

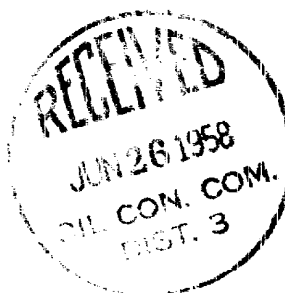
Letter 27 6-27-58

El Paso Natural Gas Company

El Paso, Texas

June 25, 1958

ADDRESS REPLY TO
POST OFFICE BOX 957
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 and South Blanco Pictured Cliffs Pools. The El Paso Natural Gas Company San Juan 28-7 Unit No. 89 (PM) is located 1100 feet from the South line and 1190 feet from the West line of Section 15, Township 27 North, Range 7 West, N.M.P.M., Rio Arriba County, New Mexico.

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

1. 10 3/4" surface casing set at 173 feet with 150 sacks of cement circulated to the surface.
2. 7 5/8" intermediate casing set at 3354 feet with 150 sacks of cement. Top of the cement is at 2100 feet, which is above the top of the Pictured Cliffs at 3137 feet.
3. 5 1/2" liner set from 3324 feet to 5613 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 seven intervals and fractured with water and sand.
6. The Pictured Cliffs formation was perforated in two intervals and fractured with water and sand.
7. All perforations were cleaned out after treatment and completion was accomplished by setting a Baker Model "EGJ" production packer on 2" EUE tubing at 3395 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.
8. 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.

COPY

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.

Since the drilling block falls entirely within the limits of the San Juan 28-7 Unit, of which El Paso Natural Gas Company is the operator, approval to dually complete this well has not been sought from any other operator. 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.

It is intended to dedicate the W/2 of Section 15, Township 27 North, Range 7 West to the Mesa Verde formation and the SW/4 of Section 15, 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

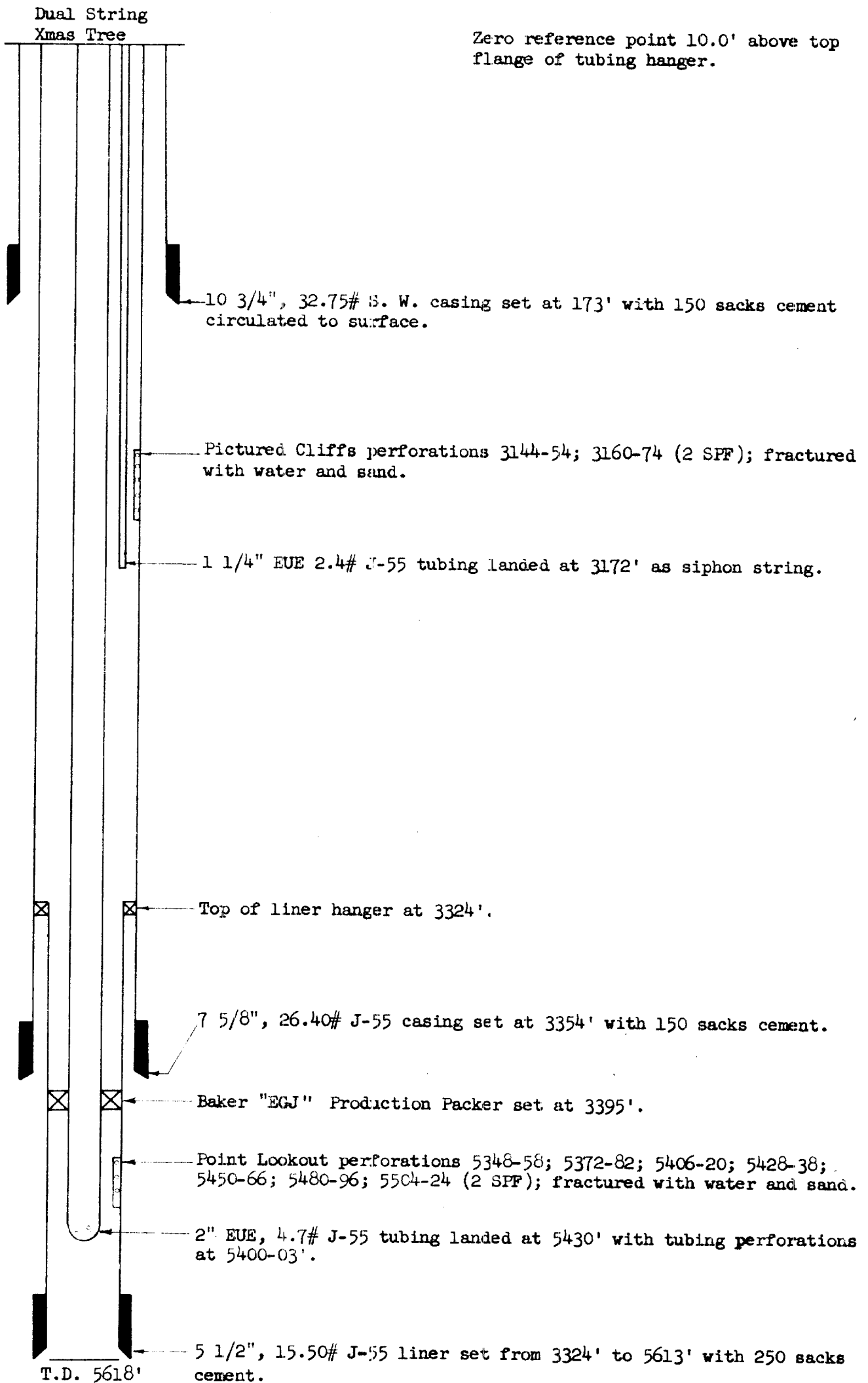
E. S. Oberly,
Division Petroleum Engineer

ESO:dgb

Encl.

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

SCHEMATIC DIAGRAM OF DUAL COMPLETION
El Paso Natural Gas Co. San Juan 28-7 Unit No. 89 (PM)
SW/4 Section 15, T-27-N, R-7-W



STATE OF NEW MEXICO)

COUNTY OF SAN JUAN)

I, Mack M. Mahaffey, being first duly sworn upon my oath depose and say as follows:

I am an employee of Baker Oil Tools, Inc., and that on March 30, 1958, I was called to the location of the El Paso Natural Gas Company San Juan 28-7 Unit No. 89 (PM) Well located in the SWSW/4 of Section 15, Township 27 North, Range 7 West, N.M.P.M., for advisory service in connection with installation of a production packer. In my presence, a Baker Model "EGJ" Production Packer was set in this well at 3395 feet in accordance with the usual practices and customs of the industry.

Mack M. Mahaffey

Subscribed and sworn to before me, a Notary Public in and for San Juan County, New Mexico, the 24th day of June, 1958.

Paul B. Whelan
Notary Public in and for San Juan
County, New Mexico

My commission expires February 24, 1960.

EL PASO NATURAL GAS COMPANY

P. O. Box 997
Farmington, New Mexico

June 4, 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. 89 (PM),
SW 15-27-7, Rio Arriba County, New Mexico.

Dear Mr. Arnold:

The subject well was dually completed in the Fictured Cliffs and Mesa Verde zones and a packer was set at 3395 feet. The Mesa Verde zone was tested through a 3/4" choke for three hours April 17, 1958, with the following data obtained:

PC SIPC 957 psig; Shut-in 17 days
MV SIFT 1102 psig; Shut-in 17 days

<u>Time</u> <u>Minutes</u>	<u>MV Flowing Pressure</u> <u>Tubing Psig</u>	<u>PC SIPC Psig</u>	<u>MV Working</u> <u>Pressure, Psig</u>	<u>Temp ° F</u>
15	427	958		83
30	350	959		83
45	298	959		83
60	273	959		83
180	187	959	Calc. 368	84

The choke volume for the Mesa Verde was 2297 MCF/D with an AOF of 2536 MCF/D.

The Fictured Cliffs zone was tested May 30, 1958, with a 3/4" choke for 3 hours with the following data obtained:

PC SIPC 1005 psig; Shut-in 60 days
MV SIFT 1122 psig; Shut-in 43 days

EL PASO NATURAL GAS COMPANY

San Juan 28-7 No. 30 (11)

Page Two

June 4, 1958

<u>Time Minutes</u>	<u>PC Flowing Pressure Casing Psig</u>	<u>MV SEPT Psig</u>	<u>PC Working Pressure, Psig</u>	<u>Temp, ° F</u>
15	832	1125		62
30	790	1127	806	64
45	752	1128	-	64
60	740	1129	759	68
180	634	1131	652	72

The choke volume for the Pictured Cliffs test was 8,113 MCF/D with an AOF of 15,013 MCF/D.

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

Very truly yours,

M. W. Rischard
M. W. Rischard
E. A. L. K.

MWR/nb

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

EL PASO NATURAL GAS COMPANY
OPEN FLOW TEST DATA

DUAL COMPLETION

DATE April 17, 1958

Operator El Paso Natural Gas Company		Lease San Juan 28-7 Unit 89 (M)	
Location 1100S, 1190W, 15-27-7		County Rio Arriba	State New Mexico
Formation Mesa Verde		Pool Blanco	
Casing: Diameter 7-5/8	Set At: Feet 3344	Tubing: Diameter 2"	Set At: Feet 5420
Pay Zone: From 5348	To 5524	Total Depth: 5614 c/o 5568	Shut-in 3/31/58
Stimulation Method Sand Water Frac		Flow Through Casing	Flow Through Tubing X

Choke Size, Inches .75		Choke Constant: C 12.365		5-1/2 liner at 3329 to 5614	
Shut-In Pressure, Casing, PSIG 957 (PC)	12 = PSIA 969	Days Shut-In 17	Shut-In Pressure, Tubing, PSIG 1102 (MV)	12 = PSIA 1114	
Flowing Pressure: P, PSIG 187	12 = PSIA 199		Working Pressure: P _w , PSIG Calc.	12 = PSIA 392	
Temperature: T, °F 64	n 75		F _{pv} (From Tables) 1.023	Gravity .718	

Initial SIPC (PC) 958 PSIG

Facker set at 3395 1-1/4" at 3172

Final SIPC (PC) 959 PSIG

CHOKE VOLUME = Q = C × P_c × F_v × F_g × F_{pv}

$$Q = 12.365 \times 199 \times .9962 \times .9161 \times 1.023 = 2297 \text{ MCF/D}$$

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

$$Aof = \left(\frac{1240996}{1087332} \right)^{.75} = (1.1413)^{.75} \times 2297 = 1.1042 \times 2297$$

$$Aof = 2536 \text{ MCF/D}$$

TESTED BY Bill RischardWITNESSED BY J. B. GoodwinChecked By: S. V. Roberts

Lewis D. Galloway
L. D. Galloway

EL PASO NATURAL GAS COMPANY
OPEN FLOW TEST DATA

DUAL COMPLETION

DATE May 30, 1958

Operator El Paso Natural Gas		Unit San Juan 28-7 Unit 89 (P)	
Location 1100S, 1190W; 15-27-7		State New Mexico	
Formation Pictured Cliffs		County Rio Arriba	
Casing Diameter 7-5/8	Set At Feet 3344	Tubing Diameter 1-1/4	Set At Feet 3172
Flow Through Casing 3144	Flow Through Tubing 3174	Total Depth 5568	Shut-in 3/31/58
Stimulation Material Sand Water Frac		Flow Through Casing X	

Choke Size, Inches 3/4	Choke Constant, C 12.365	5-1/2 liner 3329 - 5614
Static Pressure, Choke, PSIG 1005 (PC)	Static Pressure, Tubing, PSIG 1017	Days Shut-in 60 (PC)
Flowing Pressure, P, PSIG 634	Working Pressure, Pw, PSIG 652	Flow From Tables, Gravity 1.061
Temperature, F 72		

Initial SIPT (M) 1122

Final SIPT (M) 1131

Packer at 3395

2" at 5420

CHOKE VOLUME Q C x P_c x F_g x F_v

$$Q = 12.365 \times 646 \times .9887 \times .9682 \times 1.061 = 8,113 \text{ MCF/D}$$

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

$$= \left(\frac{1034289}{593393} \right)^{.85} = 1.7430^{.85} (8,113) = 1.6040 (8113)$$

$$\text{Adj} = 13,013 \text{ MCF/D}$$

M. W. Rischard

Lewis D. Galloway
L. D. Galloway