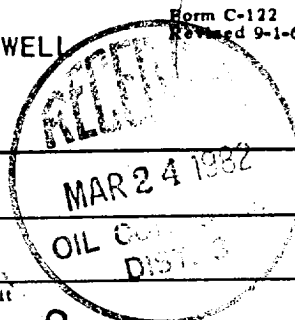


NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 3/9/82					
Company CONOCO INC.				Connection NEW					
Pool Otero Ranch				Formation Picture Cliff					
Completion Date 9/28/81		Total Depth 2550		Plug Back TD 2549		Elevation 6676' A.L.		Farm or Lease Name N.E. HAYNES	
Csg. Size 3 1/2	Wt. 9.3*	d 2.992	Set At 2549	Perforations: From 2383 To 2456		Well No. # 12			
Thg. Size	Wt.	d	Set At	Perforations: From To		Unit 0	Sec. 16	Twp. 24N	Rge. 5W
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single-Gas				Packer Set At None		County Rio Arriba			
Producing Thru Csg.		Reservoir Temp. °F 92° @ 2400'		Mean Annual Temp. °F 65°		Baro. Press. - P _a 12.2		State N.M.	
L 2337'	H 2337'	Gg .670	% CO ₂	% N ₂	% H ₂ S	Prover 3/4" C.N.	Meter Run	Taps	

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	S.I. 7 DAYS								409*		S.I.
1.									132*	56°	3 hours
2.											
3.											
4.											
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	9.604		144.2	1.004	1.222	N/A	1699.1
2.							
3.							
4.							
5.							

NO.	P _f	Temp. °R	T _f	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.			
					A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.			
					Specific Gravity Separator Gas _____ X X X X X X X X			
					Specific Gravity Flowing Fluid _____ X X X X X			
					Critical Pressure _____ P.S.I.A. _____ P.S.I.A.			
					Critical Temperature _____ R _____ R			

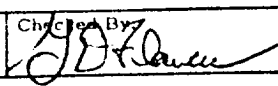
P _c 421.2	P _c ² 177409.44	$(1) \frac{P_c^2}{P_c^2 - P_w^2} = \frac{1.019}{1.019 - 0.000} \quad (2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \frac{1.016}{1.016 - 0.000}$	
NO.	P _f	P _w	P _w ²
1	20793.6	3338.43	174071
2			
3			
4			
5			

$$AOF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \underline{1726.}$$

$$AOF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \underline{1726.}$$

Absolute Open Flow 1726. Mcfd @ 15.025		Angle of Slope @ _____	Slope, n .85
---	--	------------------------	---------------------

Remarks: **Fc 3.262, 1° 53' .108, G.L. 1565.7, 13.0' K.B.**

Approved by Commission:	Conducted By: R.A. Farmer	Calculated By: R.A. Farmer	Checked By: 
-------------------------	-------------------------------------	--------------------------------------	--

PRESSURE @ 2399' in P.S.I.G.

$P_{1Hr} = 303.8 \text{ P.S.I.G.}$
 $m = 4.5 \text{ PSI/CYCLE}$

$(T + \Delta t) / \Delta t$

7 DAY BUILDUP IN HAYNES #12
 Otero Ranch / Picture Cliff
 3 1/2" CSG, 9.3", 2.992 I.D. (NOT BOND)

46 5506

K-S SEMI-LOGARITHMIC • 3 CYCLES X 70 DIVISIONS
 KEUFFEL & ESSER CO. MADE IN U.S.A.

CONTINENTAL OIL COMPANY
BOTTOM-HOLE PRESSURE BUILDUP DATA

PAGE 1

Date 3/19/1981
Well N.E. HAYNES # 12 Field Otero Ranch
Producing Formation Picture Cliffs Perfs 2350-2456 Casing Point 2550'
Net Pay Thickness _____ Pay Zone 2383-2456 Average Porosity _____
Crude Gravity at 60° F. _____ Bottom Hole Temp. 92° Bottom Hole Crude Gravity _____
Fluid Gradient See Gradient Report Sp. Gr. Gas in Well .670 Producing B.H.P. 269.2[#]
Cumulative Production 31.8 Oil Compressibility _____

Date	Barrels Oil	Barrels Water	Total Fluid
7/28/81	.1	.1	.2
3/9/82	.1	.1	.2

Avg. Stabilized Producing Rate = R - .2 BF/D

$$t = 1440 \frac{\text{Cum}}{R} = 1440 \frac{31.8}{.2} = 159 \text{ Min.}$$

t = Time, min. 228,960.

Cum = Cumulative Fluid Production, Bbl.
31.8

Date	Time	Δt	t + Δt	$\frac{t + \Delta t}{\Delta t}$ $\frac{t}{\Delta t}$	Fluid Level Feet Below Surface	Fluid Level Above Pay	Fluid Level @ Pay PSI	Extension (Inches)	Gas Column Weight PSI	Total Bottom Hole Press. PSIG
3/2/82	12:00PM	0	228,960	9.99				.221		275.6
	1:00	60	229,020	3817				.243		303.8
	2:00	120	229,080	1909				.251		314.1
	3:00	180	229,140	1273				.256		320.5
	4:00	240	229,200	955				.259		324.4
	5:00	300	229,260	764				.262		328.2
	6:00	360	229,320	637				.265		332.1
	12:00AM	720	229,680	319				.276		346.2
	6:00	1080	230,040	213				.283		355.1
3/3/82	12:00P	1440	230,400	160				.287		360.3
	6:00	1800	230,760	128.2				.292		366.7
	12:00	2160	231,120	107				.295		370.5
3/4/82	12:00P	2880	231,840	80.5				.301		378.2
	12:00A	3600	232,560	64.6				.305		383.3
3/5/82	12:00P	4320	233,280	54				.308		387.2
	12:00A	5040	234,000	46.4				.312		392.2
3/6/82	12:00P	5760	234,720	40.7				.315		396.2
	12:00A	6480	235,440	36.3				.318		400.0
3/7/82	12:00P	7200	236,160	32.8				.320		402.6
	12:00A	7920	236,880	29.9				.322		405.1
3/8/82	12:00P	8640	237,600	27.5				.324		407.7

PAGE 2

Date _____

Well N.E. HAYNES IIY Field

Producing Formation	Perfs	Casing Point

Net Pay Thickness	Pay Zone	Average Porosity
-------------------	----------	------------------

Crude Gravity at 60° F. _____ Bottom Hole Temp. _____ Bottom Hole Crude Gravity _____

Fluid Gradient _____ Sp. Gr. Gas in Well _____ Producing B.H.P. _____

Cumulative Production Oil Compressibility

[illegible]

Avg. Stabilized Producing Rate = R - BF/D

$$t = 1440 \frac{C_{um}}{R} = 1440 \frac{\quad}{\quad} = \quad \text{Min.}$$

t = Time, min.

Cum = Cumulative Fluid Production, Bbl.

[illegible]