

El Paso Natural Gas Company

El Paso, Texas

April 4, 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 to request administrative approval of a well dually completed in the Blanco-Mesa Verde and South Blanco Pictured Cliffs Extension Pools. The El Paso Natural Gas Company Storey No. 10-C (PM) is located 1650 feet from the West line, 1090 feet from the South line, Section 35, Township 28 North, Range 9 West, N.M.P.M., San Juan County, New Mexico. This well is completed in the Point Lookout member 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 176' with 125 sacks of cement circulated to surface.
2. 7-5/8" intermediate casing set at 2494' with 200 sacks of cement.
3. 5-1/2" liner set from 2453' to 4747' with 300 sacks of cement.
4. Protection of the Pictured Cliffs formation was accomplished by circulating cement behind 7-5/8" casing before perforating. The casing and liner were both tested for leaks. None were found.
5. The Point Lookout formation was perforated with 3 intervals and sand-water fraced through the 5-1/2" liner.
6. The Pictured Cliffs formation was perforated with 1 interval and sand-water fraced through the 7-5/8" casing.
7. After cleaning out both formations a 2" EUE tubing was run with a Baker Model "EGJ" production packer to separate the Mesa Verde and Pictured Cliffs formations. The Mesa Verde formation will be produced through the 2" tubing.
8. The Pictured Cliffs formation will be produced through the 7-5/8" casing. A syphon string consisting of 1-1/4" line pipe was run to a point opposite the Pictured Cliffs formation.

C O P Y

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

Administrative approval is asked for this dual completion to allow production from both known producing formations without the high initial cost of drilling two wells.

The offset operators of this dual completion have been notified and I am enclosing copies of the letters waiving any objections to it. Also enclosed are:

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

It is intended to dedicate the W/2 of Section 35 to the Mesa Verde production and the SW/4 of Section 35 to the Pictured Cliffs production.

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

Yours very truly,

ORIGINAL SIGNED E. J. COEL

E. J. Coel
Senior Petroleum Engineer

EJC/gks

cc: Emery Arnold ✓
R. L. Hamblin
Phil McGrath

...the

EL PASO NATURAL GAS COMPANY
OPEN FLOW TEST DATADUAL COMPLETIONDATE **March 14, 1957**

Operator El Paso Natural Gas Company		Lease Storey # 10-C	
Location 1090'S, 1650'W, Sec. 35-28-9		County San Juan	State New Mexico
Formation Pictured Cliff		Pool Undesignated	
Casing: Diameter 7 5/8	Set At: Feet 2484	Tubing: Diameter 1 1/4	Set At: Feet 2325
Pay Zone: From 2290	To 2330	Total Depth: 4742 c/o - 4680- Packer at 2973	
Stimulation Method Sand Water Frac		Flow Through Casing X	Flow Through Tubing

Choke Size, Inches .750	Choke Constant: C 14.1605	5 1/2" liner at 2454 to 4747	
Shut-In Pressure, Casing, PSIG 726	PSIA 738	Days Shut-In 7	Shut-In Pressure, Tubing, PSIG 726
Flowing Pressure: P, PSIG 381	PSIA 393		Working Pressure: Pw, PSIG 391
Temperature: T 70			Gravity .641

Mesa Verde shut-in 1036 psigCHOKE VOLUME $Q = C \times P_1 \times F_1 \times F_g \times F_v$

$$C = 14.1605 \times 393 \times .9905 \times .9682 \times 1.035$$

5524

MCF/D

$$\text{OPEN FLOW } A_{of} = \left(\frac{P_1^2 - P_2^2}{P_1^2 - P_2^2} \right)^n$$

$$A_{of} = \left(\frac{544,644}{382,235} \right)^n = (1.4248)^{.85} \times 5524 = 1.351 \times 5524$$

$$A_{of} = 7463 \text{ MCF/D}$$

K. C. McBride

WITNESSED BY

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

L. D. Galloway
L. D. Galloway

OPEN FLOW TEST DATA

DATE March 21, 1957

Operator El Paso Natural Gas Company		Lease Storey # 10-C	
Location 1090'S, 1650'W, Sec. 35-28-9		County San Juan	State New Mexico
Formation Mesa Verde		Pool Blanco	
Casing Diameter 7 5/8	Set At: Feet 2484	Tubing Diameter 2"	Set At: Feet 4638
Pay Zone: From 4594	To 4662	Total Depth: 4742 - c/o - 4680	
Stimulation Method: Sand water Frac		Flow Through Casing	Flow Through Tubing X

Choke Size, inches .750	Choke Constant: C 14.1605	5 1/2" liner 2454 - 4747	
Shut-in Pressure, Casing 753 P.C.	PSIG 12 - PSIA 14	Days Shut-in 14	Shut-in Pressure, Tubing 1054
Flowing Pressure: P 395	PSIG 12 - PSIA 407	Working Pressure: P _w Calculated	PSIG 12 - PSIA 854
Temperature, T 67	F .75	Fpv: From Tables 1.036	Gravity .635

CHOKE VOLUME = Q C x P_i x F_v x F_g x F_{pv}

$$Q = 14.1605 \times 407 \times .9933 \times .9721 \times 1.036 \quad \underline{5765} \quad \text{MCF/D}$$

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

$$A_{of} = \left(\frac{1,136,356}{407,040} \right)^n (2.7917)^{.75} \times 5765 = 2.162 \times 5765$$

$$A_{of} = 12,464 \quad \text{MCF/D}$$

Made considerable amount of fluid, mostly distillate, during 3 hour test.

TESTED BY K. C. McBride

WITNESSED BY

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

L. D. Galloway
L. D. Galloway

EL PASO NATURAL GAS COMPANY

Box 997
Farmington, N.M.

March 22, 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, Storey # 10-C, SW 35-28-9,
San Juan County, New Mexico

Dear Mr. Arnold:

This well was dually completed in the Pictured Cliffs and Mesa Verde zones. A packer was set at 2973 feet. The Pictured Cliffs zone was tested March 14, 1957 with the following results obtained:

Pictured Cliffs - SIPC - 726 psig (shut-in 7 days)
Pictured Cliffs - SIPT - 726 psig
Mesa Verde - SIPT - 1036 psig

The casing was opened at 10:15 A.M. through a 3/4" choke and was left open for three hours.

<u>Time</u>	<u>Casing Choke Pressure, Psig</u>	<u>Temp. °F</u>	<u>Tubing Pressure Psig</u>
10:15	Opened Casing		1036
10:30	577		1038
10:45	541		1039
11:00	511		1039
11:15	486		1039
11:45	444		1040
12:15	421		1040
12:45	397		1040
1:15	381	70	1040

The calculated choke volume was 5524 MCF/D. After the well was shut-in for seven days, the Mesa Verde zone was tested March 21, 1957 with the following results obtained:

SIPC - 753 psig
SIPT - 1054 psig (shut-in 14 days)

The tubing was opened at 10:30 A.M. through a 3/4" choke and was left open for three hours.

<u>Time</u>	<u>Tubing Choke Pressure, Psig</u>	<u>Temp. °F</u>	<u>Casing Pressure Psig</u>
10:30	Opened tubing		753
10:45	511		754
11:00	473		755
11:15	436		754
11:30	428		754
12:00	412		754
12:30	404		754
1:00	398		754
1:30	395	67	753

The calculated choke volume was 5771 MCF/D. The results of the data obtained during the tests indicate there is no packer leakage.

Very truly yours,


 K. C. McBride
 Gas Engineer

KCMCB/jla

cc: E. E. Alsup
 D. H. Tucker
 W. T. Hollis
 W. M. Rodgers
 Drilling Department
 B. D. Adams
 Roland Hamblin
 Jack Purvis
 W. V. Holik
 C. C. Kennedy
 E. J. Coal, Jr. (6)
 A. J. Dudenhoeffer
 Bill Parrish
 H. H. Lines
 Dean Rittmann
 File

EL PASO NATURAL GAS COMPANY
GAS WELL TEST

To: Mr. E. E. Alsup

Date: March 14, 1957

From: Gas Engineering Department

Place: Farmington, New Mexico

DUAL COMPLETIONSubject: Test data on the El Paso Natural Gas Company Well,
STOREY # 10-C, San Juan County, N.M.

Tested By: K. C. McBride

Location Sec. 35 T. 28 R. 9 1090'S, 1650'W

Shut-In Pressure SIPC 726 psig ; (Shut-in 7 days)
SIPT 726 psig0.750" Choke Volume 5524 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 7463 MCF/D

Working Pressure On tubing = 391 Psig

Producing Formation Pictured Cliffs

Stimulation Method Sand Water Frac

Total Depth 4742 - c/o - 4680 - Packer at 2973

Field Undesignated

H2S Sweet to lead acetate.

Mesa Verde shut-in pressure 1036 psig

cc: D. H. Tucker
*****Bill Parrish
H. H. Lines
Dean Rittmann*Lewis D. Galloway*
L. D. GallowayW. T. Hollis
*****W. M. Rodgers

Drilling Department

B. D. Adams

Roland Hamblin

Jack Purvis

W. V. Holik

C. C. Kennedy

E. J. Coel, Jr. (6)

A. J. Dudenhoefter

File

EL PASO NATURAL GAS COMPANY
GAS WELL TEST

To: Mr. E. E. Alsup

Date: March 21, 1957

From: Gas Engineering Department

Place: Farmington, New Mexico

DUAL COMPLETIONSubject: Test data on the El Paso Natural Gas Company Well,
STOREY # 10-C, San Juan County, New Mexico.

Tested By: K. C. McBride

Location Sec. 35 T. 28 R. 9 ,1090'S, 1650'W

Shut-In Pressure PC SIPC 753 psig
SIPT 1054 psig ; (Shut-in 14 days)0.750" Choke Volume 5771 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 12,512 MCF/D

Working Pressure On Calculated = 843 Psig

Producing Formation Mesa Verde

Stimulation Method Sand Water Frac

Total Depth 4742 - c/o - 4680

Field Blanco

H₂S Sweet to lead acetate.

cc: D. H. Tucker

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W. T. Hollis

~~*****~~

W. M. Rodgers

~~*****~~

Drilling Department

B. D. Adams

Roland Hamblin

Jack Purvis

W. V. Holik

C. C. Kennedy

E. J. Coel, Jr.

A. J. Dudenhoefter

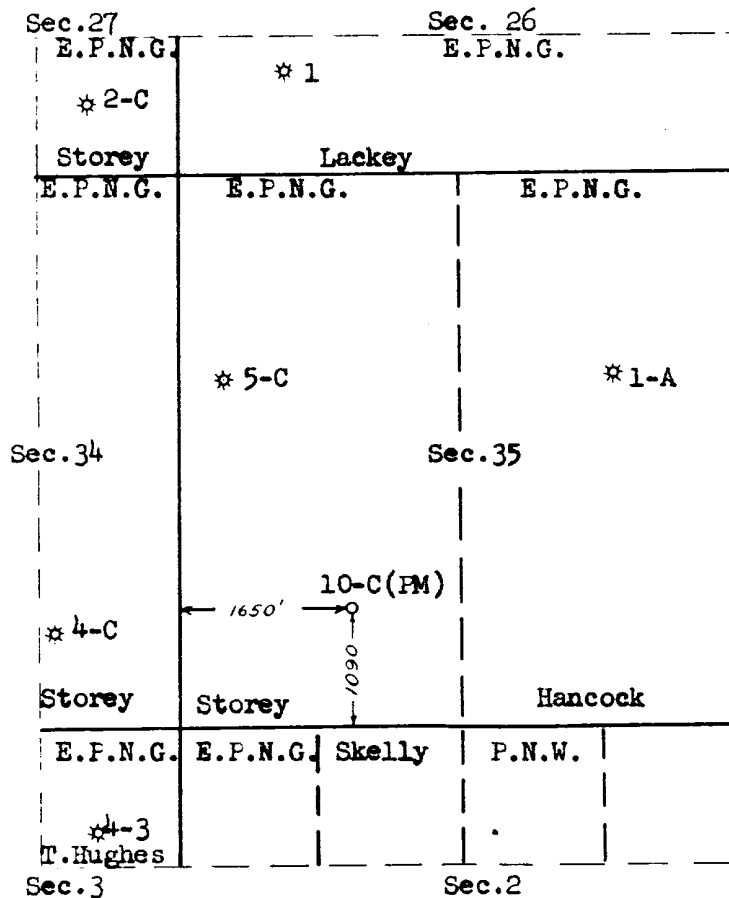
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H. H. Lines
Dean Rittmann
Bill Parrish*Lewis D. Galloway*
L. D. Galloway

Made considerable amount of fluid, mostly distillate, during 3 hour test.

FLAT SHOWING LOCATION OF DUAL COMPLETED
EL PASO NATURAL GAS STOREY #10-C (FM)
AND OFFSET ACREAGE

T-28-N R-9-W



EL PASO NATURAL GAS COMPANY
EL PASO, TEXAS

SCALE

DATE

No

DRAWN BY

CHECKED BY

STATE OF NEW MEXICO

COUNTY OF SAN JUAN

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)

I, Mack M. Mahaffy, 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 7,
1957, I was called to the location of the El Paso Natural Gas Company
Storey 10-C (PM) Well located in the SW/4 of Section 35, Township 28 North,
Range 9 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 2973 feet. The production packer was properly set in accordance with
the usual practices and customs of the industry.


Mack M. Mahaffy

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

Handwritten text, mostly illegible due to extreme fading. Some words like "The" and "and" are faintly visible.

Handwritten text, mostly illegible due to extreme fading. Some words like "The" and "and" are faintly visible.

Handwritten signature or name, mostly illegible due to extreme fading.

SCHEMATIC DIAGRAM OF DUAL COMPLETION
 EPNG STOREY NO. 10-C (1M)
 (SW Sec. 35-T28N-R9-W)

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

