

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

Form C-122
Revised 9-1-63

RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 1 - 2 - 81		FEB 25 1981	
Company Yates Petroleum Corporation ✓				Connection Transwestern Pipeline Co.		O. C. O. ARTES-10-1-1	
Pool Boyd Morrow				Formation Morrow		Unit	
Completion Date 10-31-81		Total Depth 9160		Plug Back To 9080		Elevation 3506 KB	
Farm or Lease Name Gushwa DR Cont							
Case Size 4 1/2	Wt. 11.6#	d 4.000	Set At 9130KB	Perforations: From 9012 To 9020 KB		Well No. 3	
Thq. Size 2 3/8	Wt. 4.7#	d 1.995	Set At 8988KB	Perforations: From To		Unit Sec. Twp. Rye. F 35 18S 25E	
Type Well - Single - Bradenhead - G.C. or G.O. Multiple Single				Packer Set At 8988 KB		County Eddy	
Producing Thru Tubing		Reservoir Temp. °F 147 # 9016		Mean Annual Temp. °F 62		Baro. Press. - P _a 13.2	
State New Mexico							
L 9010	H 9010	G _g .630	% CO ₂ 0.99	% N ₂ 0.35	% H ₂ S N.7	Prover ---	Meter Run 2"
						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							2450	55			Days
1.	2.067	X	1.250	370	14	71	2372	61			7 hrs.
2.	2.067	X	1.250	370	27	71	2303	66			14 hrs.
3.	2.067	X	1.250	375	48	70	2173	70			24 hrs.
4.	2.067	X	1.250	380	79	69	2001	73			24 hrs.
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor F _g	Super. Compress. Factor, F _{pv}	Rate of Flow Q, Mc/d
1	8.120	73.24	383.2	.9896	1.278	1.033	777
2	8.120	101.72	383.2	.9896	1.278	1.033	1079
3	8.120	136.50	388.2	.9905	1.278	1.034	1451
4	8.120	176.25	393.2	.9915	1.278	1.034	1875
5							

NO.	P _f	Temp. °R	T _f	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1	0.575	531	1.471	.9370	176.0	
2	0.575	531	1.471	.9370	50.5	
3	0.582	530	1.468	.9355	0.612	XXXXXXX
4	0.590	529	1.465	.9345	XXXXX	0.630
5					667	674
					361	366

NO.	P _f	P _w	R _w	P _c ² - R _w ²	(1) $\frac{P_c^2}{R_c^2 - R_w^2} =$	(2) $\left[\frac{P_c^2}{R_c^2 - R_w^2} \right]^n =$
1		3509.1	12314	683	3.6013	1.9741
2		3424.9	11730	1267		
3		3268.6	10684	2313		
4		3064.0	9388	3609		
5						

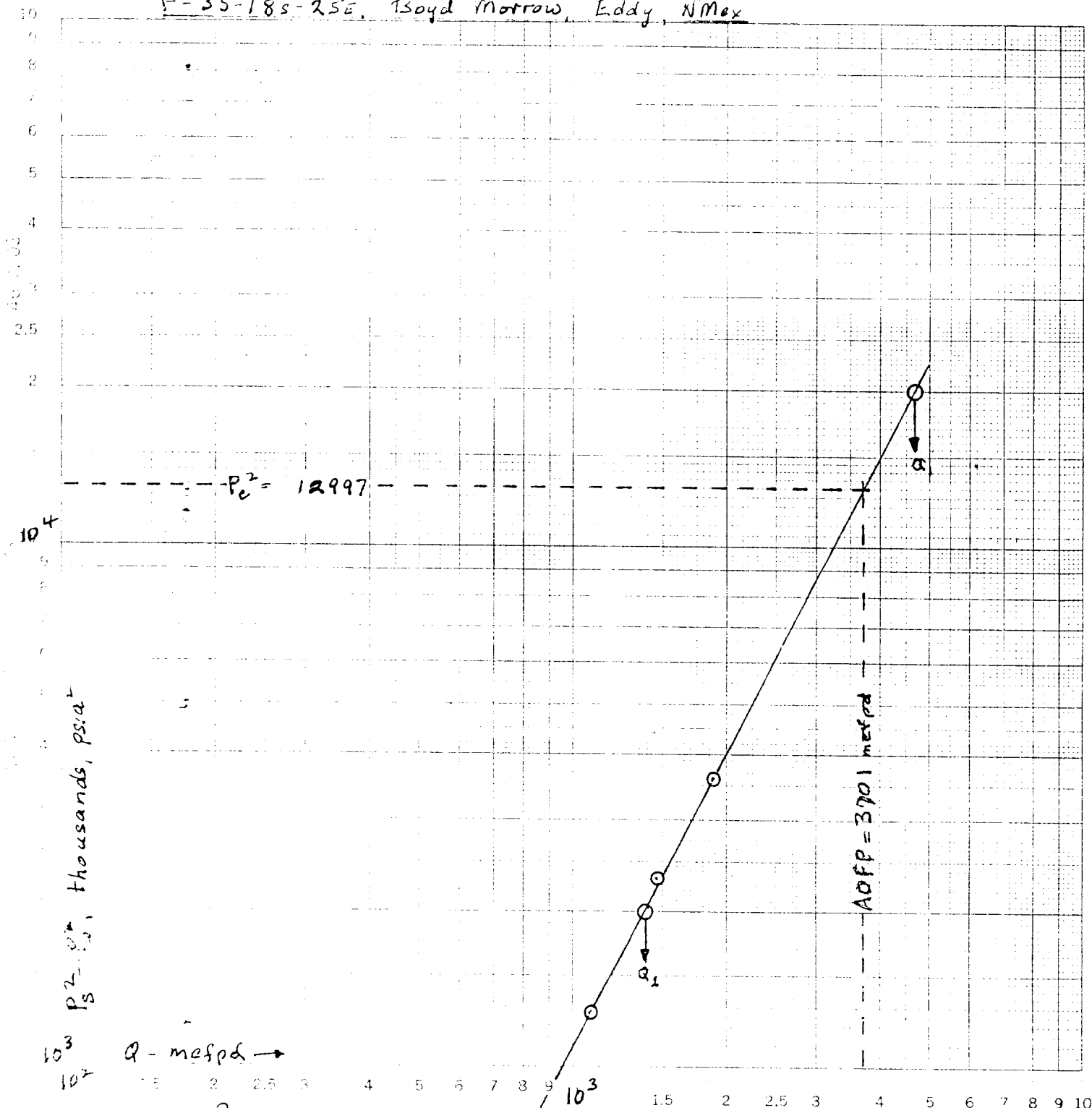
Absolute Open Flow <u>3701</u> Mc/d @ 15.025				Angle of Slope θ <u>62 deg.</u>		Slope, n <u>0.5308</u>	
--	--	--	--	--	--	------------------------	--

Remarks: Static pressures by Bennett Wireline, flowing pressures by DWT. Calculations worksheet C112D attached.

Approved By Commission:	Conducted By: Don Weaver	Calculated By: Eddie Mahfood	Checked By:
-------------------------	-----------------------------	---------------------------------	-------------

YPC - Gushwa DR Com #3

F-35-18s-25E, Boyd Morrow, Eddy, NMex



$Q_1 = 4680 \text{ mcfpd}$

$Q_2 = 1385 \text{ mcfpd}$

$\log Q_1 = 3.6702$

$\log Q_2 = 3.1414$

$\therefore 0.5308$

COMPANY LEASE WELL NO. DATE

LOCATION: Unit Section Township Range

L H L/H G % CO₂ % N₂ % H₂S

d F GH P_{cr} T_{cr}

TABLE IX & X

LINE	S1	1	2	3	4				
1 Q _m	-	0.777	1.079	1.451	1.875				
2 T _w (M.H. 9B)	515	520	526	530	533				
3 T _s (B.H. 9B)	607	606	605	604	603				
4 T = (T _w + T _s)	561	563.5	565.5	567	568				
5 S (B.H.)	1741	1792	1840	1883	1921				
6 T ₂	443.75	446.05	448.16	449.65	450.12				
7 Q _{H/T2}	10.9602	10.9036	10.8493	10.7969	10.7451				
8 P ₂ (Table XIV)	1.50834	1.50115	1.49396	1.48675	1.47954				
9 1 - P ₂ (Table XIV)									
10 P ₁	2465.2	2522.2	2579.2	2636.2	2693.2				
11 P ₁ 2/1000	6067.4	6261.2	6455.0	6648.8	6842.6				
12 F ₁ (Table XV)	0.41101	0.40885	0.40672	0.40460	0.40248				
13 F ₁ = F ₁ T ₂		7.3688	7.3484	7.3279	7.3074				
14 F ₁ Q _m		5.7256	7.4534	10.778	14.005				
15 L/H (F ₁ Q _m) ²		32.782	65.735	116.16	196.13				
16 F ₁ = L/H (F ₁ Q _m) ² (1-e ⁻⁵)		11.0	21.3	38.7	63.1				
17 P _w ² = P ₁ ² + F ₁ ²		5700.2	5386.1	4812.2	4122.1				
18 P _s ² = e ⁻⁵ P _w ²		915.6	857.9	784.3	617.4				
19 P _s 7720		3025.2	2929.1	2844.9	2762.6				
20 P = (P ₁ + P _s)		2744.2	2657.2	2580.5	2437.4				
21 P ₁ = (P/P _{cr})		4.071	3.942	3.829	3.616				
22 T ₁ = (T/T _{cr})		1.533	1.540	1.545	1.549				
23 Z (Table XI)		0.791	0.742	0.793	0.796				
24 Z _{0.01}		260.2	249.4	241.9	234.4				