

File

EL PASO NATURAL GAS COMPANY

P. O. Box 997  
Farmington, New Mexico

December 5, 1956

Mr. E. C. Arnold  
Oil Conservation Commission  
120 East Chaco  
Aztec, New Mexico

Re: Packer Leakage Test on the El Paso  
Natural Gas Company Well Ludwick #14,  
NE 6-29-10, San Juan County, New Mexico

Dear Mr. Arnold:

This well was dually completed in the Pictured Cliffs and Mesaverde zones. A packer was set at 2364 feet. The Mesaverde zone was tested November 20, 1956 with the following results obtained:

SIPC 586 psig (Shut-in 14 days)  
SIPT 1025 psig

The tubing was opened at 11:25 a.m. through a 3/4" choke and was left open for three hours.

<u>Time</u>	<u>Tubing Choke Pressure, psig</u>	<u>Temp. °F</u>	<u>Casing Pressure, psig</u>
11:25	Opened Tubing		586
11:40	398	50	585
11:55	344	50	586
12:10	310	50	586
12:25	289	50	586
1:48	224	50	586
2:25	210	49	586

The calculated choke volume was 3147 MCF/D. After the well was shut-in for 15 days, the Pictured Cliff zone was tested December 5, 1956 with the following results obtained:

Pictured Cliff SIPT 621 psig  
Pictured Cliff SIPC 612 psig (Shut-in 15 days)  
Mesaverde SIPT 1042 psig

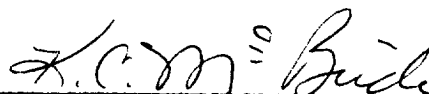
The casing was opened at 10:15 a.m. through a 3/4" choke and was left open for three hours.

<u>Time</u>	<u>Casing Choke Pressure, psig</u>	<u>Temp. °F</u>	<u>Casing Pressure, psig</u>
10:15	Opened Casing		1042
10:30	455	54	1043
10:45	413	55	1043
11:00	371	56	1043
11:15	353	58	1044
12:15	309	59	1044
1:15	287	66	1044

The calculated choke volume was 4103 MCF/D. The results of the data obtained during the tests indicate there is no leakage past the packer.

These tests were witnessed by Mr. E. C. Arnold of the New Mexico Oil Conservation Commission.

Very truly yours,



K. C. McBride  
Gas Engineer

KCMCB/vb

cc: E. E. Alsup  
D. H. Tucker  
R. W. Harris  
W. T. Hollis  
W. M. Rodgers  
Drilling Department  
B. D. Adams  
Roland Hamblin  
Jack Purvis  
W. V. Holik  
C. C. Kennedy  
E. J. Coel, Jr. (6)  
A. J. Dudenhoeffer  
D. V. Rittmann  
Bill Parrish  
H. H. Lines  
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EL PASO NATURAL GAS COMPANY  
OPEN FLOW TEST DATA

DUAL COMPLETION

DATE December 5, 1956

Operator <b>El Paso Natural Gas Company</b>		Lease <b>Ludwick #14</b>	
Location <b>1650°N, 992°E, Sec. 6-29-10</b>		County <b>San Juan</b>	State <b>New Mexico</b>
Formation <b>Pictured Cliffs</b>		Pool <b>Astec</b>	
Casing Diameter <b>7"</b>	Set At: Feet <b>4159</b>	Tubing Diameter <b>1 1/4"</b>	Set At: Feet <b>2297</b>
Pay Zone From <b>2243</b>	To <b>2282</b>	Total Depth <b>4810</b> Packer @ <b>2364</b>	
Stimulation Method <b>Sand Water Frac</b>		Flow Through Casing <b>X</b>	Flow Through Tubing

Choke Size, inches <b>.750</b>		Choke Constant: C <b>14.1605</b>	
Shut-In Pressure, Casing, PSIG <b>612</b>	PSIG - 12 - PSIA <b>624</b>	Days Shut-In <b>15</b>	Shut-In Pressure, Tubing, PSIG <b>621</b>
Flowing Pressure, Casing, PSIG <b>287</b>	PSIG - 12 - PSIA <b>299</b>		Working Pressure, Pw, PSIG <b>301</b>
Temperature <b>66</b>	F - 1.8 - F <b>.85</b>		Fpv (From Tables) <b>1.030</b>
			Gravity <b>.670</b>

CHOKE VOLUME  $Q = C \times P_1 \times F_1 \times F_g \times F_{pv}$

$$Q = 14.1605 \times 299 \times .9943 \times .9463 \times 1.030 = 4103$$

MCF/D

OPEN FLOW  $Q_{OF} = Q \left( \frac{P_c^2}{P_c^2 - P_w^2} \right)^n$

$$Q_{OF} = 4103 \left( \frac{400,689}{302,720} \right)^{.85} = (1.3236) \times 4103 = 1.2690 \times 4103$$

$$Q_{OF} = 5207 \text{ MCF/D}$$

By **K. C. McBride**

WITNESSES

*L. D. Galloway*  
L. D. Galloway

cc: E. J. Coel, Jr. (6)