

CONNECTED COPY

Initial Deliverability
Test

ILLEGIBLE

NEW MEXICO OIL CONSERVATION COMMISSION

GAS WELL TEST DATA SHEET - - SAN JUAN BASIN

Form C-122-A
Revised April 20, 1955

(TO BE USED FOR FRUITLAND, PICTURED CLIFFS, MESAVERDE, & ALL DAKOTA
EXCEPT BARKER DOME STORAGE AREA)

Pool Undersaturated Dakota Formation Dakota County San Juan
Purchasing Pipeline Sunray Mid-Continent Oil Company Date Test Filed October 28, 1960
Operator Pan American Petroleum Corp. Lease O. H. Randal Well No. 2
Unit 1 Sec. 20 Twp. 36N Rge. 11W Pay Zone: From 4250 To 4400
Casing: OD 7" WT. 20 & 23 Set At 4447 Tubing: OD 2-3/8 WT. 4.7 T. Perf. 4250
Produced Through: Casing Tubing I Gas Gravity: Measured 0.703 Estimated
Date of Flow Test: From 8-23-60 To 9-1-60 * Date S.I.P. Measured 3-23-59
Meter Run Size 1 1/2" Orifice Size 0.300 Type Chart 3, 20 Type Taps Flange

OBSERVED DATA

Flowing casing pressure (Dwt) psig + 12 = psia (a)
Flowing tubing pressure (Dwt) psig + 12 = psia (b)
Flowing meter pressure (Dwt) psig + 12 = psia (c)
Flowing meter pressure (meter reading when Dwt. measurement taken:
Normal chart reading psig + 12 = psia (d)
Square root chart reading ()² x spring constant = psia (d)
Meter error (c) - (d) or (d) - (c) ± = psi (e)
Friction loss, Flowing column to meter: = psi (f)
(b) - (c) Flow through tubing: (a) - (c) Flow through casing
Seven day average static meter pressure (from meter chart):
Normal chart average reading psig + 12 = psia (g)
Square root chart average reading (7.75)² x sp. const. 15 = 902 psia (g)
Corrected seven day avge. meter press. (p_f) (g) + (e) = 902 psia (h)
P_t = (h) + (f) = 902 psia (i)
Wellhead casing shut-in pressure (Dwt) psig + 12 = psia (j)
Wellhead tubing shut-in pressure (Dwt) 1799 psig + 12 = 1771 psia (k)
P_c = (j) or (k) whichever well flowed through = 1771 psia (l)
Flowing Temp. (Meter Run) 60 °F + 460 = 500 °Abs (m)
P_d = 1/2 P_c = 1/2 (l) = 886 psia (n)

FLOW RATE CALCULATION

$$Q = \text{(Integrated)} \times \left(\frac{\sqrt{(c)}}{\sqrt{(d)}} = \text{ } = \text{ } \right) = \text{ } \text{ MCF/da}$$

DELIVERABILITY CALCULATION

$$D = Q \text{ } \left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2} = \frac{2,351,145}{2,351,000} \right]^n \text{ } \frac{1,000}{1,000} = \text{ } \text{ MCF/da.}$$

SUMMARY

P_c = 1771 psia
Q = 152 Mcf/day
P_w = 902 psia
P_d = 886 psia
D = 153 Mcf/day

Company Pan American Petroleum Corporation
By R. H. Bauer, Jr.
Title Area Engineer
Witnessed by
Company

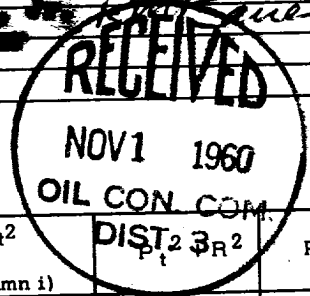
- * This is date of completion test.
- * Meter error correction factor

REMARKS OR FRICTION CALCULATIONS

GL	(1-e ^{-S})	(F _c Q) ²	(F _c Q) ² (1-e ^{-S}) R ²	P _t ² (Column i)	DIST _t ² 3R ²	P _w
4412	0.274	2.042	0.560	811,002	612,301	902

*Gas delivery from O. H. Randal Nos. 1 and 2 is to Sunray Mid-Continent Oil Company at
their meter station. Individual gas volumes for each well computed from separate Pan
American check meters using data shown on reverse side.

CONNECTED COPY



CALCULATION OF GAS VOLUMES

Water Run Time	4"
Outlet Size	0.500
Gas Gravity	0.703
Water	1500'
Average Differential Reading	3.6"
Average Static Reading	7.75"

$$50.224(P_b) \times 0.9804(P_{ps}) \times 1.1927(P_g) \times 3.673(X) - C' = 227.16$$

$$227.16 \times 7.75 \times 3.6 = Q_g = 6316 \text{ SM-Lt. hr.}$$

$$6316 \text{ SM-Lt. hr.} \times 24 \frac{\text{hr.}}{\text{day}} = 152 \text{ MCF/day}$$

Volume for period 8-23-60 to 9-1-60 = 1,368 MCF