

(SUBMIT IN TRIPLICATE)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

Land Office **Santa Fe**  
Lease No. **079391**  
Unit **San Juan 27-5 Unit**

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL.....	<input checked="" type="checkbox"/>	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)

October 24, 1961

Well No. **63 (PM)** is located **850** ft. from **N** line and **1840** ft. from **W** line of sec. **8**

**S.W. Section 8**  
(Twp. & Sec. No.)  
**So. Blanco P.C. Ext. &**  
**Blanco Mesa Verde**  
(Locality)

**27-5-W**  
(Twp.) (Range)  
**Rio Arriba**  
(County or Subdivision)

**N.M.P.M.**  
(Meridian)  
**New Mexico**  
(State or Territory)

The elevation of the derrick floor above sea level is **6589** 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)

It is intended to drill and dual complete this well in the Pictured Cliffs formation and Mesa Verde formations. Mud circulation will be used thru the Pictured Cliffs formation and 7" casing will be set. Gas circulation will be used thru the Mesa Verde and 4 1/2" OD Liner will be set. All possible productive intervals will be perforated and fractured. Estimated T.D. 5750'.

Casing Program:

9 5/8" surface set @ 120'. Cemented to surface with 120 sacks.

7" Intermediate set @ 3580'. Cemented with 206 cu. ft. 50% excess to cover the Ojo Alamo.

4 1/2" liner set from 3500 to 5750'. Cemented with 386 cu. ft. 66% excess to cover liner top.

The W/2 of Section 8 is dedicated to the Mesa Verde formation.

The SW/4 of Section 8 is dedicated to the Pictured Cliffs formation.

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 990**

**Farmington, New Mexico**

By **Original Signed R. G. MILLER**

Title **Petroleum Engineer**

## NEW MEXICO OIL CONSERVATION COMMISSION

## Well Location and Acreage Dedication Plat

Section A.

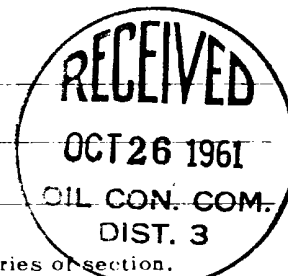
Date May 17, 1961

Operator EL PASO NATURAL GAS COMPANY Lease SAN JUAN 27-5 UNIT SF 079391  
 Well No. 63 (PM) Unit Letter N Section 8 Township 27-N Range 5-W NMPM  
 Located 850 Feet From SOUTH Line, 1840 Feet From WEST Line  
 County RIO ARriba G. L. Elevation 6579 Dedicated Acreage 160 & 320 Acres  
 Name of Producing Formation PICTURED CLIFFS & MESA VERDE Pool SO. BLANCO P.C. EXT. & BLANCO M.V.

1. Is the Operator the only owner in the dedicated acreage outlined on the plat below?  
 Yes \_\_\_\_\_ No X
2. If the answer to question one is "no", have the interests of all the owners been consolidated by communization agreement or otherwise? Yes X No \_\_\_\_\_. If answer is "yes", Type of Consolidation.  
Unit Agreement
3. If the answer to question two is "no", list all the owners and their respective interests below:

Owner

Land Description

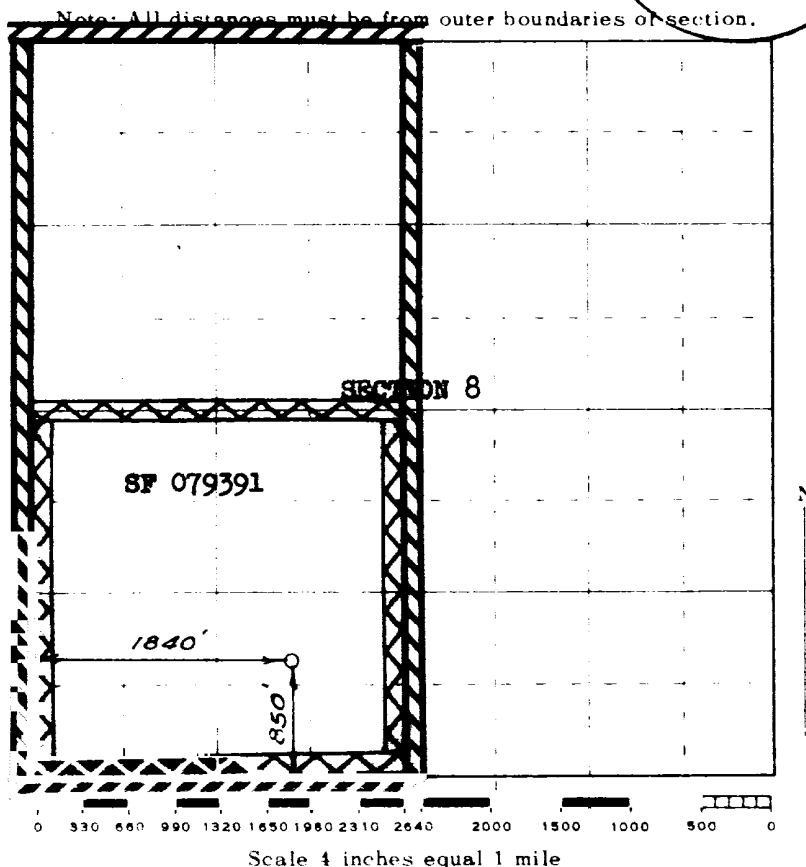


Section B.

This is to certify that the information in Section A above is true and complete to the best of my knowledge and belief.

El Paso Natural Gas Company  
 (Operator)  
 Original Signed R. G. MILLER  
 (Representative)

Box 990  
 (Address)  
 Farmington, New Mexico



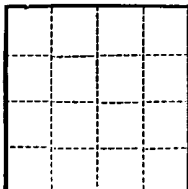
This is to certify that the above plat was prepared from field notes of actual surveys made by me or under my supervision and that the same are true and correct to the best of my knowledge and belief.

(Seal)

Date Surveyed May 16, 1961

Farmington, New Mexico

David O. Miller  
 Registered Professional Engineer and/or Land Surveyor



(SUBMIT IN TRIPLICATE)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

Land Office **Santa Fe**  
Lease No. **079391**  
Unit **San Juan 27-5 Unit**

SUNDRY NOTICES AND REPORTS ON WELLS

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

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

**November 2,** 19 **61**

Well No. **63 (FM)** is located **050** ft. from **S** line and **1540** ft. from **W** line of sec. **8**

**S.W. Section 8**

**27-N**

**S-W**

**N.M.P.M.**

( $\frac{1}{4}$  Sec. and Sec. No.)

(Twp.)

(Range)

(Meridian)

**So. Blanco Pictured Cliffs Est.**

**Rio Arriba**

**New Mexico**

**& Mesa Verde**

(County or Subdivision)

(State or Territory)

The elevation of the derrick floor above sea level is **6589** 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)

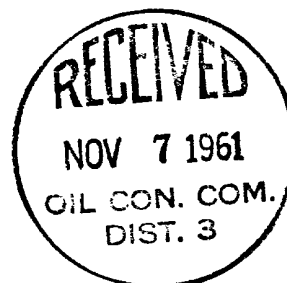
Spud date **10-20-61.**

On **10-20-61** T.D. **170'**. Ran **5** joints **9 5/8" 32.3# H-40 casing (154')**

set at **165'** with **120** lbs cement **1/4** cu .ft. **Strata-Crete "6"/sk.,**

**2 1/2** A-6 circulated to surface.

held **600#/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 990**

**Farmington, New Mexico**

By **Original Signed D. W. Meehan**

Title **Petroleum Engineer**

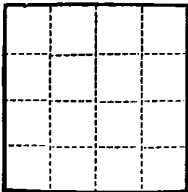
(SUBMIT IN TRIPLICATE)

Land Office **Santa Fe**

Lease No. **079391**

Unit **San Juan 27-5 Unit**

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY



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.....	
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NOTICE OF INTENTION TO ABANDON WELL.....		

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

U. S. GEOLOGICAL SURVEY  
FARMINGTON, NEW MEXICO

November 13

, 19 61

Well No. **63 (PM)** is located **850** ft. from **TH** line and **1840** ft. from **W** line of sec. **8**

S.W. Section **3** **27-N** **5-W** **N.M.P.M.**  
(Sec. or Subsec. No.) (Twp.) (Range) (Meridian)  
**So. Blanco Pictured Cliffs Est.**  
**Blanco Mesa Verde** **Rio Arriba** **New Mexico**  
(Field) (County or Subdivision) (State or Territory)

The elevation of the derrick floor above sea level is **6589** 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 11-2-61, T.D. 3581'. Ran 90 joints 7" 20#, J-55 casing (3562') set at 3578' with 90 sks cement, 1/4 cu. ft. Strata-Crete "6"/sk, followed by 50 sks regular, Held 1500#/30 minutes.

On 11-7-61 T.D. 5750'. Ran 73 joints 4 1/2" 10.5# J-55 casing (2270') set from 3480 to 5750' with 215 sks cement, 4% gel, 1/4 cu. ft. Fine Gilsomite/sk., 1/8# Flocele/sk. Held 1500#/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 990**

**Farmington, New Mexico**

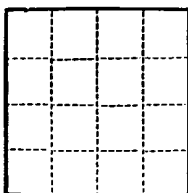
By \_\_\_\_\_

Title **Petroleum Engineer**

(SUBMIT IN TRIPLICATE)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

Land Office Santa Fe  
Lease No. 079391  
Unit San Juan 27-5



SUNDRY NOTICES AND REPORTS ON WELL **RECEIVED**

NOTICE OF INTENTION TO DRILL	SUBSEQUENT REPORT OF WATER SHUT-OFF	<b>NOV 15 1961</b> <b>U.S. GEOLOGICAL SURVEY</b> <b>FARMINGTON, NEW MEXICO</b>
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	<b>Water Frac.</b>	<b>X</b>

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

November 13, 1961

Well No. 63(FH) is located 850 ft. from SW line and 1840 ft. from W line of sec. 8  
S.W. Section 8 27-N 5-W N.M.P.M.  
(Twp.) (Range) (Meridian)  
So. Blanco P.C. Ext.  
Blanco Mesa Verde Rio Arriba New Mexico  
(Field) (County or Subdivision) (State or Territory)

The elevation of the derrick floor above sea level is 6504 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cement-

11-8-61 Total Depth 5750'. C.O.I.D. 4800'. Water frac Pictured Cliffs perf int. 3372-76; 3380-88; 3394-98; 3380-88; 3394-98; with 47,400 gal water, 45,000# sand. EDP 2350#, max pr 1600#, avg tr pr 1100-1200-1600#. Injection rate 57.7 BPM. Flush 6000 gallons. Dropped 32 balls.  
 11-8-61 Total Depth 5750'. Temp. Bridge plug at 5300'. Water frac Cliff House perf int 5054-62; 5148-56; 5076-80; 5200-5204' with 40,700 gal water, 40,000# sand. EDP 1600#, max pr 3000#, avg tr pr 1600-1850-2100-2900#. Dropped 43 balls.  
 11-8-61 Total Depth 5750'. Temp. Bridge Plug at 5706'. Water frac Point Lookout perf int 5574-82; 5608-10; 5620-20; 5664-72; with 57,100 gal water, 60,000# sand. EDP 1700#, max pr 2900#, avg tr pr 1500-1400-1450-1700-2900#. IR 40.4 BPM. Flush 8000 gallons. Dropped 48 balls.

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 990  
Farmington, New Mexico

By Original Signed D. W. Meehan  
 Title Petroleum Engineer





EL PASO NATURAL GAS COMPANY  
OPEN FLOW TEST DATA

DATE November 20, 1961

DUAL COMPLETION

Operator <b>El Paso Natural Gas Company</b>	Lease <b>San Juan Unit 27-5 No. 63 (PC)</b>
Location <b>850'S, 1840'W, Sec. 8-27-5</b>	County, State <b>Rio Arriba New Mexico</b>
Formation <b>Pictured Cliffs</b>	Pool <b>South Blanco</b>
Casing Diameter <b>7"</b>	Set At Feet <b>3578</b>
Pay Zone Depth <b>3372</b>	Total Depth <b>5750 C/O 5706</b>
Drilling Method <b>Sand/Water Frac.</b>	Flow Through Tubing <b>11-13-61</b>
	Flow Through Casing <b>X</b>

Choke Size, Inches <b>.750</b>	Choke Constant, C <b>12.365</b>	Baker Model "R" Pkr. at <b>3608'</b>
Shut-in Pressure, Casing, PSIG <b>870 (PC)</b>	Days Shut-in <b>7</b>	Shut-in Pressure, Flow, PSIG <b>882</b>
Flowing Pressure, Casing, PSIG <b>457</b>		Flowing Pressure, Flow, PSIG <b>471</b>
Temperature, °F <b>67</b>		Gravity <b>Est. .695</b>
		Flow From Tables <b>1.054</b>
		Flow From Tables <b>Est. .9292</b>

Initial SIPT (MV) = 1049 psig

Final SIPT (MV) = 1054 psig

CHOKE VOLUME  $Q = C \times P_c \times F_g \times F_v$

$$Q = (12.365)(469)(.9933)(.9292)(1.054)$$

5642 MCF/D

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

$$A_{of} = \left( \frac{777,924}{544,635} \right)^n (1.4283)^{.85} (5642) = (1.3541)(5642)$$

A<sub>of</sub> 7640 MCF/D

WITNESSED BY D. E. Mortensen

WITNESSED BY

Checked by: T. B. Grant, Jr.

*Lewis D. Galloway*  
Lewis D. Galloway







FORMATION RECORD-Continued

[illegible]

It is of the greatest importance to have a complete history of the well. Please state in detail the dates of redrilling, together with the reasons for the work and its results. If there were any changes made in the casing, state fully, and if any casing was "sacrificed," or left in the well, give its size and location. If the well has been dynamited, give date, size, position, and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position, and results of pumping or bailing.

5574-82; 5502-10; Frac w/57,100 gal water, 60,000# sand. Flush 8000 gal. I.R. bak  
 5620-28; 5664-72; 40.4 BBL. Max in 2900#, RDP 1700#, tr pr 1500-1400-1450-1700-2900#.  
 5054-68; 5148-56; Frac Calt House w/40,700 gal water, 40,000# sand. Flush 8000 gal.  
 5076-80; 5200-04; I.R. 43.9 BBL. Max in 3000#, RDP 1600#, tr pr 1600-1850-2100-  
 2900#.  
 3372-76; 3380-88; Frac Pictured Calt w/47,400 gal water, 45,000# sand. Flush  
 3394-98; 6000 gal. I.R. 57.2 BBL. Max in 1600#, RDP 2350#, tr pr 1100-1200-  
 1600#.  
 FINE LOOKOUT

VIEW AND ATTITUDE TO POL

14-00000  
 BUREAU OF THE  
 DEPARTMENT OF THE ARMY  
 WASHINGTON, D. C. 20315




Figure 1 shows a 3D schematic diagram of a three-layered structure. The top layer is labeled "Top layer" and contains a "Top layer" label. The middle layer is labeled "Middle layer" and contains a "Middle layer" label. The bottom layer is labeled "Bottom layer" and contains a "Bottom layer" label. The layers are separated by horizontal lines. The top layer is the thickest, followed by the middle layer, and the bottom layer is the thinnest. The layers are labeled with their respective names in a box at the bottom right.