

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

c/sf
File
Form C-122
Revised 9-1-65

Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 10/19/82	
Company Yates Petroleum Corporation				Connection Transwestern Pipeline			
Pool Pecos Slope - Abo Gas				Formation Abo		Unit	
Completion Date 5/6/82		Total Depth 4025'		Plug Back TD 3948'		Elevation 4004' GL	
Farm or Lease Name Monaghan "QY" Federal							
Csg. Size 4 1/2"	Wt. 9.5#	d 4.090	Set At 3998'	Perforations: From 3552 To 3745		Well No. 4	
Tub. Size 2 3/8"	Wt. 4.7#	d 1.995	Set At 3484'	Perforations: From To		Unit Sec. Twp. Rge. C 21 5S 24E	
Type Well - Single - Provenhead - G.G. or G.O. Multiple Single				Packer Set At 3484'		County Chaves	
Producing thru Tubing		Reservoir Temp. °F 103 @ 3490'		Mean Annual Temp. °F 62		Boro. Press. - P _g 13.2 psi	
State New Mexico							
L 3484'	H 3484'	G _g .644	% CO ₂ .04	% N ₂ 5.45	% H ₂ S 0	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.	
SI							994			
1.	2.067 x 1.250			300	9.6	72	823	62		
2.	2.067 x 1.250			310	12.8	72	781	62		
3.	2.067 x 1.250			330	17.2	72	718	62		
4.	2.067 x 1.250			370	23.0	72	630	62		
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, Mgd
1	8.120	54.9	313.2	.9887	1.246	1.025	563
2	8.120	64.4	323.2	.9887	1.246	1.027	662
3	8.120	76.7	343.2	.9887	1.246	1.028	789
4	8.120	93.9	383.2	.9887	1.246	1.032	969
5							

NO.	P _t	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Meq/bsl.
1	.47	532	1.49	.951	Dry	
2	.49	532	1.49	.949	A.P.I. Gravity of Liquid Hydrocarbons	--
3	.52	532	1.49	.946	Specific Gravity Separator Gas	.644
4	.58	532	1.49	.939	Specific Gravity Flowing Fluid	.644
5					Critical Pressure	661 P.S.I.A.
					Critical Temperature	358 R

NO.	P _t	P _w	P _w ²	P _c ² - P _w ²
1	699.2		703.1	311.4
2	630.8		636.1	378.4
3	534.7		542.4	472.1
4	413.7		425.6	588.9
5				

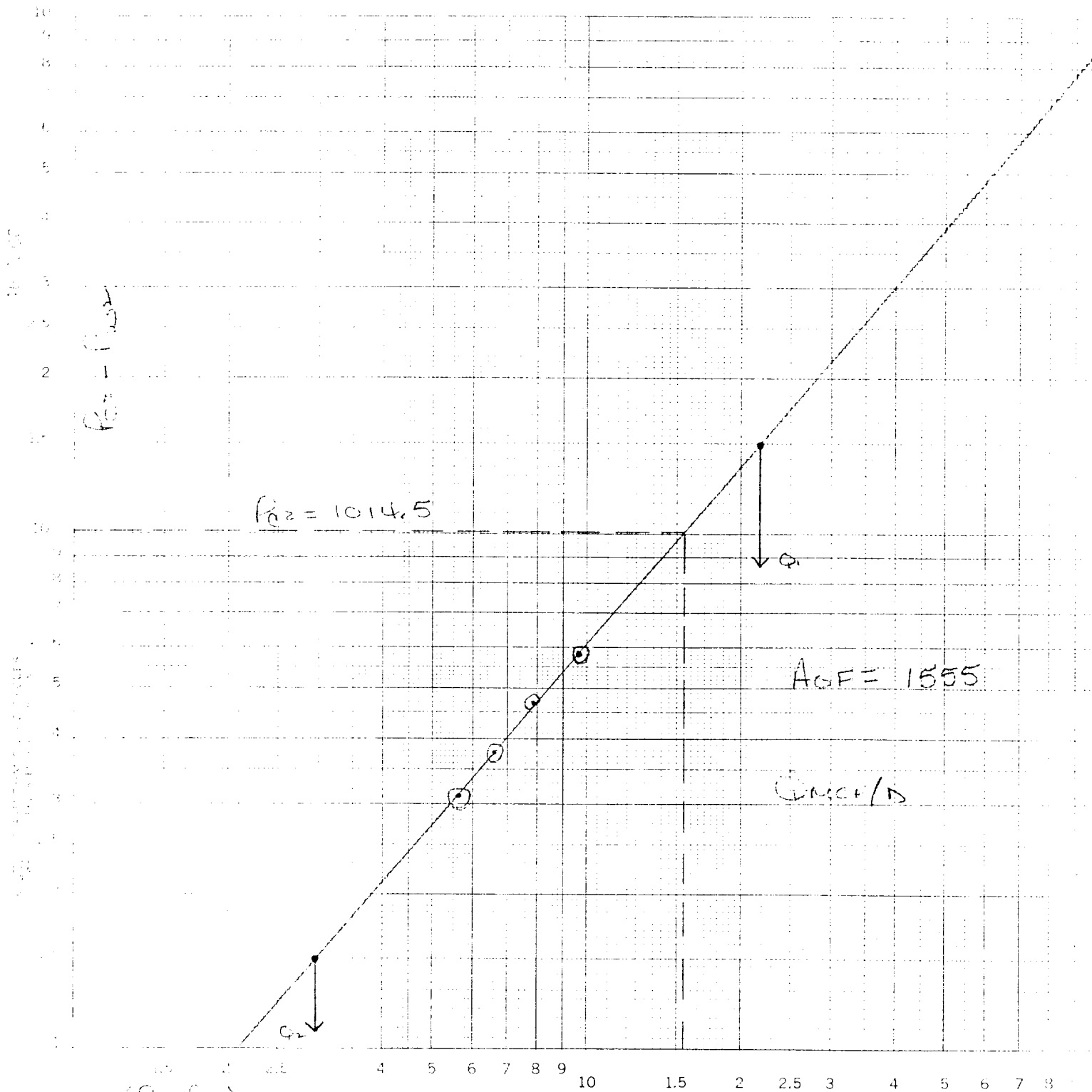
(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.723$

ADP = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1555$

(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.605$

Absolute Open Flow	1555	Mgd @ 15.025	Angle of Slope θ	Slope, n .870
Remarks:				
Approved by Commission:	Conducted By: David Weaver	Calculated By: Andie Alderson	Checked By:	

Unit Hydrograph
 Discharge in ft³/sec
 Unit = 1 in = 2.54 cm
 Water Quality



$$(Q_1 - Q_2)_1 = 1500$$

$$(Q_1 - Q_2)_2 = 150$$

$$Q_1 = 2180$$

$$Q_2 = 2914$$

$$\log Q_1 = 3.33846$$

$$\log Q_2 = 2.46835$$

$$n = 0.87011 = 0.870$$

LOCATION: Unit _____ Section _____ Township _____ Range _____

d 1.200 F 1.200 CH 2.200
 P 1.200 T 1.200
 TABLE 6.1

LINE									
1	Q_m	1.57	2.57					1174	
2	T_w (W.H. °R)	522	522					469	
3	T_s (B.H. °R)	563	563					522	
4	$T = (\frac{1}{2}T_w + \frac{1}{2}T_s)$	542.5	542.5					542.5	
5	Z (Est.)	.837	.837					.764	
6	TZ	476.86	479.57					490.12	
7	CH/TZ	4.793	4.677					4.576	
8	e^s (Table XIV)	1.193	1.172					1.134	
9	$1-e^s$ (Table XIV)	.162	.161					.158	
10	P_t	236.2	794.2					613.2	
11	$P_t/1000$	679.2	679.2					413.7	
12	F_t (Table XV)	.0182	.0182					.0171	
13	$F_c = F_t/TZ$	.0697	.0697					.0697	
14	$F_c Q_m$	4.874	4.874					4.874	
15	$L/H (F_c Q_m)^2$	27.003	27.003					27.003	
16	$F_w = L/H (F_c Q_m)^2 (1-e^s)$	2.820	2.820					11.003	
17	$P_w^2 = P_t^2 + F_w$	713.1	713.1					475.6	
18	$F_s^2 = e^s P_w^2$	838.8	750.7					505.1	
19	F_s	915.7	866.8					706.7	
20	$F = (\frac{1}{2}F_t + \frac{1}{2}F_s)$	876.0	833.5					651.0	
21	F_t/P_t	1.33	1.33					1.32	
22	$T_r = (T/T_c)$	1.57	1.57					1.52	
23	Z (Table XI)	.837	.837					.764	