

El Paso Natural Gas Company

El Paso, Texas

June 10, 1958

ADDRESS REPLY TO:
POST OFFICE 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 Extension and South Blanco Pictured Cliffs Pool. The El Paso Natural Gas Company Bolack No. 12-C (PM) is located 820 feet from the North line and 990 feet from the East line of Section 29, Township 27 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 172 feet with 150 sacks of cement circulated to the surface.
2. 7 5/8" intermediate casing set at 4435 feet with 400 sacks of cement. Top of the cement is at 2100 feet, which is above the top of the Pictured Cliffs at 2278 feet.
3. 5 1/2" liner set from 4357 feet to 4736 feet with 200 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 Pictured Cliffs formation was perforated in one interval and fractured with water and sand.
7. All perforations were cleaned out after treatment and completion was accomplished by setting a Baker Model "EGJ" production packer on 2" EUE tubing at 4387 feet with tubing perforations set opposite the Point Lookout perforations. 1 1/4" EUE tubing siphon string was run with tubing perforations set opposite the Pictured Cliffs perforations. 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 ~~Antec~~ office of the Oil Conservation Commission. This test shows no communication in the well bore between the two producing formations.

COPY

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.

The offset operators to this well have been notified of El Paso Natural Gas Company's intentions to dually complete this well and in turn have waived any objections to this plan. I am sending copies of the letters of approval received from the offset operators. Also 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.
- (e) Two plats showing the location of the well and offset operators.

It is intended to dedicate the E/2 of Section 29, Township 27 North, Range 8 West to the Mesa Verde formation and the NE/4 of Section 29, Township 27 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.

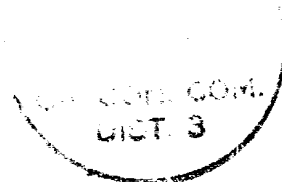
Yours very truly,

ORIGINAL SIGNED E. S. OBERLY
E. S. Oberly,
Division Petroleum Engineer

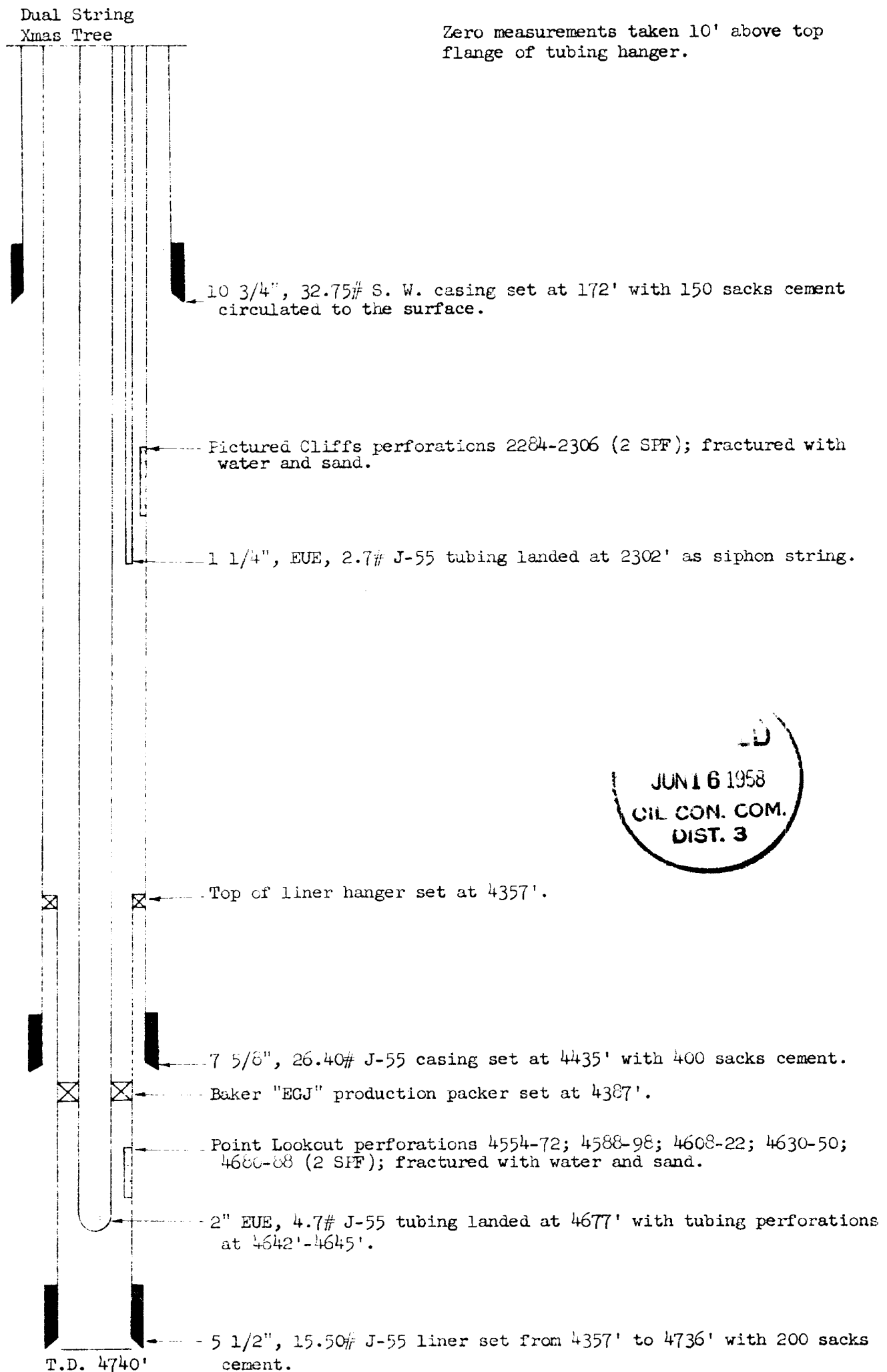
ESO:dgb

Encl.

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



SCHEMATIC DIAGRAM OF DUAL COMPLETION
 El Paso Natural Gas Co. Bolack No. 12-C (PM)
 NE/4 Section 29, T-27-N, R-8-W



JUN 16 1958
 CIL CON. COM.
 DIST. 3

ILLEGIBLE

March 10, 1958

The above mentioned Dual Correlation well is hereby approved.

The above mentioned Dual Correlation well is hereby approved.

The above mentioned Dual Correlation well is hereby approved.

Your prompt consideration of this matter will be greatly appreciated.

Very truly yours

D. N. Canfield
D. N. Canfield
Division Landman
Land Department

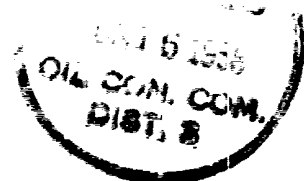
DNC:BG:cc

The above mentioned Dual Correlation well is hereby approved.

SOUTHERN UNION GAS COMPANY

By: *[Signature]*

[Signature], 1958.



STATE OF NEW MEXICO

COUNTY OF SAN JUAN

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

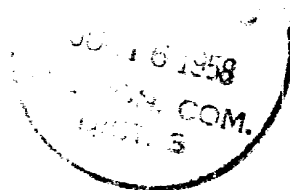
I am an employee of Baker Oil Tools, Inc., and that on April 6, 1958, I was called to the location of the El Paso Natural Gas Company Bolack No. 12-C (1M) Well located in the NENE/4 of Section 29, Township 27 North, Range 6 West, N.M.P.M., for advisory service in connection with installation of a production packer. In my presence, a Baker Model "EQJ" Production packer was set in this well at 4387 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 4th day of June, 1958.

Paul H. Macchia
Notary Public in and for San Juan County,
New Mexico

My commission expires February 24, 1960.



EL PASO NATURAL GAS COMPANY

P. O. Box 987
Farmington, New Mexico

May 19, 1958

Mr. E. C. Arnold
Oil Conservation Commission
1000 Rio Brazos Road
Aztec, New Mexico

Re: Packer Leakage Test on the El Paso Natural Gas
Company Well, Bolack 12-C (1), San Juan County,
820N, 990E, 29-27-8. 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 4387 feet. The Mesa Verde zone was tested through a 3/4" choke for three hours April 16, 1958, with the following data obtained:

PC GIPC 818 psig; Shut-in 9 days
MV GIFT 1084 psig; Shut-in 9 days

<u>Time Minutes</u>	<u>MV Flowing Pressure Tubing Psig</u>	<u>PC GIPC Psig</u>	<u>MV Working Pressure, Psig</u>	<u>Temp ° F</u>
15	503	823		61
30	274	823		62
45	258	823		60
60	236	823		59
180	192	824	217 (Calc.)	57

The choke volume for the Mesa Verde was 2394 MCF/D with an AOF of 2479 MCF/D.

The Pictured Cliffs zone was tested May 15, 1958 with a 3/4" choke for 3 hours with the following data obtained:


PC GIPC 840 psig; Shut-in 38 days
PC GIFT 843 psig;
MV GIFT 1085 psig; Shut-in 29 days

<u>Time Minutes</u>	<u>FC Flowing Pressure Casing Psig</u>	<u>IV SHT Psig</u>	<u>FC Working Pressure, Psig</u>	<u>Temp ° F</u>
15	161	1093	160	61
30	85	1094	82	62
45	61	1093	64	63
60	58	1094	59	61
100	55	1095	55	64

The choke volume for the Pictured Cliffs test was 897 MCF/D with an AOF of 902 MCF/D.

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

Very truly yours,


M. W. Rischard
Gas Engineer

MR/nb

cc: W. M. Rodgers
E. G. Oberly ()
File



EL PASO NATURAL GAS COMPANY
OPEN FLOW TEST DATA

DUAL COMPLETION

DATE April 16, 1958

Operator El Paso Natural Gas		Lease Bolack 12-C (M)	
Location 820N, 990E, 29-27-8		County San Juan	State New Mexico
Formation Mesa Verde		Pool Blanco Mesa Verde	
Casing: Diameter 7-5/8	Set At: Feet 4425	Tubing: Diameter 2"	Set At: Feet 4667
Pay Zone: From 4554	To 4688	Total Depth: 4736	Shut-in 4-7-58
Stimulation Method Sand Water Frac		Flow Through Casing	Flow Through Tubing X

Choke Size, Inches 3/4	Choke Constant: C 12.365	5-1/2" liner from 4357 to 4736	
Shut-In Pressure, Casing, PSIG 818 (PC)	12 = PSIA 830	Days Shut-In 9	Shut-In Pressure, Tubing, PSIG 1064 (MV)
Flowing Pressure: P, PSIG 192	12 = PSIA 204	Working Pressure: P _w , PSIG Calculated	12 = PSIA 229
Temperature: T, F 57	F _g .75	F _{pv} (From Tables) 1.024	Gravity .709

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

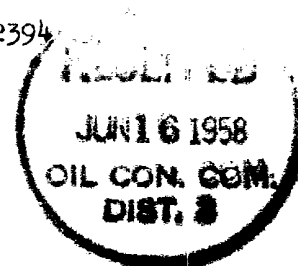
$$Q = 12.365 \times 204 \times 1.0048 \times .9225 \times 1.024 = 2394 \text{ MCF/D}$$

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

$$A_{of} \left(\frac{1,157,776}{1,105,335} \right)^n$$

$$1.0474^{.75} \times 2394 = 1.0354 \times 2394$$

$$A_{of} = 2479 \text{ MCF/D}$$

TESTED BY Robert ProctorWITNESSED BY Malcolm W. RischardChecked By: S. V. Roberts

Lewis D. Galloway
L. D. Galloway

EL PASO NATURAL GAS COMPANY
OPEN FLOW TEST DATA

DUAL COMPLETION

DATE May 15, 1958

Operator El Paso Natural Gas		Lease Bolack No. 12-C (P)	
Location 820N, 990E, 29-27-8		County San Juan	State New Mexico
Formation Pictured Cliffs		Pool South Blanco	
Casing: Diameter 7-5/8	Set At: Feet 4425	Tubing: Diameter 1-1/4	Set At: Feet 2292
Pay Zone: From 2284	To 2306	Total Depth: 4740	Shut-in 4-7-58
Stimulation Method Sand Water Frac		Flow Through Casing X	Flow Through Tubing

Choke Size, Inches .75		Choke Constant: C 1.41605		5-1/2 liner 4357 - 4736	
Shut-in Pressure: Casing, PSIG 840 (PC)	- 12 = PSIA 852	Days Shut-In 38	Shut-in Pressure: Tubing, PSIG 843 (PC)	- 12 = PSIA 855	
Flowing Pressure: P 53	- 12 = PSIA 65		Working Pressure: P _w , PSIG 55	- 12 = PSIA 67	
Temperature: T 64	F .85		F _{pv} (From Tables) 1.007	Gravity .640	

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

$$Q = 14.1605 \times 65 \times .9962 \times .9682 \times 1.007 = 897 \text{ MCF/D}$$

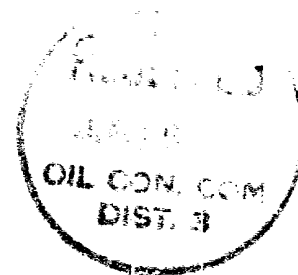
$$\text{OPEN FLOW : } Aof = Q \left(\frac{P_c^2}{P_c^2 - P_w^2} \right)^n$$

$$Aof = \left(\frac{731025}{726536} \right)^n = \frac{(1.0061)^{.85}}{1.00518}$$

$$Aof = 902 \text{ MCF/D}$$

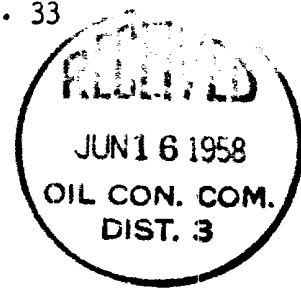
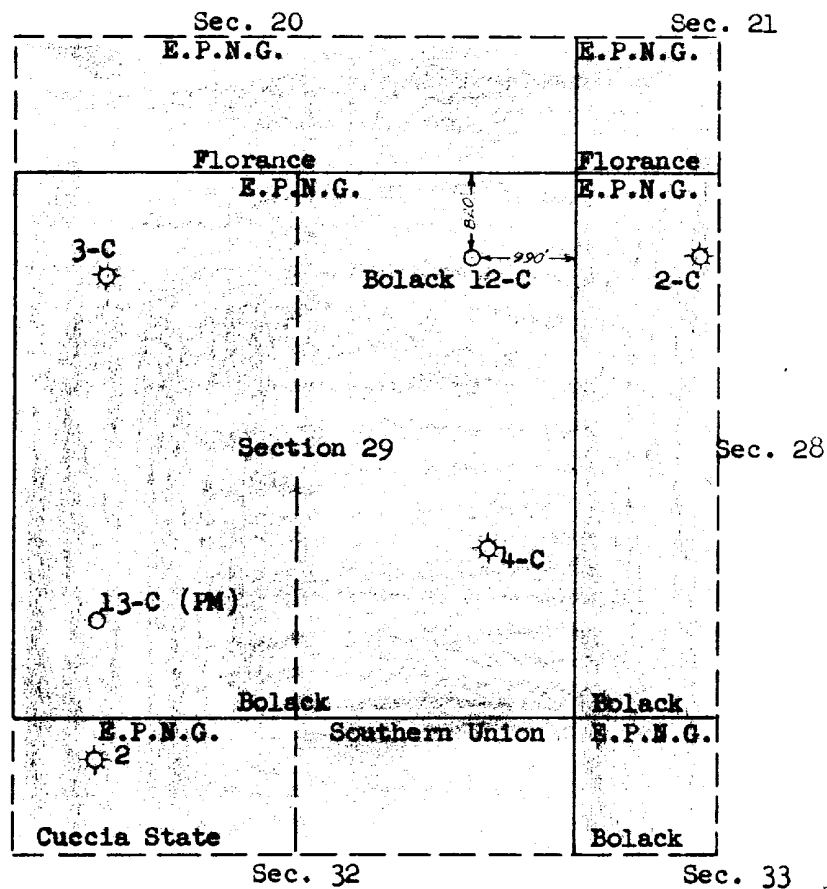
TESTED BY M. W. Rischard

WITNESSED BY _____



Lewis D. Galloway
L. D. Galloway

PLAT SHOWING LOCATION OF DUALY COMPLETED
El Paso Natural Gas Co. Bolack No. 12-C (PM)
and Offset Acreage



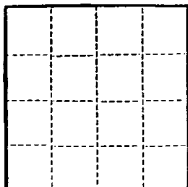
EL PASO NATURAL GAS COMPANY
EL PASO, TEXAS

SCALE	DATE	No.
DRAWN BY	CHECKED BY	

(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Land Office Santa Fe
Lease No. 079232
Unit Holack



SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

March 19, 1958

Well No. 12-C is located 820 ft. from N line and 290 ft. from E line of sec. 29

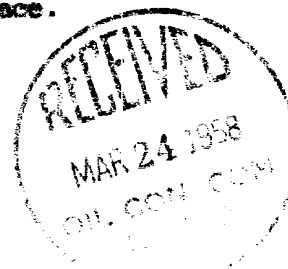
25 Sec. 29 27a 34 N.M.P.M.
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)
Blanco M.V. Ext. 4 San Juan New Mexico
(Field) (County or Subdivision) (State or Territory)
Sec. Blanco P.C.

The elevation of the derrick floor above sea level is 6231 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Spud date 3-15-58.
On 3-15-58, Total Depth 172'.
Ran 4 joints 10 3/4", 32.75#, spiral weld casing (172') set at 150' with 150 sacks regular cement, 1/2 CaCl, circulated to surface.
Held 500# for 30 minutes.



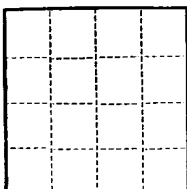
I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company El Paso Natural Gas Company
Address Box 977
Farmington, New Mexico
By Original Signed D. C. Johnson
Title Petroleum Engineer

(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Land Office Santa Fe
Lease No. 079232
Unit Black



SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL.....	SUBSEQUENT REPORT OF WATER SHUT-OFF.....	<input checked="" type="checkbox"/>
NOTICE OF INTENTION TO CHANGE PLANS.....	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING.....	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF.....	SUBSEQUENT REPORT OF ALTERING CASING.....	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL.....	SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR.....	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE.....	SUBSEQUENT REPORT OF ABANDONMENT.....	
NOTICE OF INTENTION TO PULL OR ALTER CASING.....	SUPPLEMENTARY WELL HISTORY.....	
NOTICE OF INTENTION TO ABANDON WELL.....		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

March 27, 1958

Well No. 12-C is located 360 ft. from N line and 990 ft. from E line of sec. 29

NE Sec. 29 27N 3W N.M.P.M.
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)

Blanco N.Y. Ext. Mto. Blanco P.C. San Juan New Mexico
(Field) (County or Subdivision) (State or Territory)

The elevation of the derrick floor above sea level is 6241 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

On 3-25-58, Total Depth 4435'.

Run 106 joints 7 5/8", J-55, 26.40#, Casing (4425') set at 4435' with 175 sacks regular cement, 175 sacks Pozmix, 87.5# Floccle, 2# Gel followed by 50 sacks Neat cement.

On 3-25-58 Squeezed 150 sacks Neat thru perforation @ 2510'. Set retrievable packer @ 2350'.

Held 1000# for 30 minutes.

Top of cement by temperature survey at 2100'.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

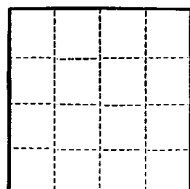
Company El Paso Natural Gas Company

Address Box 997

Farmington, New Mexico

By Original Signed D. C. Johnston

Title Petroleum Engineer



(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Land Office Santa Fe
Lease No. 079232
Unit Bulack

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL.....	SUBSEQUENT REPORT OF WATER SHUT-OFF.....	
NOTICE OF INTENTION TO CHANGE PLANS.....	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING.....	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF.....	SUBSEQUENT REPORT OF ALTERING CASING.....	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL.....	SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR.....	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE.....	SUBSEQUENT REPORT OF ABANDONMENT.....	
NOTICE OF INTENTION TO PULL OR ALTER CASING.....	SUPPLEMENTARY WELL HISTORY.....	
NOTICE OF INTENTION TO ABANDON WELL.....	<u>Water Frac.</u>	<u>X</u>

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

April 1, 19 50

Well No. 12-C(14) is located 820 ft. from N line and 990 ft. from E line of sec. 20

NE Sec. 29 27E 14N N.M.P.M.
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)
Blanco N. V. Est San Juan New Mexico
(Field) (County or Subdivision) (State or Territory)

The elevation of the derrick floor above sea level is 6641 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudlogging jobs, cementing points, and all other important proposed work)

3-31-50 Total depth 4740'. C.O.F.D. 4700'. Water fractured Point Lookout perf. int. 4554-4572, 4588-4598, 4605-4622, 4630-4650, 4660-4680 w/2 DJ/Ft. with 75,000 gallons water and 75,000# sand. BD pr. 2000#, max. pr. 2000#, avg. tr. pr. 1200, 1250, 1300#. I. R. 73 bbls./min. Flush 9200 gallons. Dropped 5 sets of 23 balls.

3-31-50 Total depth 4700'. Temporary bridge plug at 4450'. Water fractured Pictured Cliffs perf. int. 2284-2306 w/2 DJ/Ft. w/35,700 gallons water and 40,000# sand. BD pr. 2000#, max. pr. 2000#, avg. tr. pr. 1300#. I. R. 95 bbls./min. Flush 3800 gallons.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company El Paso Natural Gas Company

Address Box 997
Farmington, New Mexico

Original Signed D. C. Johnston
By _____

Title Petroleum Engineer