El Paso Natural Gas Company

El Paso, Texas

July 2, 1957

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 Blanco Mesa Verde Pool and the Wildcat Pictured Cliffs Pool. The El Paso Natural Gas Company San Juan 28-7 Unit No. 72 (PM) is located 1650 feet from the South line and 1090 feet from the West line of Section 35, Township 28 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. 10-3/4" surface casing set at 171' with 250 sacks of cement circulated to the surface.
2. 7-5/8" intermediate casing set at 2919' and cemented with 250 sacks of cement. Top of cement by temperature survey was 1600' which is above the top of the Pictured Cliffs at 2706'.
3. 5-1/2" liner set from 2904' to 5117' with 250 sacks of cement. The top of the liner was squeezed with 200 sacks of cement.
4. The casing and liner were tested for leaks before perforating.
5. The Point Lookout section was perforated in four intervals and fractured with water and sand.
6. The Cliff House section was perforated in four intervals and fractured with water and sand.
7. The Pictured Cliffs formation was perforated in one interval and fractured with water and sand.
8. All perforations were cleaned out after treatment and completion was accomplished by setting a Baker Model EGJ production packer on 2" EUE tubing at 2957' with the tubing perforations set opposite the Point Lookout perforation. 1-1/4" Grade "B" line pipe was landed, with the tubing perforations set opposite the Pictured Cliffs perforations, as a siphon string. The Mesa Verde gas will be produced through the 2" tubing and the Pictured Cliffs gas through the casing.

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OIL CON. COM.
DIST. 3

9. A Garrett circulating sleeve was installed in the 2" tubing string just below the Pictured Cliffs perforations. This will enable bottom hole pressure tests to be taken in the future if it be so required.
10. Initial potential tests have been run and commercial production has been found in both formations. A packer leakage test has been run and witnessed by the Aztec office of the Oil Conservation Commission. This test shows no communication in the well bore between the two producing formations.

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

Since El Paso Natural Gas Company is the sole operator of the San Juan 28-7 Unit the approval of any other operators has not been sought. 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 35, Township 28 North, Range 7 West to the Mesa Verde formation and the SW/4 of Section 35, Township 28 North, Range 7 West to the Pictured Cliffs formation.

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

Yours truly,

ORIGINAL SIGNED E. J. COEL

E. J. Coel
Senior Petroleum Engineer

EJC/gks
Encl.
cc: Emery Arnold
R. L. Hamblin
Phil McGrath

ORIGINAL SIGNED

EL PASO NATURAL GAS COMPANY

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

June 3, 1957

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, San Juan 28-7 Unit No. 72, Rio Arriba County, New Mexico.

Dear Mr. Arnold:

This well was dually completed in the Pictured Cliffs and Mesa Verde formations. A production packer was set at 2946 feet. The Pictured Cliffs zone was tested on May 24, 1957 and the following information was obtained:

SIPC and SIPT (Pictured Cliffs) - 1071 psig- shut-in 24 days.
SIPT (Mesa Verde) - 1106 psig

The three hour open flow test through a 3/4" choke was started at 10:25 A.M.

Time	Casing Choke Pressure Psig	Tubing Pressure (Mesa Verde) Psig	Temp. °F
10:25	Opened Casing	1106	
10:40	490	1106	
10:55	304	1106	
11:10	220	1106	
11:25	176	1107	
12:25	105	1108	
1:25	82	1109	62

The calculated choke volume was 1131 MCF/D and the A.O.F. was 1139 MCF/D.

On May 31, 1957 the Mesa Verde zone was tested and the following information was obtained:

SIPC (Pictured Cliffs) 1048 psig
SIPT (Mesa Verde) - 1113 psig: shut-in 7 days.

The three hour open flow test period through a 3/4" choke was started at 11:26 A.M.

Time	Tubing Choke Press. (MV) Psig	Casing Pressure (P.C.) Psig	Temp. °F
11:26	Opened tubing		
11:41	530	1053	
11:56	468	1054	
12:11	435	1055	
12:26	414	1054	
1:26	376	1052	
2:26	353	1049	75

The calculated choke volume was 4307 MCF/D and the A.O.F. was 6191 MCF/D.

Very truly yours,

R. A. Ullrich

R. A. Ullrich
Gas Engineer

RAU/jla

cc- W. T. Hollis
W. M. Rodgers
E. J. Coel, Jr. (6)
File

Form 23-24 (Rev. 5-56)

EL PASO NATURAL GAS COMPANY
GAS WELL TEST

To: Mr. E. E. Alsup

From: Gas Engineering Department

Date: May 31, 1957

Place: Farmington, New Mexico

DUAL COMPLETION

Subject: Test data on the El Paso Natural Gas Company Well, SAN JUAN 28-7 UNIT NO. 72, Rio Arriba County, N.M.

Tested By: R. A. Ullrich

Location ..... Sec. 35 T. 28 R. 7 , 1650'S, 1090'W

Shut-In Pressure ..... P.C. SIPC 1048 psig ; (Shut-in 7 days)
M.V. SIPT 1113 psig

0.750" Choke Volume ..... 4307 MCF/D @ 14.7 psia and 60° F. for 0.6 gravity gas. Flow through for 3 hours.

Calculated 3 Hour Absolute Open Flow ..... 6191 MCF/D

Working Pressure On .....Calculated..... = 685 Psig

Producing Formation ..... Mesa Verde

Stimulation Method ..... Sand Water Frac

Total Depth ..... 5120 c/o 5050. Packer at 2946

Field ..... Blanco

H_2S ..... Sweet to lead acetate.

Final SIPC (Pictured Cliffs) - 1049 psig

Lewis D. Galloway

L. D. Galloway

cc: D. H. Tucker
~~J. F. Hollis~~
W. T. Hollis
~~C. G. Holder~~
W. M. Rodgers
~~Boyd Child~~
Drilling Department
B. D. Adams
Roland Hamblin
Jack Purvis
~~W. V. Holt~~
C. C. Kennedy
E. J. Coel, Jr. (6)
A. J. Dudenhoeffer
File

H. H. Lines
Bill Parrish
Dean Rittmann

Well blew a heavy spray of distillate during entire test period.

Form 23-24 (Rev. 5-56)

EL PASO NATURAL GAS COMPANY
GAS WELL TEST

To: Mr. E. E. Alsup

From: Gas Engineering Department

Date: May 24, 1957

Place: Farmington, New Mexico

DUAL COMPLETION

Subject: Test data on the El Paso Natural Gas Company Well, SAN JUAN 28-7 UNIT NO. 72, Rio Arriba County, N.M.

Tested By: R. A. Ullrich

Location ..... Sec. 35 T. 28 R. 7 , 1650'S, 1090'W

Shut-In Pressure ..... P.C. SIPC 1071 psig ; (Shut-in 24 days)
P.C. SIPT 1071 psig
M.V. SIPT 1106 psig

0.750" Choke Volume ..... 1131 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 ..... 1139 MCF/D

Working Pressure On tubing ..... = 84 Psig

Producing Formation ..... Pictured Cliffs

Stimulation Method ..... Sand Water Frac.

Total Depth ..... 5120 - c/o 5050. Packer at 2946

Field ..... Wildcat

H_2S ..... Sweet to lead acetate.

Lewis D. Galloway

L. D. Galloway

cc: D. H. Tucker
~~R. Whitehead~~
W. T. Hollis
~~E. O. Wood~~
W. M. Rodgers
~~Wm. Cheek~~
Drilling Department
B. D. Adams
Roland Hamblin
Jack Purvis
~~M. Vinson~~
C. C. Kennedy
E. J. Coel, Jr. (6)
A. J. Dudenhoeffer
File

H. H. Lines
Bill Parrish
Dean Rittmann

FORM 2-378 (1-57)

EL PASO NATURAL GAS COMPANY

DUAL COMPLETION

OPEN FLOW TEST DATA

DATE May 31, 1957

Operator: El Paso Natural Gas Company		Lease: San Juan 28-7 Unit No. 72	
Location: 1650'S, 1090'W, Sec. 35-28-7		County: Rio Arriba	State: New Mexico
Formation: Mesa Verde		Pool: Blanco	
Casing: Diameter: 7 5/8	Set At: Feet: 2909	Tubing: Diameter: 2"	Set At: Feet: 4856
Pay Zone: From: 4408	To: 5034	Total Depth: 5120 - c/o 5050.	Packer at 2946
Stimulation Method: Sand Water Frac.		Flow Through Casing:	Flow Through Tubing: X

Choke Size, Inches: 0.75	Choke Constant: C: 12.365		5 1/2" liner - 2904 to 5117		
Shut-in Pressure, Casing, PSIG: P.C. 1048	+ 12 = PSIA: 1060	Days Shut-in: 7	Shut-in Pressure, Tubing PSIG: 1113	+ 12 = PSIA: 1125	
Flowing Pressure: P PSIG: 353	+ 12 = PSIA: 365		Working Pressure: P_w PSIG: Calculated	+ 12 = PSIA: 697	
Temperature: T F: 75	n: .75		Fpv: From Tables: 1.038	Gravity: .690	

Final SIPC (Pictured Cliffs) - 1049 psig

CHOKE VOLUME = Q = $C \times P_t \times F_t \times F_g \times F_{pv}$

Q = 12.365 x 365 x .9859 x .9325 x 1.038 = 4307 MCF/D

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

Aof = $\left(\frac{1,265,625}{779,816} \right)^n$ $1.6229^{.75} \times 4307 = 1.4375 \times 4307$

Aof = 6191 MCF/D

Well blew heavy spray of distillate during entire test period.

TESTED: R. A. Ullrich

WITNESSED BY:

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

L. D. Galloway

FORM 24-15

EL PASO NATURAL GAS COMPANY

DUAL COMPLETION

OPEN FLOW TEST DATA

DATE May 24, 1957

Operator: El Paso Natural Gas Company		Lease: San Juan 28-7 Unit No. 72	
Location: 1650'S, 1090'W, Sec. 35-28-7		County: Rio Arriba	State: New Mexico
Formation: Pictured Cliffs		Pool: Wildcat	
Casing: Diameter: 7 5/8	Set At: Feet: 2909	Tubing: Diameter: 1 1/4	Set At: Feet: 2725
Pay Zone: From: 2704	To: 2736	Total Depth: 5120 /c/o/ - 5050.	Packer at 2946
Stimulation Method: Sand Water Frac.		Flow Through Casing: X	Flow Through Tubing:

Choke Size, Inches: 0.75		Choke Constant: C: 12.365					
Shut-In Pressure, Casing, PSIG: 1071	+ 12 = PSIA: 1083	Days Shut-In: 24	Shut-In Pressure, Tubing PSIG: 1071		+ 12 = PSIA: 1083		
Flowing Pressure: P PSIG: 82	+ 12 = PSIA: 94		Working Pressure: P_w PSIG: 84		+ 12 = PSIA: 96		
Temperature: T F: 62	n: 85		Fpv (From Tables): 1.007		Gravity: .640		

SIPT (MV) - 1106 psig; Final SIPT (MV) - 1109 psig

CHOKE VOLUME Q = $C \times P_t \times F_t \times F_g \times F_{pv}$

Q = 12.365 x 94 x .9981 x .9682 x 1.007 = 1131 MCF D

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

Aof $\left(\frac{1,172,889}{1,163,673} \right)^n$ $1.0079^{.85}$ x 1131 = 1.0067 x 1131

Aof 1139 MCF D

TESTED BY: R. A. Ullrich

WITNESSED BY:

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

L. D. Galloway

L. D. Galloway

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 April 30, 1957, I was called to the location of the El Paso Natural Gas Company San Juan 28-7 Unit No. 72 (PM) Well located in the NW/4 SW/4 of Section 35, Township 28 North, Range 7 West, N.M.P.M. for the purpose of installing a production packer. Under my direct supervision a Baker Model "EGJ" production packer was set at 2957 feet. The production packer was properly set in accordance with the usual practices and customs of the industry.

Mack M. Mahaffey

SCHEMATIC DIAGRAM OF DUAL COMPLETION
EPNG SAN JUAN 28-7 UNIT NO. 72 (PM)
(SW 35-28-7)

Measurement reference point is
10' above top of tubing hanger