El Paso Natural Gas Company

El Paso, Texas

October 30, 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

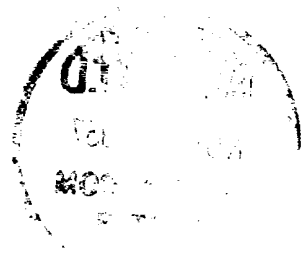
Dear Sir:

This is a request for administrative approval for a well dually completed in the Blanco Mesa Verde Pool and the Aztec Pictured Cliffs Pool Extension. The El Paso Natural Gas Company Riddle No. 3-F (PM) is located 1150 feet from the North line and 1131 feet from the East line of Section 20, Township 28 North, Range 8 West, N.M.P.M., San Juan County, New Mexico.

This well has been completed in the Cliff House and Point Lookout 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 175 feet with 150 sacks of cement circulated to the surface.
2. 7 5/8" intermediate casing set at 2569 feet with 300 sacks of cement. Top of the cement is at 1100 feet which is above the top of the Pictured Cliffs formation at 2425 feet.
3. 5 1/2" liner set from 2511 feet to 4831 feet with 300 sacks of cement. The top of the liner was squeezed with 50 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 one interval 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 after treatment and completion was accomplished by setting a Baker Model EGJ production packer on 2" EUE tubing at 2617 feet with the tubing perforations set opposite the Point Lookout perforations. 1 1/4" Grade B line pipe 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" EUE tubing and the Pictured Cliffs gas through the casing.

COPY



9. A Garrett circulating sleeve was installed in the 2" EUE tubing string just below the Pictured Cliffs perforations. This will enable the bottom hole pressure tests to be taken at a future date if so required.
10. 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.

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

The El Paso Natural Gas Company holds all leases immediately adjacent to the drilling block, therefore, the approval of any other operator has not been sought. I am enclosing:

(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 N/2 of Section 20, Township 28 North, Range 8 West to the Mesa Verde formation and the NE/4 of Section 20, 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,

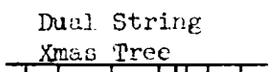
ORIGINAL SIGNED E. S. OBERLY

E. S. Oberly
Division Petroleum Engineer

ESO/dgb
Encl.
cc: Emery Arnold
Sam Smith
Phil McGrath

SCHEMATIC DIAGRAM OF DUAL COMPLETION
E. P. N. G. Riddle #3-F (PM)
(NE Section 20, T28N, R9W)

Zero Reference Point 10.0' above top flange of tubing hanger.



10 3/4", 32.75# S. W. casing set at 175' with 150 sacks.

Pictured Cliffs perforations 2362'-2396; 2410'-2416'; 2420'-2444' (2 SPF) fractured with water and sand.

1 1/4", 2.3# Grade "B" line pipe landed at 2444' as siphon.

Garrett Circulating Sleeve at 2457' (for BHP Tests).

Burns liner hanger set at 2511', squeezed top of liner with 50 sacks Neat cement.

2" EUE, 20.40# J-55 tubing landed at 4407' with tubing perforations 4404' to 4407'.

7 5/8", 26.40# J-55 casing set at 2569' with 300 sacks.

Baker "EGJ" production packer set at 2617'.

Cliff House perforations 4076'-4108' (2 SPF) fractured with water and sand.

Point Lookout perforations 4620'-4640'; 4664'-4684'; 4700'-4720' (2 SPF) fractured with water and sand.

5 1/2", 15.50# J-55 liner set from 2511' to 4831' with 300 sacks.

STATE OF NEW MEXICO)
)
COUNTY OF SAN JUAN)

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

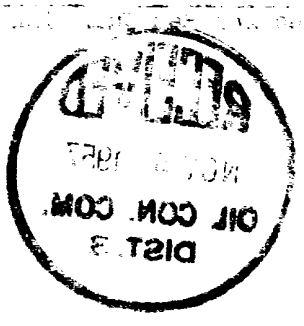
I am an employee of Baker Oil Tools, Inc., and that on September 26, 1957, I was called to the location of the El Paso Natural Gas Company Riddle #3-F (PM) Well located in the NE/4 NE/4 of Section 20, Township 28 North, Range 8 West, N.M.P.M., for advisory service in connection with installation of a production packer. In my presence, a Baker Model "EGJ" Production Packer was set in this well at 2617 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 1 day of Nov, 1957.

Notary Public in and for San Juan County, New Mexico

My commission expires February 24, 1960.


OIL CON. COM.
DIST. 3

EL PASO NATURAL GAS COMPANY

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

October 11, 1957

Mr. E. C. Arnold
Oil Conservation Commission
1[illegible] East Chaco
Aztec, New Mexico

Re: Packer Leakage Test on the El Paso Natural Gas Company Well, Riddle No. 3-F (PM), 1150'N, 1131'E, Sec. 20-28-8, San Juan County, New Mexico.

Dear Mr. Arnold:

The subject well was dually completed in the Pictured Cliffs and Mesa Verde zones and a packer was set at 2617 feet. The Pictured Cliffs zone was tested through a 3/4" choke for three hours October 3, 1957 with the following data obtained:

Pictured Cliffs SIPC - 358 psig; shut-in 7 days
Pictured Cliffs SIPT - 858 psig

Mesa Verde SIPT - 1059 psig; shut-in 7 days

Time Minutes	PC Flowing Pressure Casing Psig	MV SIPT Psig	PC Working Pressure, Psig	Temp °F
15	342	1056		57
30	244	1057		59
45	202	1057		60
60	186	1058		61
180	129	1059	136	63

The choke volume for the Pictured Cliffs was 1684 MCF/D with an A.O.F. of 1727 MCF/D.

The Mesa Verde zone was tested October 10, 1957 with a 3/4" choke for three hours with the following data obtained:

Pictured Cliffs SIPC - 883 psig; shut-in 7 days
Pictured Cliffs SIPT - 883 psig

Mesa Verde SIPT - 1073 psig; shut-in 14 days

Time Minutes	MV Flowing Pressure Tubing Psig	PC SIPC Psig	MV Working Pressure, Psig	Temp°F
0	On tubing	883		
15	520	887		68
30	471	887		68
45	451	887		68
60	433	887		69
120	376	888	Calculated 711	70

The choke volume for the Mesa Verde test was 4656 MCF/D with an A.O.F. of 7221 MCF/D.

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

Very truly yours,

R. A. Ullrich
Gas Engineer

RAU/jla

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

Form 23-24 Rev. 5-56

EL PASO NATURAL GAS COMPANY
GAS WELL TEST

To: Mr. E. E. Alsup | Date: October 10, 1957

From: Gas Engineering Department | Place: Farmington, New Mexico

DUAL COMPLETION

Subject: Test data on the El Paso Natural Gas Company Well, RIDDLE NO. 3-F, San Juan County, New Mexico.

Tested By: R. A. Ullrich

Location .... Sec. 20 T. 28 R. 8 , 1150'N, 1131'E

Shut-In Pressure .... P.C. SIPC 883 psig ; M.V. SIPT 1073 psig ; (Shut-in 14 days)

0.750" Choke Volume .... 4656 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 .... 7221 MCF/D

Working Pressure On ....Calculated.... = 711 Psig

Producing Formation .... Mesa Verde

Stimulation Method .... Sand Water Frac.

Total Depth 4840

Field .... Blanco

H_2S .... Sweet to lead acetate.

Final SIPC (PC) - 888 psig; Packer at 2617

Louis D. Galloway
L. D. Galloway

cc: D. H. Tucker
~~R. W. Harris~~
~~W. T. Hollis~~
~~C. O. Walker~~
W. M. Rodgers
Wayne Cheek
Drilling Department
B. D. Adams
~~Roland Hamblin~~
Jack Purvis
~~W. V. Hollett~~
C. C. Kennedy
E. J. Coel, Jr.
A. J. Dudenhoeffer
File
Bill Parrish
Dean Rittmann
E. S. Oberly (6)
Samuel Smith

FORM 2-075 (7-58)

EL PASO NATURAL GAS COMPANY

DUAL COMPLETION

OPEN FLOW TEST DATA

DATE October 10, 1957

Operator: El Paso Natural Gas Company		Lease: Riddle No. 3-F	
Location: 1150'N, 1131'E, Sec. 20-28-8		County: San Juan	State: New Mexico
Formation: Mesa Verde		Pool: Blanco	
Casing: Diameter: 7-5/8	Set At: Feet: 2559	Tubing: Diameter: 2	Set At: Feet: 4397
Pay Zone: From: 4076	To: 4740	Total Depth: 4840	
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 - 2511 to 4834	
Shut-In Pressure, Casing, PSIG: PC 883	+ 12 = PSIA: 895	Days Shut-In: 14	Shut-In Pressure, Tubing PSIG: 1073	+ 12 = PSIA: 1085	
Flowing Pressure: P PSIG: 376	+ 12 = PSIA: 388		Working Pressure: P_w PSIG: Calculated	+ 12 = PSIA: 723	
Temperature: T F: 69	n: .75		Fpv (From Tables): 1.042	Gravity: .680	

Final SIPC (PC) - 888 psig; Packer at 2617

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

$Q = 12.365 \times 388 \times .9915 \times .9393 \times 1.042 = 4656$ MCF/D

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

$Aof = \left(\frac{1,177,225}{654,496} \right)^{.75} = 1.7986 \times 4656 = 1.5510 \times 4656$

Aof 7221 MCF D

RECEIVED
NOV 5 1957
OIL CON. COM.
DIST. 3

TESTED BY R. A. Ullrich

WITNESSED BY

cc: E. S. Oberly (6)

L. D. Galloway

L. D. Galloway

Form 23-24 (Rev. 5-55)

EL PASO NATURAL GAS COMPANY
GAS WELL TEST

To: Mr. E. E. Alsup

From: Gas Engineering Department

Date: October 3, 1957

Place: Farmington, New Mexico

DUAL COMPLETION

Subject: Test data on the El Paso Natural Gas Company Well, RIDDLE NO. 3-F, San Juan County, N.M.

Tested By: Richard Ullrich. Checked by: Bob Davis

Location ..... Sec. 20 T. 28 R. 8 1150'N, 1131'E

Shut-In Pressure ..... P.C. SIPC 858 psig ; (Shut-in 7 days)
P.C. SIPT 858 psig
M.V. SIPT - 1056 psig

0.750" Choke Volume ..... 1684 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 ..... 1727 MCF/D

Working Pressure On tubing ..... = 136 Psig

Producing Formation ..... Pictured Cliffs

Stimulation Method ..... Sand Water

Total Depth 4840

Field ..... Undesignated

H_2S ..... Sweet to lead acetate.

RECEIVED
NOV 5 1957
OIL CON. COM.
DIST. 3

Final SIPT (MV) - 1059 psig Packer at 2617. Sleeve at 2457

Lewis D Galloway.
L. D. Galloway

cc: D. H. Tucker
~~R. W. Hicks~~
~~W. T. Hollis~~
~~C. O. Mueller~~
W. M. Rodgers
Wayne Cheek
Drilling Department
B. D. Adams
~~Robert Goodwin~~
Jack Purvis
~~W. V. Mehl~~
C. C. Kennedy
E. J. Coel, Jr.
A. J. Dudenhoeffer
File

Bill Parrish
Dean Rittmann
E. S. Oberly (6)
Samuel Smith
Kenneth Folk