

El Paso Natural Gas Company

El Paso, Texas

February 17, 1958

DIRECT REPLY TO:
P. O. 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 South Blanco Pictured Cliffs Pool Extension and in the Blanco Mesa Verde Pool. The El Paso Natural Gas Company Florance 5-C (PM) is located 1735 feet from the North line and 890 feet from the East line of Section 30, Township 28 North, Range 8 West, N.M.P.M., San Juan 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 100 sacks of cement circulated to the surface.
2. 7 5/8" intermediate casing set at 2480 feet with 250 sacks of cement. Top of the cement is at 940 feet which is above the top of the Pictured Cliffs at 2261 feet.
3. 5 1/2" liner set from 2319 feet to 2435 feet with 25 sacks of cement and from 2435 feet to 4766 feet with 300 sacks of cement.
4. The casing and liner were tested for leaks before perforating.
5. The Point Lookout section was perforated in six 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 after treatment and completion was accomplished by setting a Baker Model "EGJ" production packer on 2" EUE tubing at 2351 feet with the tubing perforations set opposite the Point Lookout perforations. 1 1/4" EUE tubing was run, with the tubing perforations set opposite the Pictured Cliffs perforations, as a siphon string. 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

THE UNIVERSITY OF CHICAGO

CHICAGO, ILL.

1911



LIBRARY OF THE
UNIVERSITY OF CHICAGO

CHICAGO, ILL.

1911

THE UNIVERSITY OF CHICAGO
CHICAGO, ILL.
1911

THE UNIVERSITY OF CHICAGO
CHICAGO, ILL.
1911

THE UNIVERSITY OF CHICAGO
CHICAGO, ILL.
1911

THE UNIVERSITY OF CHICAGO
CHICAGO, ILL.
1911

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 El Paso Natural Gas Company holds all leases immediately adjacent to the acreage dedicated to this well, approval has not been sought from any other operator to dually complete this well. 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 E/2 of Section 30, Township 28 North, Range 8 West to the Mesa Verde formation and the NE/4 of Section 30, Township 28 North, Range 8 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

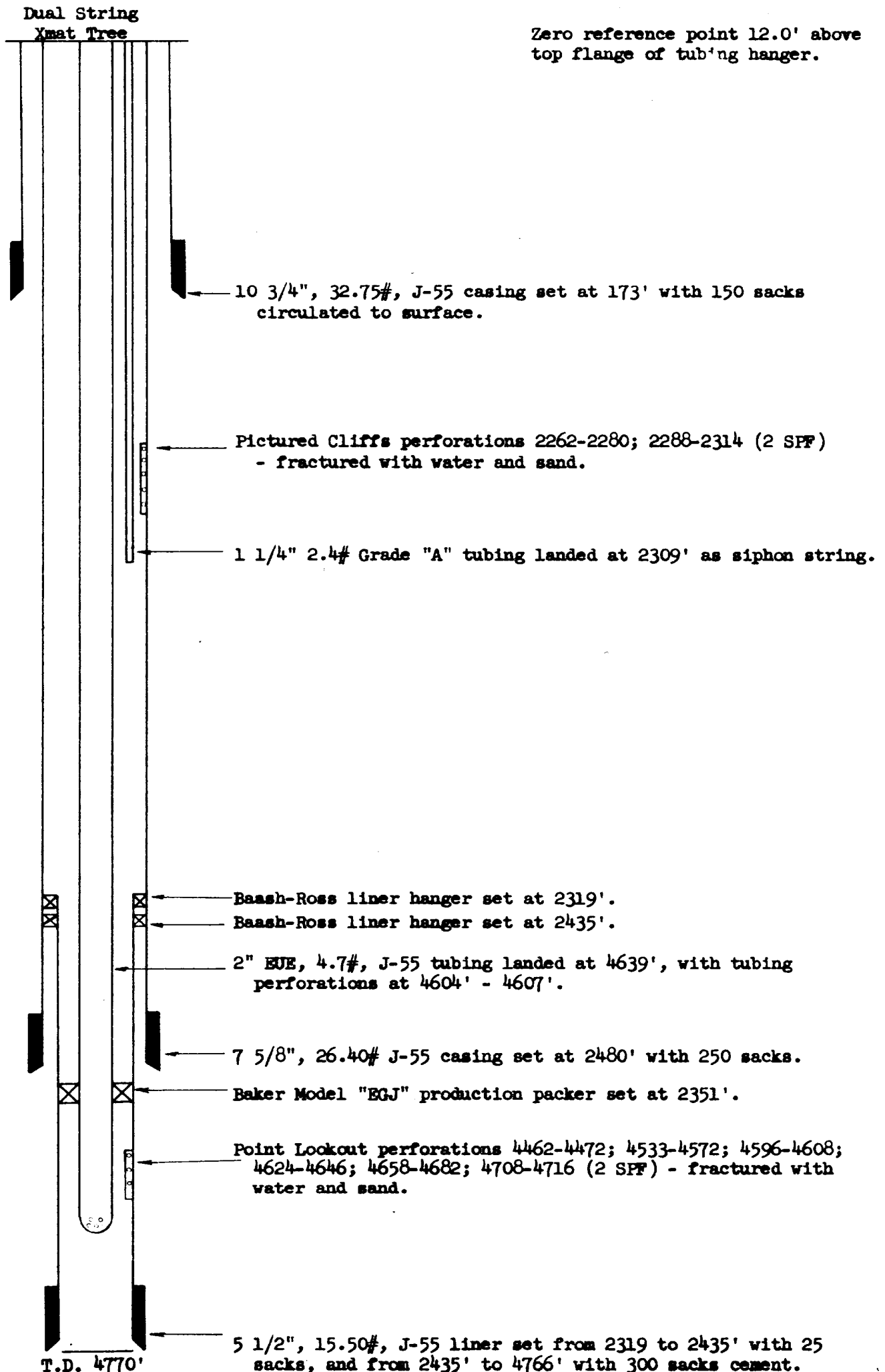
E. S. Oberly,
Division Petroleum Engineer

ESO:dgb

Encl.

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

SCHEMATIC DIAGRAM OF DUAL COMPLETION
El Paso Natural Gas Co. Florance No. 5-C (PM)
NE/4 Section 30, T-28-N, R-8-W



STATE OF NEW MEXICO)
COUNTY OF SAN JUAN)

I, Mack 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 December 7, 1957, I was called to the location of the El Paso Natural Gas Company Florence No. 5-C (FM) Well located in the SE1/4 of Section 30, Township 28 North, Range 8 West, N.M.P.M., for advisory service in connection with installation of a production packer. In my presence, a Baker Model "EQJ" Production Packer was set in this well at 2351 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 13 day of FEB, 1958.

Wm. A. MacIsaac
Notary Public in and for San Juan
County, New Mexico

My commission expires February 24, 1960.

1. The first part of the report

2. The second part of the report

3. The third part of the report

4. The fourth part of the report

5. The fifth part of the report

6. The sixth part of the report

7. The seventh part of the report

8. The eighth part of the report

9. The ninth part of the report

10. The tenth part of the report

11. The eleventh part of the report

12. The twelfth part of the report

13. The thirteenth part of the report

14. The fourteenth part of the report

15. The fifteenth part of the report

16. The sixteenth part of the report

EL PASO NATURAL GAS COMPANY

P. O. Box 997
Farmington, N.M.

January 15, 1958

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, Florance No. 5-C (PM), 1735'N,
890'E, Sec. 30-28-8, San Juan County, N.M.

Dear Mr. Arnold:

The subject well was dually completed in the Pictured Cliffs and Mesa Verde zones and a packer was set at 2351 feet. The Pictured Cliffs zone was tested through a 3/4" choke for three hours December 27, 1957 with the following data obtained:

Pictured Cliffs SIPC - 825 psig; shut-in 20 days
Pictured Cliffs SIPT - 825 psig

Mesa Verde SIPT - 1065 psig; shut-in 20 days

<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>
0	Open	1065		
15	271	1065		52
30	208	1065		54
45	180	1065		56
60	166	1065		56
180	112	1065	117	58

The choke volume for the Pictured Cliffs was 1498 MCF/D with an A.O.F. of 1529 MCF/D.

The Mesa Verde zone was tested January 10, 1958 with a 3/4" choke for three hours with the following data obtained:

Pictured Cliffs SIPC 835 psig; shut-in 14 days
Pictured Cliffs SIPT 835 psig

Mesa Verde SIPT 1075 psig; shut-in 34 days

<u>Time Minutes</u>	<u>MV Flowing Pressure Tubing Psig</u>	<u>PC SIPC Paig</u>	<u>MV Working Pressure, Psig</u>	<u>Temp ° F</u>
0	Open	835		
15	520	835		64
30	496	835		65
45	472	835		65
60	443	835		67
180	392	835	Calculated 755	68

The choke volume for the Mesa Verde test was 4818 MCF/D with an A.O.F. of 8080 MCF/D.

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

Very truly yours,



S. V. Roberts
Gas Engineer

SVR/jla

cc: W. M. Rodgers
E. S. Oberly (6)
File

EL PASO NATURAL GAS COMPANY
GAS WELL TEST

To: Mr. Ed E. Alsup

Date: January 10, 1958

From: Gas Engineering Department

Place: Farmington, New Mexico

DUAL COMPLETIONSubject: Test data on the El Paso Natural Gas Company Well,
FLORANCE NO. 5-C (M), San Juan County, New Mexico.

Tested By: S. V. Roberts

Location Sec. 30 T. 28N R. 8W 1735'N, 890'E

Shut-In Pressure P.C. SIPC 835 psig ; (Shut-in 14 days)
P.C.: SIPT 835 psig
M.V. SIPT 1075 psig; shut-in 34 days0.750" Choke Volume 4818 MCF/D @ 14.7 psia and 60° F. for 0.6
gravity gas. Flow through tubing for 3 hours.

Calculated 3 Hour Absolute Open Flow 8080 MCF/D

Working Pressure On Calculated = 755 Psig

Producing Formation Mesa Verde

Stimulation Method Sand Water Frac.

Total Depth 4770

Field Blanco

H2S Sweet to lead acetate.

Final SIPC (PC) - 835 psig

cc: D. H. Tucker

~~W. M. Rodgers~~~~Wayne Cheek~~~~Drilling Department~~

W. M. Rodgers

Wayne Cheek

Drilling Department

B. D. Adams

~~Jack Purvis~~

Jack Purvis

~~C. C. Kennedy~~

C. C. Kennedy

E. J. Coel, Jr.

A. J. Dudenhoeffer

File

Bill Parrish

Dean Rittmann

E. S. Oberly (6)

Samuel Smith

D. N. Canfield

Lewis D. Galloway
L. D. Galloway

EL PASO NATURAL GAS COMPANY
OPEN FLOW TEST DATADUAL COMPLETIONDATE January 10, 1958

Operator El Paso Natural Gas Company		Lease Florance No. 5-C (M)	
Location 1735'N, 890'E, Sec. 30-28-8		County San Juan	State New Mexico
Formation Mesa Verde		Pool Blanco	
Casing Diameter 7-5/8	Set At: Feet 2466	Tubing Diameter 2"	Set At: Feet 4627
Pay Zone: From 4462	To 4716	Total Depth 4770	
Stimulation Method Sand Water Frac.		Flow Through Casing	Flow Through Tubing X

Choke Size, Inches 0.750	Choke Constant C 12.365	5-1/2" liner. 2319 - 4766
Shut-In Pressure, Casing PC 835	PSIG 847 Days Shut-In 34 MV	Shut-In Pressure, Tubing 1075
Flowing Pressure: P 392	PSIG 404	Working Pressure: P _w Calculated
Temperature: T 68	F 0.75	F _{pv} (From Tables) 1.046
		Gravity 0.695

Final SIPC (PC) 835 psig. 1-1/4" at 2297. Packer at 2351. No sleeve.

CHOKE VOLUME = Q = C x P_c x F₁ x F₂ x F_{pv}

$$Q = 12.365 \times 404 \times .9924 \times .9292 \times 1.046 = 4818 \text{ MCF/D}$$

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

$$A_{of} = \left(\frac{1,181,569}{593,280} \right)^n \quad 1.9915^{-.75} \times 4818 = 1.6770 \times 4818$$

$$A_{of} = 8080 \text{ MCF/D}$$

TESTED BY S. V. Roberts

WITNESSED BY _____

cc: E. S. Oberly (6)

L. D. Galloway
L. D. Galloway

EL PASO NATURAL GAS COMPANY
GAS WELL TESTTo: **Mr. Ed E. Alsup**
From: Gas Engineering DepartmentDate: **December 27, 1957**
Place: **Farmington, New Mexico**DUAL COMPLETIONSubject: **Test data on the El Paso Natural Gas Company Well,
FLORANCE NO. 5-C (P), San Juan County, New Mexico.**Tested By: **S. V. Roberts**Location Sec. **30** T. **28N** R. **8W** **1735'N, 890'E**Shut-In Pressure **P.C. SIPC 825 psig**
..... **P.C. SIPT 825 psig** ; (Shut-in **20** days)
..... **M.V. SIPT 1065 psig**0.750" Choke Volume **1498** MCF/D @ 14.7 psia and 60° F. for 0.6
gravity gas. Flow through **casing** for 3 hours.Calculated 3 Hour Absolute Open Flow **1529** MCF/DWorking Pressure On **tubing** = **117** PsigProducing Formation **Pictured Cliffs**Stimulation Method **Sand Water Frac.**Total Depth **4770**Field **Undesignated**H₂S **Sweet** to lead acetate.**Final SIPT (MV) - 1065 psig**cc: D. H. Tucker
~~RT + + + + +~~
~~WT + + + + +~~
~~CT + + + + +~~
W. M. Rodgers
Wayne Cheek
Drilling Department
~~BT + + + + +~~
~~RT + + + + +~~
Jack Purvis
~~WT + + + + +~~
C. C. Kennedy
E. J. Coel, Jr.
A. J. Dudenhoeffer
File**Bill Parrish**
Dean Rittmann
Samuel Smith
E. S. Oberly (6)
D. N. Canfield*Lewis D Galloway*
L. D. Galloway

EL PASO NATURAL GAS COMPANY
OPEN FLOW TEST DATADUAL COMPLETIONDATE December 27, 1957

Operator El Paso Natural Gas Company		Lease Florance No. 5-C (P)	
Location 1735'N, 890'E, Sec. 30-28-8		County San Juan	State New Mexico
Formation Pictured Cliffs		Pool Undesignated	
Casing: Diameter 7-5/8	Set At: Feet 2466	Tubing: Diameter 1-1/4	Set At: Feet 2297
Pay Zone: From 2262	To 2314	Total Depth: 4770	
Stimulation Method Sand Water Frac.		Flow Through Casing X	Flow Through Tubing

Choke Size, Inches 0.750	Choke Constant: C 12.365	5-1/2" liner. 2319 - 4766	
Shut-In Pressure, Casing, PSIG PC 825	PSIG - 12 - PSIA 837	Days Shut-In 20	Shut-In Pressure, Tubing, PSIG - 12 - PSIA PC 825 837
Flowing Pressure: P, PSIG 112	PSIG - 12 - PSIA 124	Working Pressure: Pw, PSIG - 12 - PSIA 117	129
Temperature: T 58	F 0.85	Fpv (From Tables) 1.011	Gravity 0.646

Initial SIPT (MV) - 1065 psig. Final SIPT (MV) - 1065 psig. 2" at 4627. Packer at 2351.
No sleeve.

CHOKE VOLUME $Q = C \times P_c \times F_c \times F_g \times F_{pv}$

$$Q = 12.365 \times 124 \times 1.0019 \times .9645 \times 1.011 = 1498 \text{ MCF D}$$

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

$$Aof \left(\frac{700,569}{683,928} \right)^n = 1.0243^{.85} \times 1498 = 1.0206 \times 1498$$

$$Aof \quad 1529 \text{ MCF D}$$

TESTED BY S. V. Roberts

WITNESSED BY _____

cc: E. S. Oberly (6)

L. D. Galloway
L. D. Galloway