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C-122

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

Form C-122
Revised 9-1-65

RECEIVED
FEB 22 19[illegible]
ARTESIA, OFFICE

Type Test: ☐ Initial ☐ Annual ☐ Special	Test Date: 2-12-74				
Company: Morrison Oil & Gas Co.	Connection: Natural Gas Pipeline Co. of America				
Pool: Grayburg	Formation: Morrow			Unit:	
Completion Date: 8-16-73	Total Depth: 10,890'	Plug Back TD: 10,870'	Elevation: 3571'	Farm or Lease Name: State 28	
Csg. Size: 5½" / Wt. / d / Set At: 10,870'	Perforations: From 10,709' To 10,722'			Well No.: 2	
Tbg. Size: 2 1/16" / Wt. / d / Set At: 10,658'	Perforations: From To			Unit: K / Sec.: 28 / Twp.: 17S / Rge.: 29E	
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Gas - Gas Multiple	Packer Set At: 10,658'			County: Eddy	
Producing Thru: Tubing	Reservoir Temp. °F: 155 @ 10500'	Mean Annual Temp. °F: 60°	Baro. Press. – P_a: 13.2	State: New Mexico	
L: 10,658 / H: 10,658'	Gg: 0.6515	% CO_2: 0.45	% N_2: 0.36	% H_2S: -0-	Prover: / Meter Run: 3" / Taps: Flange

NO.	FLOW DATA: Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	TUBING DATA: Press. p.s.i.g.	Temp. °F	CASING DATA: Press. p.s.i.g.	Temp. °F	Duration of Flow
S.				L-10 Chart Readings			1760.0		Packer	Choke	
1.	3"	X	0.625"	8.35	2.60	6.20	1613.0	53		3/64"	1 Hr.
2.	3"	X	0.625"	8.35	4.10	6.30	1435.0	60		5/64"	1 Hr.
3.	3"	X	0.625"	8.35	4.50	7.30	1050.0	64		9/64"	1 Hr.
4.	3"	X	0.625"	8.30	5.20	7.70	870.0	70		11/64"	1 Hr.
5.											

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$ Meter Coeff.	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1.	1.880	2.449	836.7	1.002	1.238	1.093	338
2.	1.880	2.449	836.7	1.000	1.238	1.090	309
3.	1.880	2.449	836.7	0.9913	1.238	1.078	225
4.	1.880	2.449	826.7	0.9732	1.238	1.074	253
5.							

NO.	P_r	Temp. °R	T_r	Z
1	1.25	518	1.33	0.836
2.	1.25	520	1.39	0.841
3.	1.25	540	1.44	0.860
4.	1.23	549	1.46	0.867
5.				

Gas Liquid Hydrocarbon Ratio _____ Mcf/Bbl.
A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas 0.6515 XXXXXXXXXX
Specific Gravity Flowing Fluid XXXXX
Critical Pressure 670 P.S.I.A. _____ P.S.I.A.
Critical Temperature 375 R _____ R

P_c^2 4494.2 P_c^2 6886.4

NO.	P_t^2	P_w^2	$P_c^2 - P_w^2$
1		2134.2	4554.8	2331.6
2		1844.2	3401.1	3485.3
3		1709.2	2921.4	3965.0
4		1521.2	2314.0	4572.4
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.5061$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.4932$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 378$

Absolute Open Flow 378 Mcfd @ 15.025 Angle of Slope θ 45.0° Slope, n 0.999

Remarks: Bottom hole pressure measured with Amerada G_ @ 10,500'
L-10 Chart Readings on 50# - 1200# - 150° meters

Approved by Commission:	Conducted By:	Calculated By:	Checked By:
	D. Tyson	R. West	

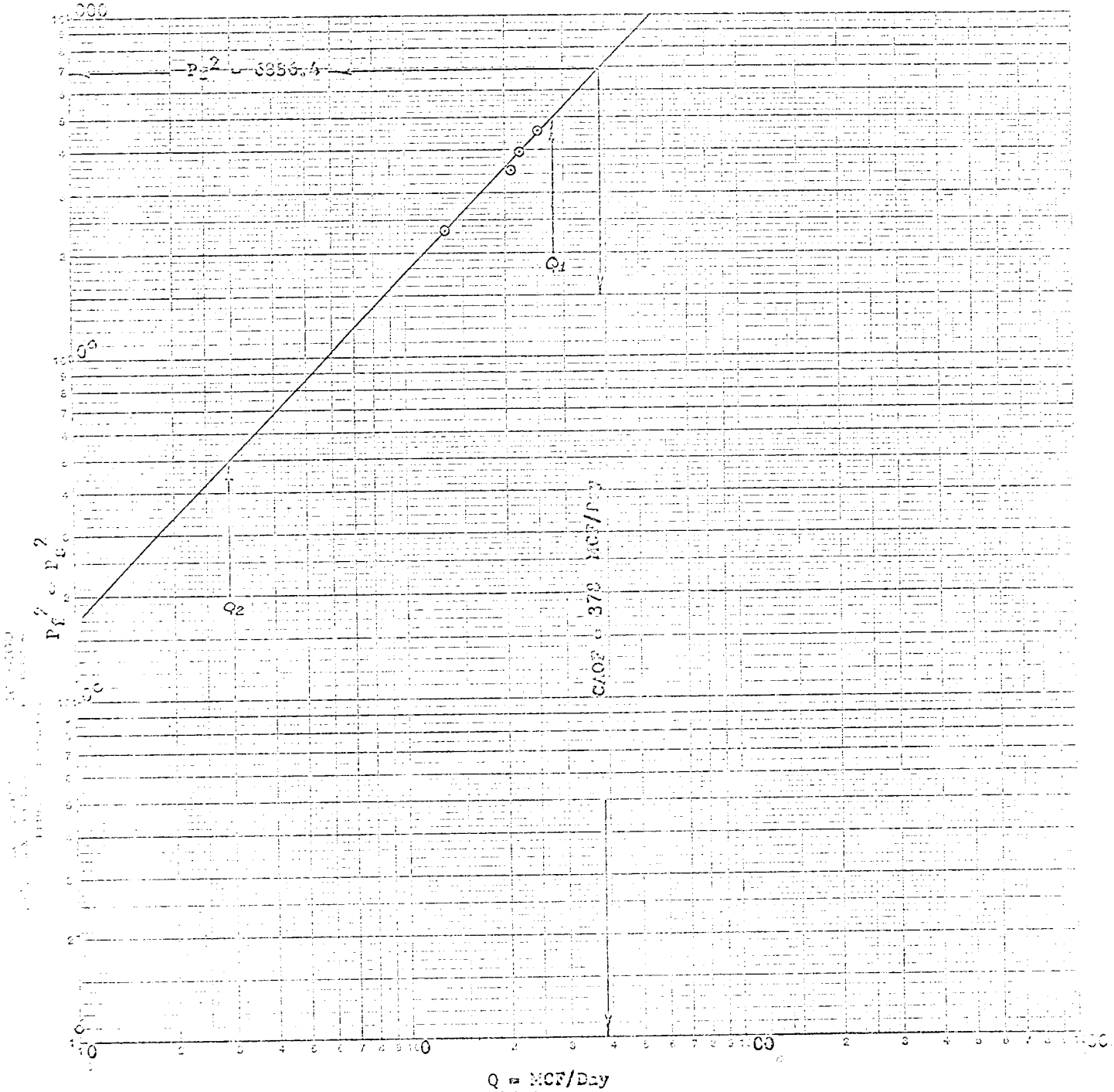
HORIZON OIL & GAS COMPANY
STATE 28
WELL No. 2
PRESSURE BUILD-UP TEST
TABULATION OF TIME & PRESSURE

TEST CONDUCTED BY:
JOHN WEST ENGINEERING COMPANY

TEST DATE: 2-11/12-74
TEST DEPTH: 10,500 FEET
ELEMENT No.: 28552-N
RANGE: 0-4000#
CLOCK No.: 11782
RANGE: 0-24 Hours
OPERATOR: D. Tyson

DATE	TIME	CUM. HRS./MIN.		P.S.I.G. @ 10,500 FEET
2-11-74	3:30 P.M.	00 Hrs.	00 Min.	2526 GUAGE @ 10,500'
		00	15	2530
		00	30	2524
		00	45	2536
		01	00	2538
		02	00	2546
		03	00	2552
		04	00	2562
		05	00	2567
		06	00	2573
2-11-74	11:30 P.M.	08	00	2585
2-12-74	1:30 A.M.	10	00	2593
		12	00	2605
		14	00	2611
		16	00	2611
2-12-74	8:00 A.M.	16	30	2611 END BUILD UP
		16	45	2443 BEGIN 1st RATE
		17	00	2234
		17	15	2169
	9:00 A.M.	17	30	2121 END 1st RATE
		17	45	2022
		18	00	1929
		18	15	1861
	10:00 A.M.	18	30	1831 END 2nd RATE
		18	45	1766
		19	00	1720
		19	15	1700
	11:00 A.M.	19	30	1696 END 3rd RATE
		19	45	1575
		20	00	1506
		20	15	1502
	12:00 NOON	20	30	1508 END 4th RATE
		20	45	1760
		21	00	1927
		21	15	2085
		21	30	2169
		21	45	2294
		22	00	2327
2-12-74	1:45 P.M.	22	30	2367 GUAGE OUT END TEST

HORILON OIL & GAS CO. STATE 26 #2 (Morrow)



Abs. Slope (n) = $Q_1 = 280 = 6.4471580$

$Q_2 = 29.4 = 5.4683473$

n = 0.9788107

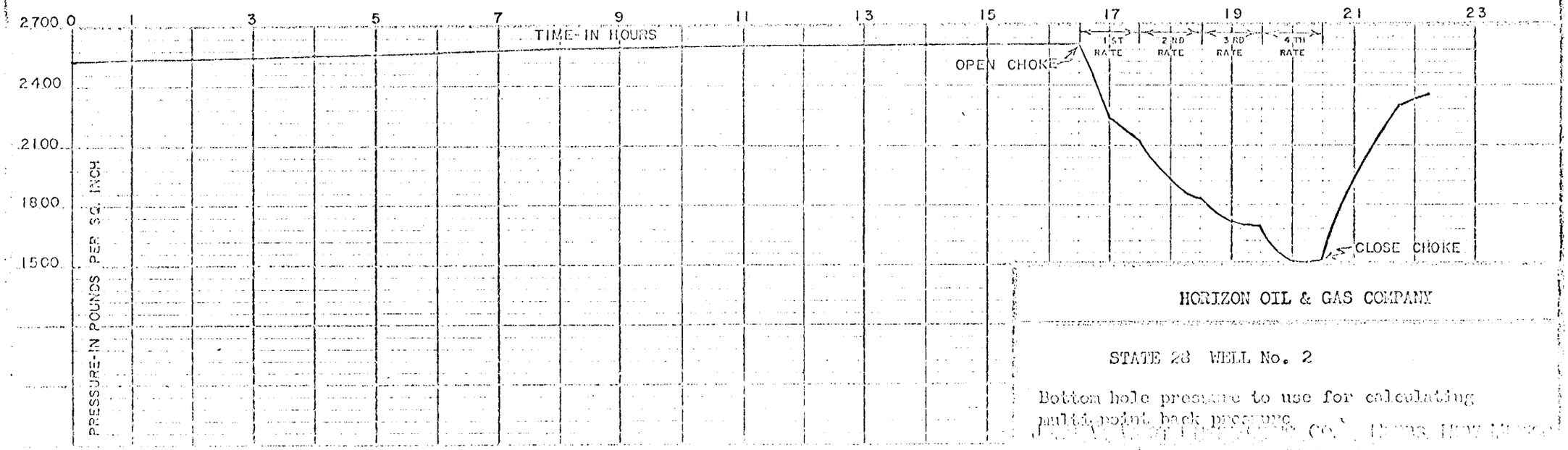
AOF = $253\ (\frac{3886.4}{4072.4})^{.979}$ = 378 MCF /D

TEST DATE: February 11 and 12, 1974
TEST DEPTH: 10,500 Feet

ELEMENT No.: 28552-N
RANGE: 0-4000#

CLOCK No.: 11782
RANGE: 0-24 Hours

TEST OPERATOR: D. Tyson



HORIZON OIL & GAS COMPANY

STATE 28 WELL No. 2

Bottom hole pressure to use for calculating multi-point back pressure