NEW MEXICO OIL CONSERVATION COMMISSION

SANTA FE, NEW MEXICO

7-3-58

APPLICATION FOR DUAL COMPLETION

Field Name			County	Date
Wildcat			San Juan	October 2, 19[illegible]
Operator		Lease		Well No.
El Paso Natural Gas Company		Huerfano Unit		42 (AG)
Location of Well	Unit: K	Section: 7	Township: 30N	Range: 11W

1. Has the New Mexico Oil Conservation Commission heretofore authorized the dual completion of a well in these same pools or in the same zones within one mile of the subject well? YES _____ NO X

2. If answer is yes, identify one such instance: Order No. _____ ; Operator, Lease, and Well No.:

3. The following facts are submitted:	Upper Zone	Lower Zone
a. Name of reservoir	Gallup	Dakota
b. Top and Bottom of Pay Section (Perforations)	6107-6146	6715-6911
c. Type of production (Oil or Gas)	Gas	Gas
d. Method of Production (Flowing or Artificial Lift)	Flowing	Flowing

4. The following are attached. (Please mark YES or NO)

Yes a. Diagrammatic Sketch of the Dual Completion, showing all casing strings, including size and setting, top of cement, perforated intervals, tubing strings, including diameters and setting depth, location and type of packers and side door chokes, and such other information as may be pertinent.

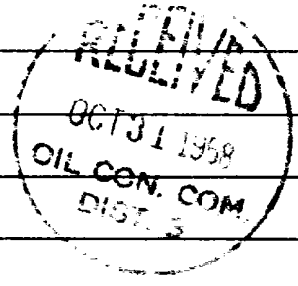
Yes b. Plat showing the location of all wells on applicant's lease, all offset wells on offset leases, and the names and addresses of operators of all leases offsetting applicant's lease.

No c. Waivers consenting to such dual completion from each offset operator, or in lieu thereof, evidence that said offset operators have been furnished copies of the application.*

No d. Electrical log of the well or other acceptable log with tops and bottoms of producing zones and intervals of perforation indicated thereon. (If such log is not available at the time application is filed, it shall be submitted as provided by Rule 112-A.)

5. List all offset operators to the lease on which this well is located together with their correct mailing address.

No offset operators



6. Were all operators listed in Item 5 above notified and furnished a copy of this application? YES ____ NO ____ . If answer is yes, give date of such notification _____ .

CERTIFICATE: I, the undersigned, state that I am the Division Petroleum Engr. of the El Paso Natural Gas Co. _____ (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

ORIGINAL SIGNED E. S. OBERLY

Signature

* Should waivers from all offset operators not accompany an application for administrative approval, the New Mexico Oil Conservation Commission will hold the application for a period of twenty (20) days from date of receipt by the Commission's Santa Fe office. If, after said twenty-day period, no protest nor request for hearing is received by the Santa Fe office, the application will then be processed.

NOTE: If the proposed dual completion will result in an unorthodox well location and/or a non-standard proration unit in either or both of the producing zones, then separate application for approval of the same should be filed simultaneously with this application.

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 Huerfano Unit No. 92 (DG) Well located in the SENW/4 of Section 7, Township 26 North, Range 9 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 6440 feet in accordance with the usual practices and customs of the industry.

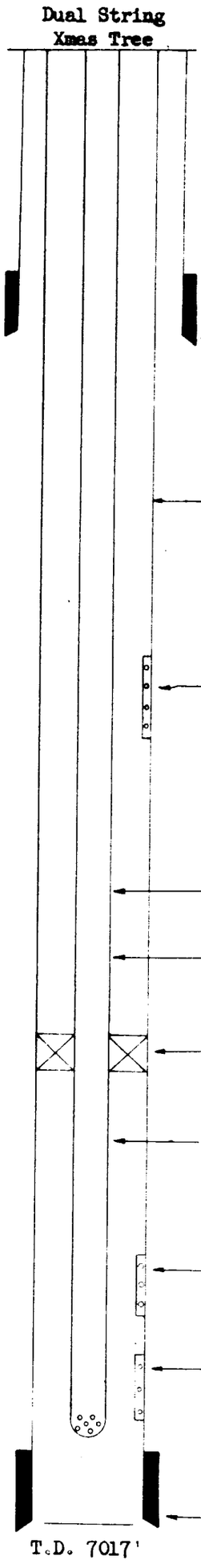
Mack M. Mahaffey

Subscribed and sworn to before me, a Notary Public in and for San Juan County, New Mexico, the 30th day of October, 1958.

Notary Public in and for San Juan County,
New Mexico

My commission Expires February 24, 1960.

Schematic Diagram of Dually Completed
El Paso Natural Gas Co. Huerfano Unit No. 92 (DG)
NW/4 Section 7, T-26-N, R-9-W



Zero reference point 10.0' above top flange of tubing hanger.

10 3/4", 32.75# S. W. casing set at 319' with 250 sacks cement circulated to surface.

Top of cement by temperature survey at 5135'.

Gallup perforations 6107-6110; 6114-6148, fractured with oil and sand. Acidized with MCA.

2" EUE, 4.7# J-55 tubing landed at 6823'.

Otis Sleeve at 6436'

Baker Model "EGJ" packer set at 6440'.

Otis Sleeve at 6779'.

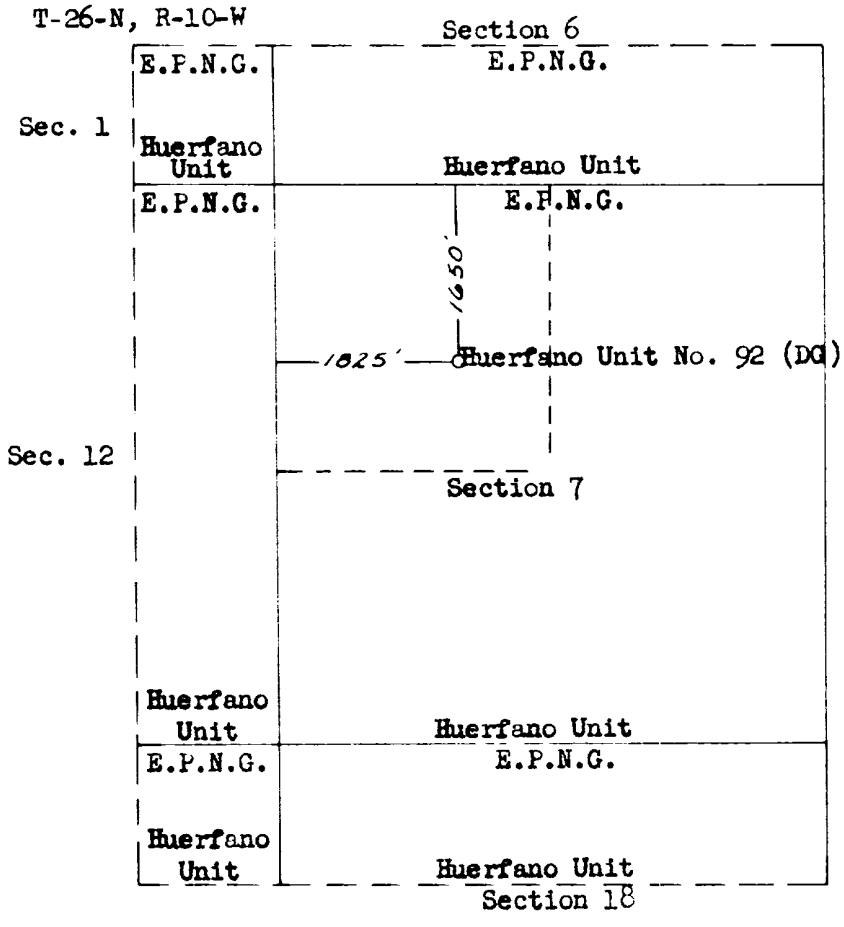
Upper Dakota and Lower Graneros perforations 6715-6728; 6742-6755; 6802-6820, fractured with water and sand.

Lower Dakota perforations 6892-6910. Acidized with 7 1/2% HCL. Fractured with water and sand.

5 1/2", 15.50# & 17# J-55 casing set at 7016' with 450 sacks cement.

Plat Showing Location of Dually Completed
El Paso Natural Gas Co. Huerfano Unit No. 92 (DG)
and offset Acreage

T-26-N, R-9-W



EL PASO NATURAL GAS COMPANY
EL PASO, TEXAS

SCALE	DATE	No.
DRAWN BY	CHECKED BY	

FORM 7-132 (10-56)

EL PASO NATURAL GAS COMPANY

P. O. Box 997
Farmington, New Mexico

July 2, 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 Huerfano Unit No. 92 (DG), NW 7-26-9, San Juan County, New Mexico.

Dear Mr. Arnold:

The subject well was dually completed in the Gallup and Mesa Verde zones and a packer was set at 6439'. The Gallup zone was tested thru a 3/4" choke for 3 hours, June 20, 1958, with the following data obtained:

SIPC (G) 1069 psig; Shut-In 15 days

SIPT (G) 1277 psig;

The choke volume for the Gallup was 1460 MCF/D with an AOF of 1585 MCF/D. This test was conducted with the Dakota sleeve closed and the Gallup sleeve open so that the Gallup could be tested through the tubing. This test could only serve as a Gallup potential test and not as a packer test.

The Dakota zone was tested through a 3/4" choke for three hours June 27, 1958, with the following data obtained:

SIPC (G) 1325 psig; Shut-In 7 days

SIPT (D) 1445 psig; Shut-In 15 days

Time Minutes	Dak. Flowing Pressure Tubing Psig	Gal. SIPC Psig	Dak. Working Pressure, Psig	Temp ° F
0	Opened Dak. tubing	1325		-
15	178	1328		64
30	165	1328		66
45	164	1328		66
60	149	1326		66
180	133	1291	Calc. 293	68

The choke volume for the Dakota was 1652 MCF/D with an AOF of 1708 MCF/D.

Both zones of this well produce oil thus making any tests for packer leakage hard to obtain. The data obtained from the Dakota test show decreasing pressures on the Gallup zone which may have been due to liquid accumulation in the annulus space and/or from liquids being produced with the gas from the Dakota zone.

The Dakota test was witnessed by Mr. Fred Cook, N.M.O.C.C.

If any other tests for packer leakage should be run on this well please advise us.

Very truly yours,

H. L. Kendrick
Gas Engineer

HLK/nb

cc: W. M. Hodgers
E. S. Oberly (2)
File

OPEN FLOW TEST DATA

DUAL COMPLETION

DATE June 20, 1958

Operator: **El Paso Natural Gas Company**	Lease: **Huerfano No. 92 (G)**
1650N, 1825W; 7-26-9	San Juan / State: **New Mexico**
Gallup	**Undesignated**
5-1/2" / 7004	2" / Set At, Feet: 6813
6114 / 6148	7016 c/o 6877 / **Re Shut-in** 6/5/58
Sand Water Frac.	Flow Through Tubing: **X**

.75	12.365				
1069 (G)	1081	15	1277 (G)	PSIG / PSIA	1289
117	129		403	PSIG / PSIA	415
72	.75		1.014	Gravity	.72

Note: Dakota gas blocked off to wellhead! Packer at 6439

(12.365)(129)(.9887)(.9129)(1.014) = 1460 MCF/D

$$\left(\frac{1,661,521}{1,489,296}\right)^n \quad (1.1156)^{.75}(1460) = (1.0853)(1460)$$

1585 MCF/D

REMARKS: **Unloaded heavy yellow stream of oil in 3 min. Diminishing to light oily fog for remainder of test.**

S. V. Roberts

L. D. Galloway

L. D. Galloway by H. L. K.

OPEN FLOW TEST DATA

DUAL COMPLETION DATE June 27, 1958

Operator: El Paso Natural Gas Company		Lease: Huerfano No. 92 (D)	
Unit Letter: 1650N, 1825W; 7-26-9		County: San Juan	State: New Mexico
Formation: Dakota		Pool: Undesignated	
Casing Diameter: 5-1/2	Set At Feet: 7004	Tubing Diameter: 2"	Set At Feet: 6813
Perforations: 6715	6910	Total Depth: 7016 c/o 6877	Flow Through Casing: Shut-in 6/12/58
Stimulation Method: Sand Water Frac			Flow Through Tubing: X

Choke Size, Inches: .75	Choke Constant: 12.365	Packer at 6439	
Shut-in Pressure, Casing: 1325 (Gallup)	PSIG + 12 = PSIA: 1337	Days Shut-in: 15 (D)	Shut-in Pressure, Tubing: 1445 (Dakota) PSIG + 12 = PSIA: 1457
Flowing Pressure, P: 133	PSIG + 12 = PSIA: 145		Working Pressure, P_w: Calc. PSIG + 12 = PSIA: 305
Temperature, °F: 68	Fpv (From Tables): .75	Fg: 1.017	Gravity: .720

Final SIPC (G) = 1291 psig

OPEN FLOW = Q = C x P_c x F_g x F_{pv} x F_t

Q = (12.365) (145)(.9924)(.9129)(1.017) = 1652 MCF D

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

$\left(\frac{2{,}122{,}849}{2{,}029{,}824}\right)^n$ $(1.0458)^{.75}$ (1652) = (1.0342)(1652)

AOF = 1708 MCF D

S. V. Roberts

Fred Cook (NMOCC)

Lewis D. Galloway

L. D. Galloway