPANY YPC LEASE Davis No WELL NO. 2 DATE 7-1-81

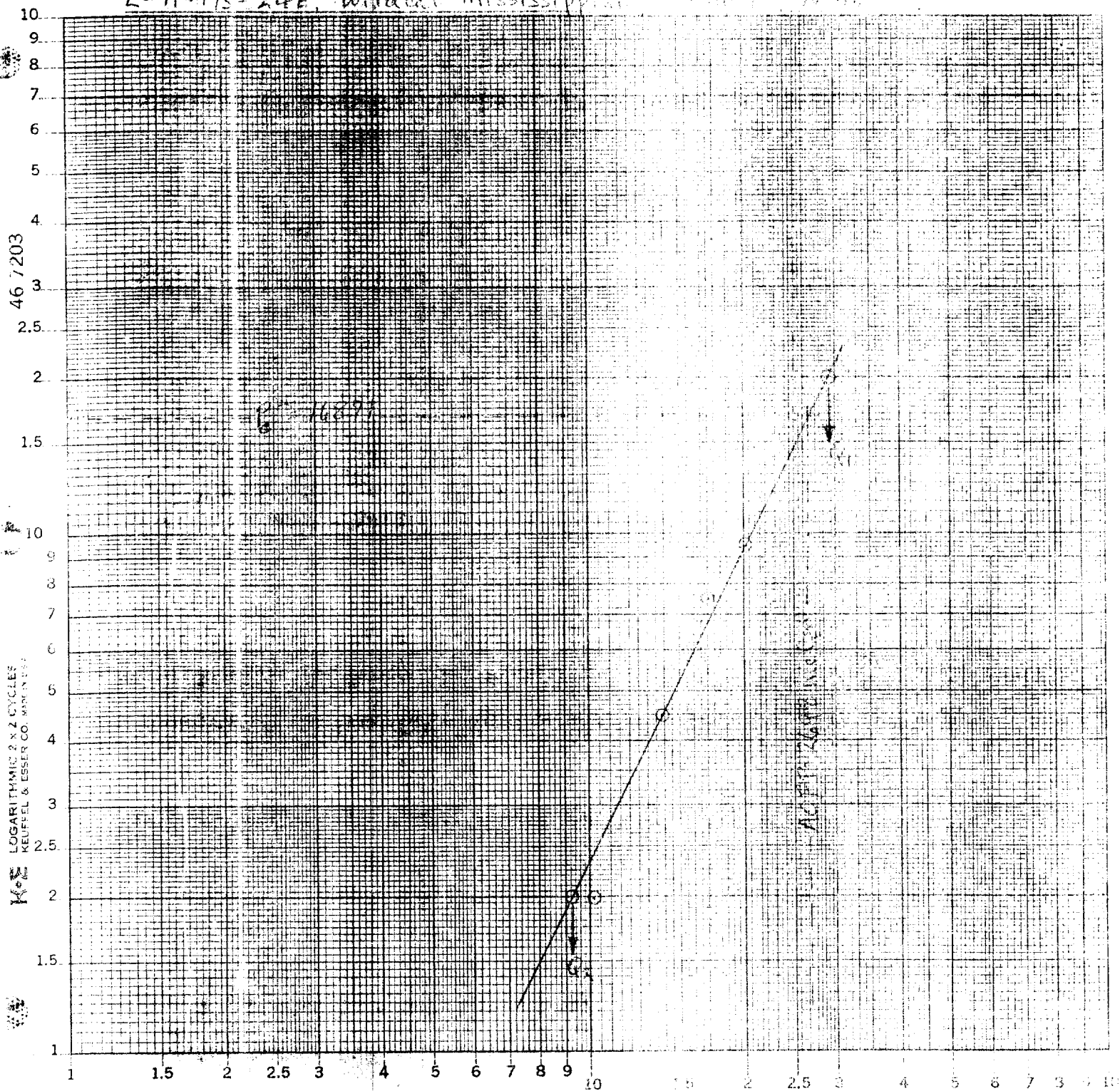
LOCATION: Unit L Section 11 Township 19 S Range 24 E

L 9291 H 9291 L/H 1.000 G 0.5811 % CO₂ 1.70 % N₂ 1.22 % H₂S 0.26
 9211(5858)=53958
 80(2343)=1914
 9291(6.0134)=55072
 d 2.4523 F_r 0.009755 GH 5399 P_{CT} 681.2 T_{CT} 345.0

LINE	SI	1	2	3	4	1	2	3	4
1 Q _m	—	1.012	1.391	1.715	2.019	1.012	1.391	1.715	2.019
2 T _w (W.H. °R)	548	550	549	548	547				
3 T _s (B.H. °R)	612	610	608	607	606	610			
4 T = $\frac{(T_w + T_s)}{2}$	580	580	578.5	577.5	576.5	580	578.5	577.5	576.5
5 Z (Est.)	0.8915	0.881	0.860	0.846	0.845		0.861		
6 TZ	517.07	510.98	497.51	488.565	487.142		498.089		
7 GH/TZ	10.4415	10.5660	10.8520	11.0507	11.0830		10.8394		
8 e ^s (Table XIV)	1.47927	1.4862	1.5022	1.51346	1.5153		1.5015		
9 1-e ^s (Table XIV)		0.5291	0.53343	0.5393	0.5401		0.5340		
10 P ₁	3372.2	3215.2	2862.2	2450.2	2191.2		2362.2	2150.2	1910.2
11 P ₂ = 1000	11465.4	10379.5	8226.6	6663.5	5361.4		8226.6		
12 P ₃ = (Table XV)	8.341.5	6.346.22	5.406.95	4.414.40	3.415.61		5.406.95		
13 P ₄ = P ₁ TZ		4193.46	4.08532	4.0664	4.052		4.08532		
14 F ₀ Q _m		5.044	6.7502	8.174	9.594		6.7537		
15 L/H (F ₀ Q _m) ²		25.45	45.57	66.81	92.053		45.68		
16 F _w = L/H (F ₀ Q _m) ² (1-e ^{-s})		8.3	15.2	22.7	31.3		15.3		
17 P _w ² = P ₁ ² + F _w		10345.08	8241.8	6026.2	4832.7		8241.9		
18 P _s ² = e ^s P _w ²	16871.6	15375.9	12326.6	9126.4	7323.0		12375.2		
19 P _s	4107.2	3921.2	3518.6	3026.0	2706.1		3517.8		
20 P = $\frac{(P_1 + P_s)}{2}$	3742.2	3568.2	3193.4	2735.0	2448.7		3193.0		
21 P _r = (P/P _{cr})	5.494	5.238	4.628	4.015	3.595		4.687		
22 T _r = (T/T _{cr})	1.6812	1.681	1.677	1.674	1.671		1.677		
23 Z (Table XI)	0.8915	0.881	0.861	0.846	0.845		0.861		

YPC- Davis NC #2

L-11-195-24E, Wildcat Mississippi



$Q = 2917 \text{ mcfpd}$

$\log Q_1 = 3.4647$

$Q_2 = 922 \text{ mcfpd}$

$\log Q_2 = 2.9647$

$n = 0.5$