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 27-5 Unit No. 20 (PM) is located 800 feet from the North line and 990 feet from the East line of Section 35, Township 27 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico.

This well has been completed in the Point Lookout and Menefee 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 174' with 150 sacks of cement circulated to the surface.
2. 7-5/8" intermediate casing set at 3636' and cemented with 250 sacks of cement. Top of cement by temperature survey was 2450' which is above the top of the Pictured Cliffs at 3447'.
3. 5-1/2" liner set from 3520' to 5804' with 300 sacks of cement.
4. The casing and liner were tested for leaks before perforating.
5. The Point Lookout section was perforated in five intervals and fractured with water and sand.
6. The Menefee section was perforated in two 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 EEJ production packer on 2" EUE tubing at 3600' 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.

COPY

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.

The offset operator at the boundary of the unit has been notified by registered mail of intentions to dual complete and enclosed is a letter of approval from the offset operator. Also enclosed are:

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

It is intended to dedicate the E/2 of Section 35, Township 27 North, Range 5 West to the Mesa Verde formation and the NE/4 of Section 35, Township 27 North, Range 5 West to the Pictured Cliffs formation.

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

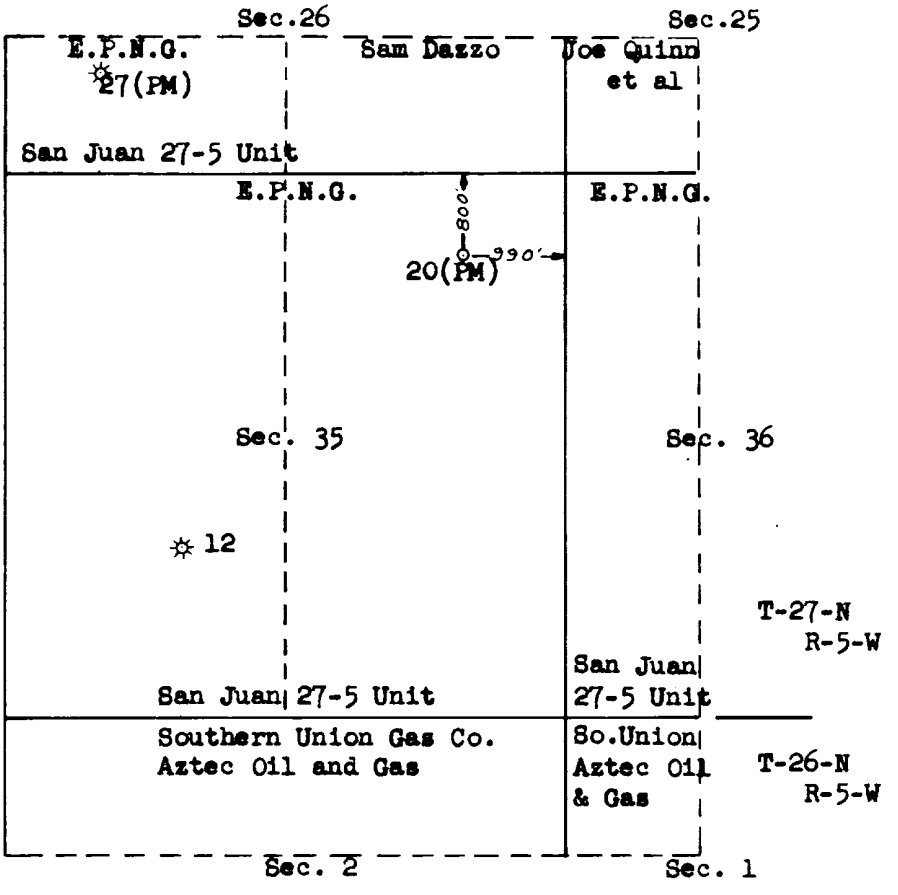
Yours truly,

ORIGINAL SIGNED E. J. COEL

E. J. Coel
Senior Petroleum Engineer

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

PLAT SHOWING LOCATION OF DUAL COMPLETED EL PASO NATURAL GAS SAN JUAN 27-5 UNIT NO. 20 (PM) AND OFFSET ACREAGE



EL PASO NATURAL GAS COMPANY EL PASO, TEXAS		
SCALE	DATE	No.
DRAWN BY	CHECKED BY	

FORM 7-132 (10-56)

Form 23-24 (Rev. 5-57)

EL PASO NATURAL GAS COMPANY
GAS WELL TEST

To: Mr. E. E. Alsup

Date: June 14, 1957

From: Gas Engineering Department

Place: Farmington, New Mexico

DUAL COMPLETION

Subject: Test data on the El Paso Natural Gas Company Well, SAN JUAN 27-5 UNIT NO. 20, Rio Arriba County, N.M.

Tested By: K. C. McBride

Location ..... Sec. 35 T. 27 R. 5 800'N, 990'E

Shut-In Pressure ..... P.C. SIPC 1041 psig ; (Shut-in 14 days)
P.C. SIPT 1042 psig
M.V. SIPT 1088 psig

0.750" Choke Volume ..... 8719 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 ..... 15,093 MCF/D

Working Pressure On tubing ..... = 715 Psig

Producing Formation ..... Pictured Cliffs

Stimulation Method ..... Sand Water Frac.

Total Depth ..... 5800 - Packer at 3600

Field ..... Undesignated

H_2S ..... Sweet to lead acetate.

Ending SIPT (Mesa Verde) - 1088 psig

Lewis D. Galloway.
L. D. Galloway

cc: D. H. Tucker
R. ~~M. Tibbett~~
W. T. Hollis
C. ~~G. Webb~~
W. M. Rodgers
W. ~~Odel Childs~~
Drilling Department
B. D. Adams
Roland Hamblin
Jack Purvis
W. ~~M. Tibbett~~
C. C. Kennedy
E. J. Coel, Jr. (6)
A. J. Dudenhoeffer
File

H. H. Lines
Bill Parrish
Dean Rittmann

Form 23-24 (Rev. 5-56)

EL PASO NATURAL GAS COMPANY
GAS WELL TEST

To: Mr. E. E. Alsup

From: Gas Engineering Department

Date: June 7, 1957

Place: Farmington, New Mexico

DUAL COMPLETION

Subject: Test data on the El Paso Natural Gas Company Well, SAN JUAN 27-5 UNIT NO. 20, Rio Arriba County, New Mexico.

Tested By: K. C. McBride. Witnessed By: Fred Cook, New Mexico Oil Conservation Commission

Location ..... Sec. 35 T. 27 R. 5 , 800'N, 990'E

Shut-In Pressure ..... P.C. SIPC 1019 psig ; (Shut-in 7 days)
M.V. SIPT 1072 psig

0.750" Choke Volume ..... 1625 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 ..... 1705 MCF/D

Working Pressure On calculated ..... = 258 Psig

Producing Formation ..... Mesa Verde

Stimulation Method ..... Sand Water Frac

Total Depth ..... 5800 - Packer at 3600.

Field ..... Blanco

H_2S ..... Sweet to lead acetate.

Ending Pictured Cliffs SIPC - 1021

L. D. Galloway

L. D. Galloway

By: L. Fenderich

cc: D. H. Tucker
~~R. W. Harris~~
W. T. Hollis
~~C. O. Walker~~
W. M. Rodgers
~~Wayne Cook~~
Drilling Department
B. D. Adams
Roland Hamblin
Jack Purvis
~~W. W. Hofik~~
C. C. Kennedy
E. J. Coel, Jr. (6)
A. J. Dudenhoeffer
File

H. H. Lines
Bill Parrish
Dean Rittmann

EL PASO NATURAL GAS COMPANY

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

June 18, 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 27-5 Unit No. 20, NE 35-27-5, Rio Arriba County, New Mexico.

Dear Mr. Arnold:

The subject well was dually completed in the Pictured Cliffs and Mesa Verde zones. A packer was set at 3600 feet and the Mesa Verde zone was tested June 7, 1957 with the following results:

Pictured Cliffs - SIPC 1019 psig
Mesa Verde - SIPT 1072 psig; shut-in 7 days.

The tubing was opened at 11:05 A.M. through a 3/4 inch choke and tested for three hours.

Time	Tubing Flow Pressure Psig	Temp°F.	Shut-In Casing Pressure Psig
11:05	Opened tubing		1019
11:20	311	66	1021
11:35	236	68	1020
11:50	200	70	1021
12:05	181	70	1021
1:05	143	75	1021
2:05	128	74	1022

The measured choke volume was 1625 MCF/Day. The Pictured Cliff zone was tested June 14, 1957 through a 3/4 inch choke with the following results:

Pictured Cliffs - SIPT 1042 psig; shut-in 14 days.
Pictured Cliffs - SIPC 1041 psig
Mesa Verde - SIPT 1088 psig

The casing was opened at 11:00 A.M. with the following results:

Time	Casing Flow Pressure Psig	Temp°F	Tubing Shut-In Pressure Psig
11:00	Opened casing		1088
11:15	858	71	1089
11:30	848	75	1090
11:45	830	77	1090
12:00	791	78	1090
1:00	731	80	1089
2:00	697	76	1089

The measured choke volume was 8719 MCF/Day. The data obtained from the tests indicates there is no packer leakage.

Very truly yours,

K. C. McBride
Gas Engineer

KCMcB/jla

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

EL PASO NATURAL GAS COMPANY

DUAL COMPLETION

OPEN FLOW TEST DATA

DATE June 14, 1957

Operator: El Paso Natural Gas Company		Lease: San Juan 27-5 Unit No. 20	
Location: 800'N, 990'E, Sec. 35-27-5		County: Rio Arriba	State: New Mexico
Formation: Pictured Cliffs		Pool: Undesignated	
Casing: Diameter: 7 5/8	Set At: Feet: 3626	Tubing: Diameter: 1 1/4	Set At: Feet: 3461
Pay Zone: From: 3448	To: 3468	Total Depth: 5800 Packer at 3600	
Stimulation Method: Sand Water Frac.		Flow Through: Casing: X	Flow Through Tubing:

Choke Size, Inches: .750	Choke Constant: C: 12.365	5 1/2" liner 3520 to 5804	
Shut-In Pressure, Casing: PSIG: 1041 + 12 = PSIA: 1053	Days Shut-In: 14	Shut-In Pressure, Tubing: PSIG: 1042 + 12 = PSIA: 1054	
Flowing Pressure: P: PSIG: 697 + 12 = PSIA: 709		Working Pressure: P_w: PSIG: 715 + 12 = PSIA: 727	
Temperature: T: 76	F: .85	Fpv (From Tables): 1.075	Gravity: .680

Shut-In pressure Mesa Verde 1088 psig; Ending shut-in pressure Mesa Verde - 1088 psig.

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

$Q = 12.365 \times 709 \times .9850 \times .9393 \times 1.075 = 8719$ MCF/D

OPEN FLOW: $A.O.F. = Q \left(\frac{P_c^2}{P_c^2 - P_w^2} \right)^n$

$A.O.F. = \left(\frac{1,110,916}{582,387} \right)^n \quad 1.9075^{.85} \times 8719 = 1.731 \times 8719$

$A.O.F. = 15,093$ MCF/D

WITNESSED BY: K. C. McBride

APPROVED BY:

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

L. D. Galloway

L. D. Galloway

FORM 23-F5 6-56

DUAL COMPLETION

EL PASO NATURAL GAS COMPANY

OPEN FLOW TEST DATA

DATE June 7, 1957

Operator: El Paso Natural Gas Company		Lease: San Juan 27-5 Unit No. 20	
Location: 800'N, 990'E, Sec. 35-27-5		County: Rio Arriba	State: New Mexico
Formation: Mesa Verde		Pool: Blanco	
Casing: Diameter: 7 5/8	Set At: Feet: 3047	Tubing: Diameter: 2"	Set At: Feet: 5283
Pay Zone: From: 5418	To: 5738	Total Depth: 5800 - Packer at 3600	
Stimulation Method: Sand Water Frac		Flow Through Casing:	Flow Through Tubing: X

Choke Size, Inches: .750	Choke Constant: C: 12.365		5 1/2" liner at 5439		
Shut-In Pressure, Casing, PSIG: P.C. 1019	+ 12 = PSIA	Days Shut-In: 7	Shut-In Pressure, Tubing PSIG: M.V. 1072	+ 12 = PSIA: 1084	
Flowing Pressure: P PSIG: 128	+ 12 = PSIA: 140		Working Pressure: P_w PSIG: Calculated	+ 12 = PSIA: 270	
Temperature: T °F: .74	n: .75		Fpv (From Tables): 1.013	Gravity: .684	

Ending P.C. SIPC - 1021

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

Q = 12.365 x 140 x .9868 x .9393 x 1.013 = 1625 MCF D

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

Aof $\left(\frac{1,175,056}{1,102,156} \right)^n = 1.066^{.75} \times 1625 = 1.0491 \times 1625$

Aof = 1705 MCF D

TESTED BY: K. C. McBride

WITNESSED BY: Fred Cook, New Mexico Oil Conservation Commission

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

By: [signature]

L. D. Galloway

L. D. Galloway

STATE OF NEW MEXICO)
)
COUNTY OF SAN JUAN)

I, J. E. Rowland, being first duly sworn upon my oath depose and say as follows:

I am an employee of Baker Oil Tools, Inc., and that on May 31, 1957, I was called to the location of the El Paso Natural Gas Company San Juan 27-5 Unit No. 20 Well located in the NE/4 of Section 35, Township 27 North, Range 5 West, N.M.P.M. for the purpose of installing a production packer. Under my direct supervision a Baker Model "EJ" production packer was set at 3600 feet. The production packer was properly set in accordance with the usual practices and customs of the industry.

J. E. Rowland

Subscribed and sworn to before me, a Notary Public in and for San Juan County, New Mexico, the 4 day of June, 1957.

Notary Public in and for San Juan County, New Mexico

My commission expires:

2-24-60

SCHEMATIC DIAGRAM OF DUAL COMPLETION
EPNG SAN JUAN 27-5 UNIT WELL NO. 20 (PM)
(NE Section 35-T27N-R5W)

Measurement reference point is 10.00' above top flange of tubing hanger.