

# El Paso Natural Gas Company

El Paso, Texas

June 10, 1958

ADDRESS REPLY TO  
POST OFFICE BOX 997  
FARMINGTON, NEW MEXICO



Mr. A. L. Porter  
Secretary and Director  
Oil Conservation Commission  
Box 871  
Santa Fe, New Mexico

Dear Sir:

This is a request for administrative approval for a well dually completed in the Blanco Mesa Verde Pool and South Blanco Pictured Cliffs Pool. The El Paso Natural Gas Company San Juan 28-7 Unit No. 88 (PM) is located 1800 feet from the South line and 1550 feet from the West line of Section 7, Township 27 North, Range 7 West, N.M.P.M., Rio Arriba County, New Mexico.

This well has been completed in the Point Lookout and Cliff House sections of the Mesa Verde formation and in the Pictured Cliffs formation. Completion has been accomplished in the following manner:

1. 10 5/4" surface casing set at 175 feet with 150 sacks of cement circulated to the surface.
2. 7 5/8" intermediate casing set at 3201 feet with 150 sacks of cement. Top of the cement is at 2020 feet, which is above the top of the Pictured Cliffs at 3033 feet.
3. 5 1/2" liner set from 3157 feet to 5457 feet with 250 sacks of cement.
4. The casing and liner were tested for leaks before perforating.
5. The Point Lookout section was perforated in three intervals and fractured with water and sand.
6. The Cliff House section was perforated in two intervals and fractured with water and sand.
7. The Pictured Cliffs formation was perforated in three intervals and fractured with water and sand.
8. All perforations were cleaned out after treatment and completion was accomplished by setting a Baker Model "ECJ" production packer on 2" EUE tubing at 3212 feet with tubing perforations set opposite the Point Lookout perforations. 1 1/4" EUE tubing siphon string was run with tubing perforations set opposite the Pictured Cliffs perforations. The Point Lookout gas will be produced through the 2" tubing and the Pictured Cliffs gas through the casing.
9. Initial potential tests have been run and commercial production has been found in both zones. A packer leakage test has been run and witnessed by a member of the Aztec office of the Oil Conservation Commission. This test shows no communication in the well bore between the two producing formations.

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Administrative approval is requested for the dual completion to allow production from both known producing formations, eliminating the high initial cost of drilling two separate wells.

The offset operators to this well have been notified of El Paso Natural Gas Company's intentions to dually complete this well and in turn have waived any objections to this plan. I am sending copies of the letters of approval received from the offset operators. Also enclosed are:

- (a) Two copies of the schematic diagram of the mechanical installations.
- (b) Two copies of the affidavit from the packer setting company stating that the packer used was set at the depth shown.
- (c) Two copies of the packer leakage test as observed by a member of the Oil Conservation Commission.
- (d) Two copies of the initial potential test showing commercial production from the two formations.
- (e) Two plats showing the location of the well and offset operators.

It is intended to dedicate the W/2 of Section 7, Township 27 North, Range 7 West to the Mesa Verde formation and the SW/4 of Section 7, Township 27 North, Range 7 West to the Pictured Cliffs formation.

Any further information required will be furnished upon your request. Thank you for your consideration in this matter.

Yours very truly,

ORIGINAL SIGNED E. S. OBERLY

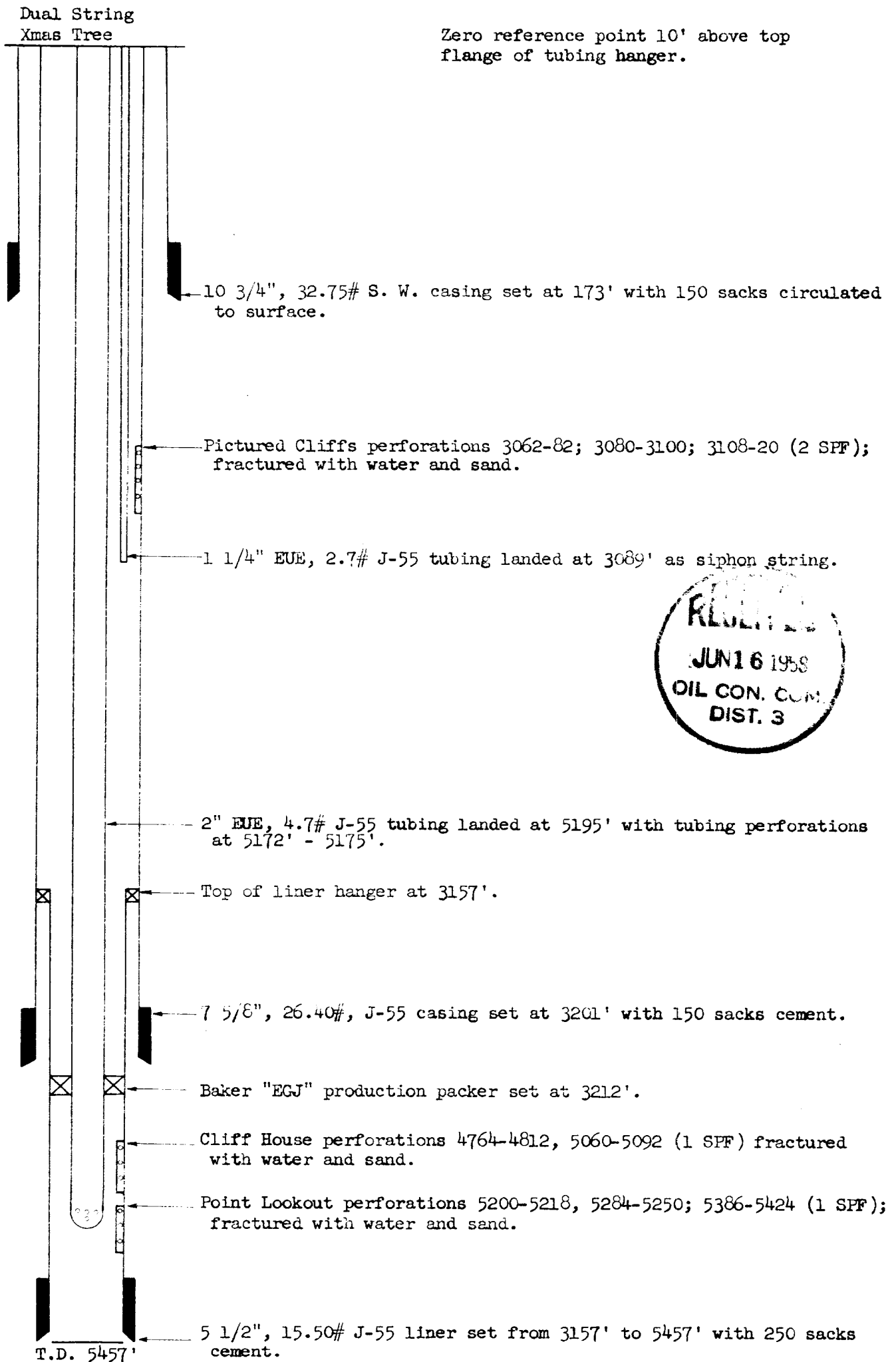
E. S. Oberly,  
Division Petroleum Engineer

ESO:dgb

Encl.

cc: NMOCC (Emery Arnold)  
Sam Smith  
USGS (Paul McGrath)

SCHEMATIC DIAGRAM OF DUAL COMPLETION  
El Paso Natural Gas Co. San Juan 28-7 Unit No. 86 (PM)  
SW/4 Section 7, T-27-N, R-7-W



EL PASO NATURAL GAS COMPANY

P. O. Box 997  
Farmington, New Mexico

May 21, 1958

Mr. E. C. Arnold  
Oil Conservation Commission  
1000 Rio Brazos Road  
Aztec, New Mexico

Re: Packer Leakage Test on the El Paso Natural Gas  
Company Well, San Juan 28-7 No. 86 (PM), 1800S,  
1550W, Sec. 7-27-7, Rio Arriba County, New Mex.

Dear Mr. Arnold:

The subject well was dually completed in the Pictured Cliffs and Mesa Verde zones and a packer was set at 3212 feet. The Mesa Verde zone was tested through a 3/4" choke for three hours March 27, 1958 with the following data obtained:

PC SIPC 811 psig; shut-in 16 days  
PC SIPT 813 psig;  
  
MV SIPT 1041 psig; shut-in 16 days

<u>Time Minutes</u>	<u>MV Flowing Pressure Tubing Psig</u>	<u>PC SIPC Psig</u>	<u>MV Working Pressure, Psig</u>	<u>Temp ° F</u>
15	232	813		59
30	181	813		59
45	159	812		59
60	147	812		59
120	129	811		61
180	109	809	212 (Calc.)	60

The choke volume for the Mesa Verde was 1422 MCF/D with an AOF of 1477 MCF/D.

The Pictured Cliffs zone was tested May 19, 1958 with a 3/4" choke for 3 hours with the following data obtained:

PC SIPC 781 psig; shut-in 53 days  
PC SIPT 771 psig;  
  
MV SIPT 1083 psig; shut-in 69 days

NOT 3

May 21, 1958

<u>Time</u> <u>Minutes</u>	<u>PC Flowing Pressure</u> <u>Casing Psig</u>	<u>MV SIPT Psig</u>	<u>PC Working</u> <u>Pressure-Psig</u>	<u>Temp ° F</u>
15	265	1083		59
30	167	1083	173	58
45	136	1084		59
60	127	1084	134	60
120	98	1084	104	61
180	86	1084	92	62

The choke volume for the Pictured Cliffs test was 1,189 MCF/D with an AOF of 1,207 MCF/D.

The results of the above tests indicate there is no packer leakage.

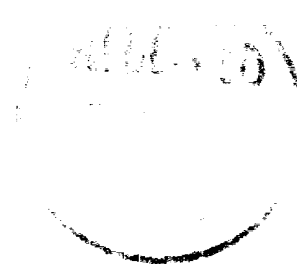
Very truly yours,

Robert R. Davis

Robert R. Davis  
Gas Engineer

RRD/nb

cc: W. M. Rodgers  
E. S. Oberly (C)  
File



EL PASO NATURAL GAS COMPANY  
OPEN FLOW TEST DATA

DUAL COMPLETION

DATE March 27, 1958

Operator <b>El Paso Natural Gas</b>		Lease <b>San Juan 28-7 No. 86 (M)</b>	
Location <b>1800S, 1550W, 7-27-7</b>		County <b>Rio Arriba</b>	State <b>New Mexico</b>
Formation <b>Mesa Verde</b>		Pool <b>Blanco</b>	
Casing: Diameter <b>7-5/8"</b>	Set At: Feet <b>3189</b>	Tubing: Diameter <b>2"</b>	Set At: Feet <b>5176</b>
Pay Zone: From <b>4564</b>	To <b>5424</b>	Total Depth <b>5457</b>	Shut-in 3-11-58
Stimulation Method <b>Sand Water Frac</b>		Flow Through Casing <b>X</b>	

Choke Size, Inches <b>.750</b>	Choke Constant: C <b>12.365</b>		
Shut-In Pressure, Casing, PSIG <b>811 (PC)</b>	PSIA <b>823</b>	Days Shut-In <b>16</b>	Shut-In Pressure, Tubing, PSIG <b>1041 (MV)</b>
Flowing Pressure: P, PSIG <b>109</b>	PSIA <b>121</b>	Working Pressure: P <sub>w</sub> , PSIG <b>(Calc)</b>	PSIA <b>234</b>
Temperature: T, F <b>60</b>	F <sub>pv</sub> <b>.750</b>	F <sub>pv</sub> (From Tables) <b>1.012</b>	Gravity <b>.680</b>

Final SIPC (PC) = 809 PSIG, Packer at 3212' 1-1/4" at 3079'

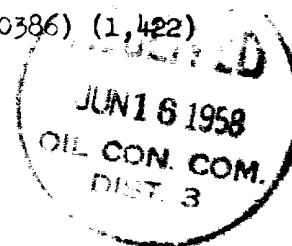
CHOKE VOLUME Q C x P<sub>i</sub> x F<sub>i</sub> x F<sub>g</sub> x F<sub>pv</sub>

C 12.365 (121) (1.0000) (.9393) (1.012) = 1422 MCF/D

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

Aof  $\left( \frac{1108809}{1054053} \right)^n (1.0519)^{.75} (1,422) = (1.0386) (1,422)$

Aof 1,477 MCF/D



TESTED BY R. R. Davis

WITNESSED BY

L. D. Galloway  
L. D. Galloway

EL PASO NATURAL GAS COMPANY  
OPEN FLOW TEST DATA

DUAL COMPLETION

DATE May 19, 1958

Operator <b>El Paso Natural Gas Company</b>		Lease <b>San Juan 28-7 No. 86 (P)</b>	
Location <b>1800S, 1550W, 7-27-7</b>		County <b>Rio Arriba</b>	State <b>New Mexico</b>
Formation <b>Pictured Cliffs</b>		Pool <b>South Blanco</b>	
Casing Diameter <b>7-5/8</b>	Set At: Feet <b>3189</b>	Tubing: Diameter <b>1-1/4"</b>	Set At: Feet <b>3079</b>
Pay Zone: From <b>3038</b>	To <b>3120</b>	Total Depth: <b>5457</b>	<b>Shut-In 3/11/58</b>
Stimulation Method <b>Sand Water Frac</b>		Flow Through Casing <b>X</b>	Flow Through Tubing

Choke Size, Inches <b>.75</b>		Choke Constant: C <b>12.365</b>		<b>5-1/2" liner 3157 - 5457</b>	
Shut-In Pressure, Casing, (PC) <b>771</b>	PSIG - 12 = PSIA <b>783</b>	Days Shut-In <b>69</b>	Shut-In Pressure, Tubing (PC) <b>781</b>	PSIG - 12 = PSIA <b>793</b>	
Flowing Pressure: P <b>86</b>	PSIG - 12 = PSIA <b>98</b>		Working Pressure: P <sub>w</sub> <b>92</b>	PSIG - 12 = PSIA <b>104</b>	
Temperature: T <b>62</b>	F <sub>g</sub> n <sub>g</sub> <b>.850</b>		F <sub>pv</sub> (From Tables) <b>1.007</b>	Gravity <b>.630</b>	

Initial SIPT (MV) = 1083 PSIG  
Final SIPT (MV) = 1084 PSIG

Packer at 3212, 2" at 5176

CHOKE VOLUME - Q = C x P<sub>c</sub> x F<sub>t</sub> x F<sub>g</sub> x F<sub>pv</sub>

$$Q = 12,365 (98) (.9981) (.9759) (1.007) = 1189 \text{ MCF/D}$$

$$\text{OPEN FLOW } A_{of} = Q \left( \frac{P_c^2}{P_c^2 - P_w^2} \right)^n$$

$$A_{of} \left( \frac{628,849}{618,033} \right)^n (1.0175)^{.85} (1189) = (1.01487) (1189)$$

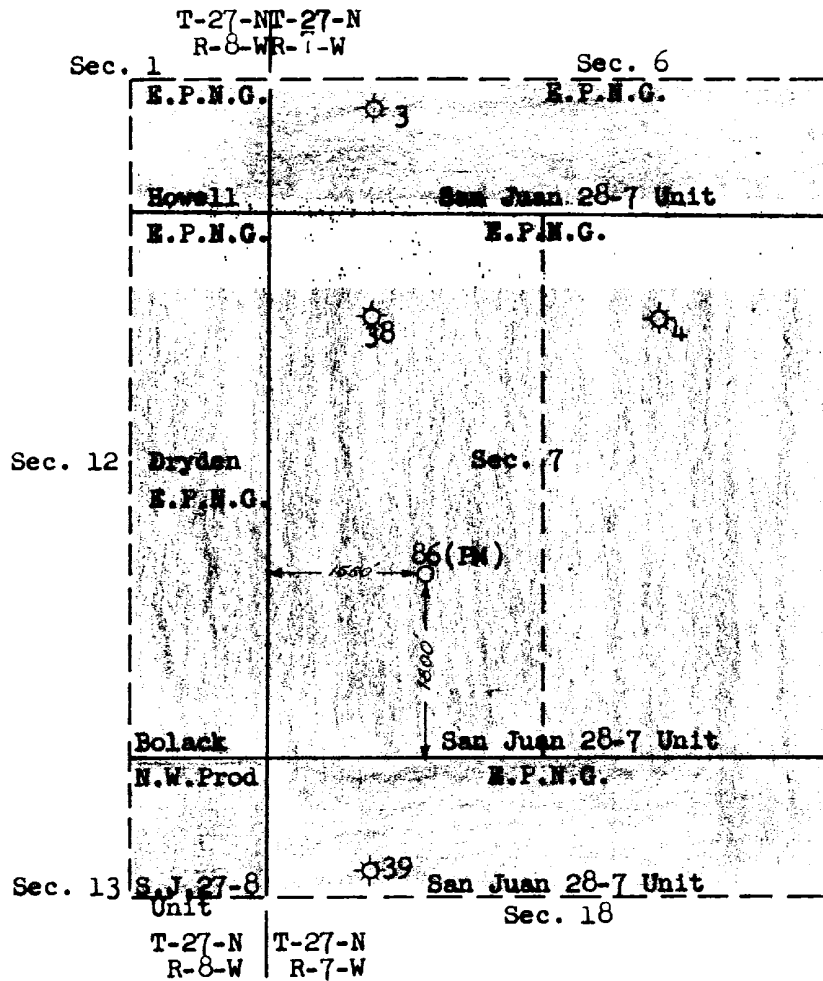
$$A_{of} = 1207 \text{ MCF/D}$$

TESTED BY Robert R. Davis

WITNESSED BY \_\_\_\_\_

*Lewis D. Galloway*  
L. D. Galloway

PLAT SHOWING LOCATION OF DUALY COMPLETED  
El Paso Natural Gas Co. San Juan 28-7 Unit No. 86 (FM)  
and Offset Acreage



EL PASO NATURAL GAS COMPANY  
EL PASO, TEXAS

SCALE

DATE

No.

DRAWN BY

CHECKED BY