NEW MEXICO OIL CONSERVATION COMMISSION

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

RECEIVED
DEC 5 1980
O. C. D.
ARTESIA, OFFICE

Type Test: [X] Initial [ ] Annual [ ] Special				Test Date: 10-9-80	
Company: Yates Petroleum Corporation		Connection: Transwestern Pipeline Company			
Pool: ~~Wildcat~~ Undesignated Abo		Formation: Abo		Unit: ~~NM 11799~~	
Completion Date: 6-27-80	Total Depth: 5200 KB	Plug Back TD: 5078 KB	Elevation: 3875 KB	Farm or Lease Name: Hahn NH Federal	
Csg. Size: 5½" / Wt.: 14# / d: 5.012 / Set At: 5078 KB		Perforations: From 4024 To 4030 KB		Well No.: 1	
Tbg. Size: 2 7/8" / Wt.: 6.5 / d: 2.441 / Set At: 3970 KB		Perforations: From To		Unit: ~~O~~ I / Sec.: 9 / Twp.: 7S / Rge.: 25E	
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single		Packer Set At: 3970		County: Chaves	
Producing Thru: Tubing	Reservoir Temp. °F: 102 @ 4027	Mean Annual Temp. °F: 62	Baro. Press. – P_a: 13.2	State: New Mexico	
L: 4022	H: 4022	Gg: 0.649	% CO_2: 0.16	% N_2: 4.82	% H_2S: N.7
Prover: -----	Meter Run: 2"	Taps: Flanged			

FLOW DATA / TUBING DATA / CASING DATA

NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Tubing Press. p.s.i.g.	Tubing Temp. °F	Casing Press. p.s.i.g.	Casing Temp. °F	Duration of Flow
SI							965	72			Weeks
1.	2.067	x	0.875	530	13	75	864	75			1 hour
2.	2.067	x	0.875	531	26	75	796	77			1 hour
3.	2.067	x	0.875	531	49	75	716	78			1 hour
4.	2.067	x	0.875	532	91	75	587	79			1 hour
5.											

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	3.729	84.03	543.2	.9859	1.241	1.046	293
2	3.729	118.95	544.2	.9859	1.241	1.046	415
3	3.729	163.30	544.2	.9859	1.241	1.046	570
4	3.729	222.74	545.2	.9859	1.241	1.046	778
5							

NO.	P_t	Temp. °R	T_r	Z
1	0.821	535	1.482	.9143
2.	0.822	535	1.482	.9142
3.	0.822	535	1.482	.9142
4.	0.823	535	1.482	.9141
5				

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas 0.649 XXXXXXXXXX
Specific Gravity Flowing Fluid XXXXX 0.649
Critical Pressure 662 P.S.I.A. 698 P.S.I.A.
Critical Temperature 361 R 374 R

P_c 1087.2 P_c^2 1182

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1			947	235
2			804	378
3			652	530
4			441	741
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.5951$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.5391$

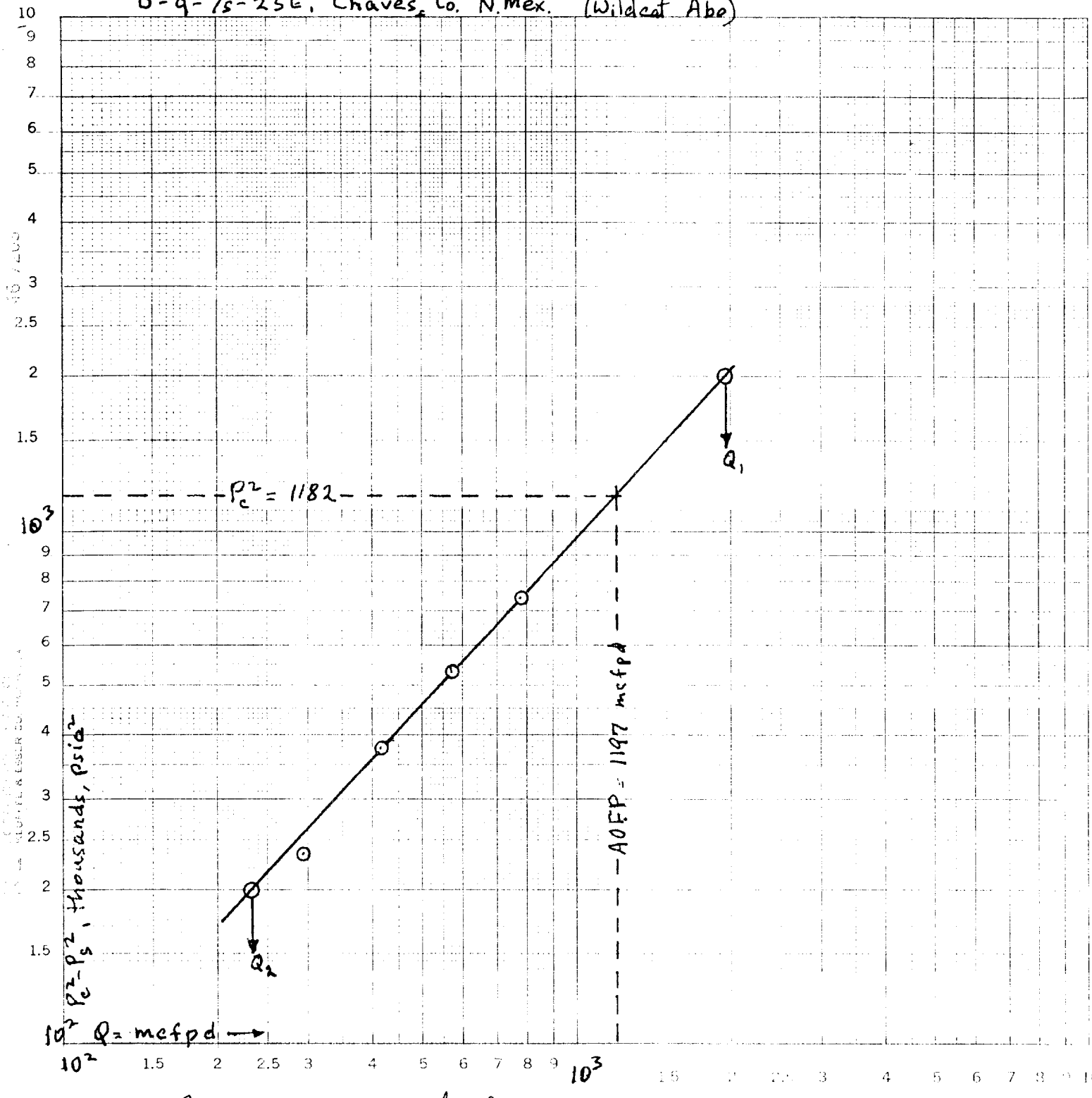
AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1197$

Absolute Open Flow 1197 Mcfd @ 15.025 Angle of Slope θ 47.3 deg. Slope, n 0.9234

Remarks: Static pressures by Bennett Wireline. Flowing pressures by DWT.
Calculations worksheet C122D attached.

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

YPC- Hahn NH Federal No. 1
0-9-7S-25E, Chaves Co. N. Mex. (Wildcat Abo)



$Q_1 = 1945$ mcfpd $\log Q_1 = 3.2889$

$Q_2 = 232$ mcfpd $\log Q_2 = 2.3655$

$n = 0.9234$

WORKSHEET FOR CALCULATION OF ST. IC COLUMN WELLHEAD PRESSURE (P_w)

C-122D
Adopted 9-1-65

COMPANY YPC LEASE Hahn NH Federal WELL NO. 1 DATE 10-9-80

LOCATION: Unit C Section 9 Township 7-S Range 25E

L 4023 H 4023 L/H 1.000 G 0.649 % CO_2 0.16 % N_2 4.52 % H_2S NIL

2% 34.5 (5.958) = 23625
1/2 38(25.14) = 1457
4023(6.2347) 25082

d 2.4969 F_r 0.009309 GH 2610.9 1.12% H_2O P_{cr} 698 (TABLE IX & X) T_{cr} 374 (TABLE IX & X)

LINE	S1	1	2	3	4					
1 Q_m	-	0.293	0.415	0.570	0.778					
2 T_w (W.H. °R)	532	535	537	538	539					
3 T_s (B.H. °R)	563	563	562	562	562					
4 $T = (\frac{T_w + T_s}{2})$	547.5	549	549.5	550	550.5					
5 Z (Est.)	0.847	0.863	.873	.885	.904					
6 TZ	463.73	473.79	479.71	486.75	497.65					
7 GH/TZ	5.6303	5.5107	5.4427	5.3639	5.2464					
8 e^S (Table XIV)	1.2351	1.2295	1.2264	1.2228	1.2174					
9 $1 - e^{-S}$ (Table XIV)		0.1867	0.1846	0.1822	0.1786					
10 P_t	973.2	877.2	809.2	729.2	600.2					
11 $P_t^2/1000$	956.9	769.48	654.80	531.73	360.2					
12 F_t (Table XV) S=.0378 $\frac{4^{th}}{}$	0.21114	0.20665	0.20410	0.20115	0.19674					
13 $F_c = F_t$ TZ		4.4105	4.4656	4.5312	4.633					
14 $F_c Q_m$		1.2923	1.8532	2.583	3.604					
15 L/H $(F_c Q_m)^2$		1.670	3.4345	6.670	12.99					
16 F_w=L/H$(F_c Q_m)^2(1-e^{-S})$		0.31	0.63	1.22	2.3					
17 $P_w^2 = P_t^2 + F_w$		769.79	655.43	532.95	362.5					
18 $P_s^2 = e^S P_w^2$	1181.9	946.5	803.8	651.7	441.3					
19 P_s	1087.2	972.9	896.6	807.3	664.3					
20 $P = (\frac{P_t + P_s}{2})$	1032.7	925.0	852.9	768.2	632.2					
21 $P_r = (P/P_{cr})$	1.492	1.325	1.222	1.101	0.906					
22 $T_r = (T/T_{cr})$	1.4631	1.468	1.469	1.4705	1.472					
23 Z (Table XI)	0.847	0.863	0.873	0.885	0.904					