

CASE 2230: Application of EL PASO
for a gas-gas dual of its Huerfano
Unit Well No. 113 - San Juan County

Case No.

2230

Application, Transcript,
and Exhibits, Etc.

OPEN FLOW TEST DATA

DATE OF COMPLETION

DATE January 5, 1961

Lessee El Paso Natural Gas Company Well No. 33-27N-1 W Locality Dakota Test Date 2/7/61 Test Time 6286 Test Method Sand/Water Frac.	Lease Huerfano Unit No. 113 (DK) County San Juan State New Mexico Basin Basin Test Depth No tubing 6548 c/o 6484 Flow Through Casing X
---	--

Choke Size, Inches .75 Shut-In Pressure, PSIG (DK) 1999 Flowing Pressure, PSIG 60 Temperature 74 Initial SIPC (CA) = 1087 psig Final SIPC (CA) = 1090 psig	Choke Constant, C 12.365 Days Shutoff 7 PSIG - 12 - PSIA 2011 PSIG - 12 - PSIA 72 .9868 .750	"Slim Hole" Dual Shut-In Pressure, PSIG (GA) (Csg. 1087 Working Pressure, PSIG Calc. 104 Flow Through Casing 1.010 Gravity 0.738 Sp. Gr. .9035
---	---	---

Initial SIPC (CA) = 1087 psig
Final SIPC (CA) = 1090 psig

CHOKE FLOW Q = C x P₁ x P₂ x P₃ x P₄

Q = (12.365)(72)(.9868)(.9035)(1.010)

802 MCF/D

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

Q = $\left(\frac{4,044,121 - 4,033,268}{4,044,121 - 4,033,268} \right)^n$

(1.0026)^{.75}(802) = (10019)(802)

Q = 802 MCF/D

Checked by J. B. Goodwin

Calculated by W. D. Dawson

BEFORE EXAMINER NUTTER OIL CONSERVATION COMMISSION EXHIBIT NO. 4 CASE NO. 2230

Lewis D. Galloway
Lewis D. Galloway

EL PASO NATURAL GAS COMPANY

OIL WELL TEST

TO: Mr. A. J. Dudenhoeffer
FROM: Production Engineering Dept.

DATE: February 10, 1961
PLACE: Farmington, N. M.

SUBJECT: Gas-Oil Ratio test for El Paso Natural Gas Company well
Huerfano Unit No. 113 (Gallup) CORRECTED COPY

TESTED BY: K. C. McBride

LOCATION: Sec. 33 T. 27 R. 10

SHUT-IN PRESSURE: SIPC 1087 psig : (Shut-In 7 days)
SIPT --- psig

TIME AND DATE TEST STARTED: 1-23-61 8:00 a.m.

TIME AND DATE TEST ENDED: 1-24-61 8:00 a.m.

TOTAL PRODUCTION 24 hours

Gas 2127 MCF

Oil 27.8 BBLs

Water 0 BBLs

GAS-OIL RATIO: 76511 Cubic Ft. per BBL.

PRODUCING METHOD: Flowing

PRODUCING THROUGH 2-1/2" CHOKE SEETING 32/64 INCHES

FLOWING PRESSURE --- psig TUBING: 250 psig CASING

SPM --- LENGTH OF STROKE ---

PRODUCING FORMATION: Gallup

FIELD: Angel Peak Gallup

K. C. McBride
Production Engineer

cc: B. C. Adams
Ed E. Alsup
D. N. Canfield
W. C. Cheek
E. J. Coel, Jr.
A. M. Derrick
Drilling Dept.
O. W. Fowler
C. C. Kennedy
E. S. Oberly (1) Singels - (6) Duals
L. M. Parrish
Proration Dept.
W. M. Rodgers
S. Smith
L. G. Truby
D. H. Tucker
File

NOTE: This well is a tubingless completion still recovering frac oil.

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Apex EXHIBIT NO. *4a*
CASE NO. *2230*

El Paso Natural Gas Company

Huerfano Unit

113 (GD)

0 35 1-27 10 San Juan 1-5-61 Arrived
Gallup Oil Flowing Casing
Dakota Gas Flowing Casing

SHUT-IN PRESSURE DATA BEFORE FLOW TEST NO. 1

COMPLETION 12-29-60 7 days 1087 (XXXXX No)
LOWER 12-29-60 7 days 1999 (XXXXX No)

FLOW TEST NO. 1

Lower 1-5-61
15 min. 1089 139
30 min. 1089 100
45 min. 1090 80
60 min. 1090 71
180 min. 1090 Calc. 92 60 74

OIL PRODUCED

Bbl. D.

GAS PRODUCED

802 MCF D (XXXXX)

REMARKS: This well was completed by running two strings of 2-7/8" Casing and cementing them. The cement takes the place of a packer.

SHUT-IN PRESSURE DATA BEFORE FLOW TEST NO. 2

UPPER 12-29-60 19 days 1098 (XXXXX No)
LOWER 1-5-61 12 days 1980 (XXXXX No)

FLOW TEST NO. 2

Upper 1-17-61
15 min. 675 1983 63
30 min. 650 1985 65
45 min. 595 1987 66
60 min. 575 1988 67
120 min. 565 1991 68
180 min. 559 1993 70
26 hrs. 427 2000 79

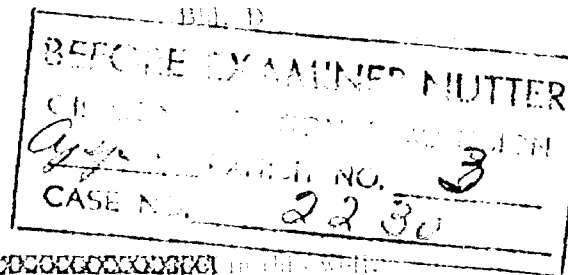
OIL PRODUCED

Bbl. D.

GAS PRODUCED

MCF D (XXXXX)

REMARKS:



REMARKS: This well was completed by running two strings of 2-7/8" Casing and cementing them. The cement takes the place of a packer.

REMARKS: This well was completed by running two strings of 2-7/8" Casing and cementing them. The cement takes the place of a packer.

El Paso Natural Gas Company

H. L. Kendrick

Sr. Gas Engineer

2

- 10 3/4", 32.75#, Armo S. W. casing set at 292' with 340 sacks cement circulated to surface.

BEFORE EXAMINED MUTTER
CH. CONVENTION OF THE UNION
App. EXHIBIT NO. 2
CASE NO. 2230

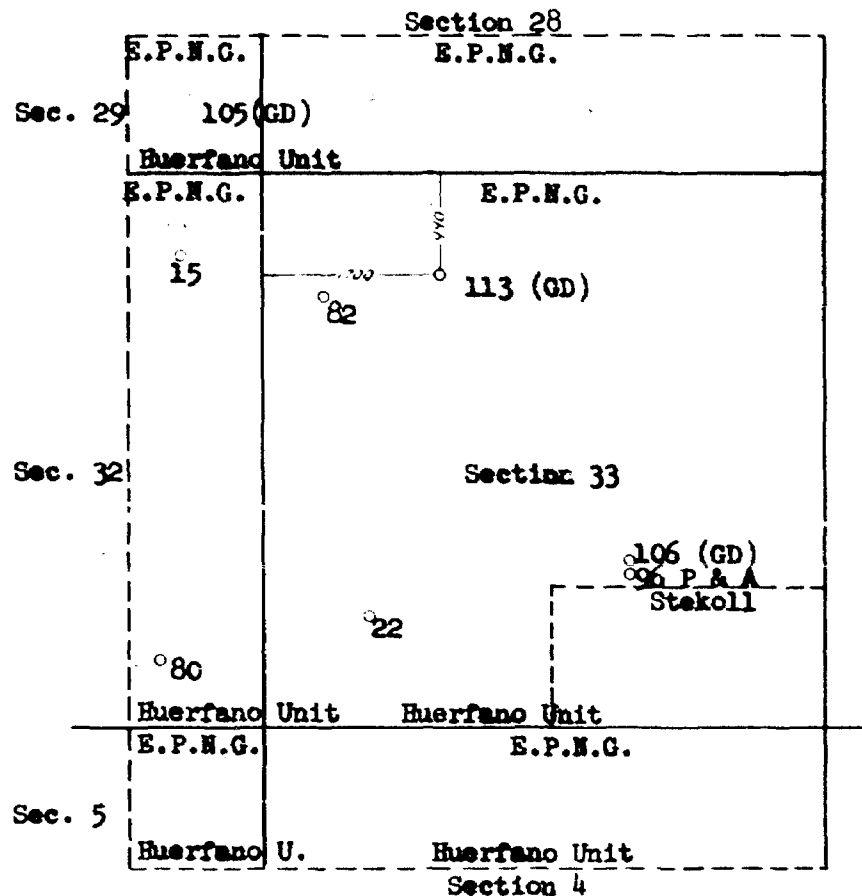
2 7/8", 6.45, J-55 casing set at 6525' with 81 sacks cement.

T.D. 6548'

PLAT SHOWING LOCATION OF DUALY COMPLETED
El Paso Natural Gas Co. Huerfano Unit No. 113 (GD)
and Offset Acreage

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
El EXHIBIT NO. 1
CASE NO. 2230

T-27-N
R-10-W



T-26-N
R-10-W

EL PASO NATURAL GAS COMPANY
EL PASO, TEXAS

SCALE	DATE	No.
DRAWN BY	CHECKED BY	

5

Huerfano Unit, Well No. 113
C-33-27-10

Dakota

Clark Spinner Centralizers set at following depths:

6,522 ft.
6,507 ft.
6,476 ft.
6,445 ft.
6,414 ft.
6,383 ft.
6,351 ft.
6,320 ft.
6,289 ft.
6,258 ft.
6,227 ft.
6,196 ft.
6,165 ft.
6,122 ft.

Gallup

Baker Turbulizers set at following depths:

5,946 ft.
5,940 ft.
5,918 ft.
5,887 ft.
5,856 ft.
5,835 ft.
5,804 ft.
5,773 ft.
5,742 ft.
5,711 ft.
5,680 ft.
5,648 ft.
5,617 ft.
5,586 ft.
5,555 ft.
5,524 ft.
5,493 ft.

BEFORE EXAMINER NUTTER	
OIL CONSERVATION COMMISSION	
<i>App</i>	EXHIBIT NO. <u>5</u>
CASE NO.	<u>2230</u>

2m
4/10
C
4/10
A
4/11

DRAFT

RSM/esr
April 10, 1961

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 2230

Order No. R- 1940

APPLICATION OF EL PASO NATURAL GAS
COMPANY FOR A GAS-GAS DUAL COMPLETION
IN THE ANGELS PEAK-GALLUP POOL AND IN
THE BASIN-DAKOTA POOL, SAN JUAN COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on April 5, 1961, at Santa Fe, New Mexico, before Daniel S. Nutter, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this _____ day of April, 1961, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Daniel S. Nutter, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, El Paso Natural Gas Company, is the owner and operator of the Huerfano Unit Well No. 113, located in Unit C, Section 33, Township 27 North, Range 10 West, NMPM, San Juan County, New Mexico.

(3) That the applicant proposes to dually complete said Huerfano Unit Well No. 113 in such a manner as to permit the production of gas from the Angels Peak-Gallup Pool and the production of gas from the Basin-Dakota Pool through parallel strings of 2 7/8-inch casing cemented in a common well bore.

(4) That the applicant further proposes to install centralizers or turbolizers at approximately 30-foot intervals throughout the ~~Gallup and Dakota~~ ^{producing} formations and to a point at least 100 feet above said formations. ^{cement} ~~each string of casing shall be cemented~~ ^{throughout the producing formations and to a point at least 100 feet above the formation and to}

(5) That the mechanics of the proposed dual completion are feasible and in accord with good conservation practices.

(6) That approval of the subject application will neither cause waste nor impair correlative rights.

IT IS THEREFORE ORDERED:

That the applicant, El Paso Natural Gas Company, is hereby authorized to dually complete its Huerfano Unit Well No. 113, located in Unit C, Section 33, Township 27 North, Range 10 West, NMPM, San Juan County, New Mexico, in such a manner as to permit the production of gas from the Angels Peak-Gallup Pool and the production of gas from the Basin-Dakota Pool through parallel strings of 2 7/8-inch casing cemented in a common well bore.

PROVIDED HOWEVER, That, ^{and} centralizers or turboflizers shall be installed at approximately 30-foot intervals throughout the ^{producing} Gallup ~~and Dakota~~ formations and to a point at least 100 feet above each of said formations. ^{each string of casing shall be cemented throughout the Basin and Dakota formations and to a point at least one hundred feet above the}

PROVIDED FURTHER, That the applicant shall complete, operate, and produce said well in accordance with the provisions of Section V, Rule 112-A.

PROVIDED FURTHER, That the applicant shall take communication tests upon completion and annually thereafter during the Annual Deliverability Test Period for the Basin Dakota Pool.

IT IS FURTHER ORDERED:

That jurisdiction of this cause is hereby retained by the Commission for such further order or orders as may seem necessary or convenient for the prevention of waste and/or ^{the} protection of correlative rights; upon failure of the applicant to comply with any requirement of this order, the Commission may terminate the authority herein granted and require the applicant or its successors and assigns to limit its activities to regular single-zone production in the interest of conservation.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

NEW MEXICO OIL CONSERVATION COMMISSION

SANTA FE, NEW MEXICO

7-3-58

APPLICATION FOR DUAL COMPLETION

Field Name Angel Peak Gallup & Basin Dakota		County San Juan	Date March 1, 1961
Operator El Paso Natural Gas Company		Lease Huerfano Unit	Well No. 113 (GD)
Location of Well Unit C	Section 33	Township 27N	Range 10W

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 ☐
2. If answer is yes, identify one such instance: Order No. **DC R-1367**; Operator, Lease, and Well No.:

El Paso Natural Gas Company Huerfano Unit #105 (GD)

3. The following facts are submitted:	Upper Zone	Lower Zone
a. Name of reservoir	Gallup	Dakota
b. Top and Bottom of Pay Section (Perforations)	5678 - 5714	6286-6376 6418 - 6434
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. 10

Pan American Petroleum Corporation**Post Office Box 1410****Fort Worth, Texas**

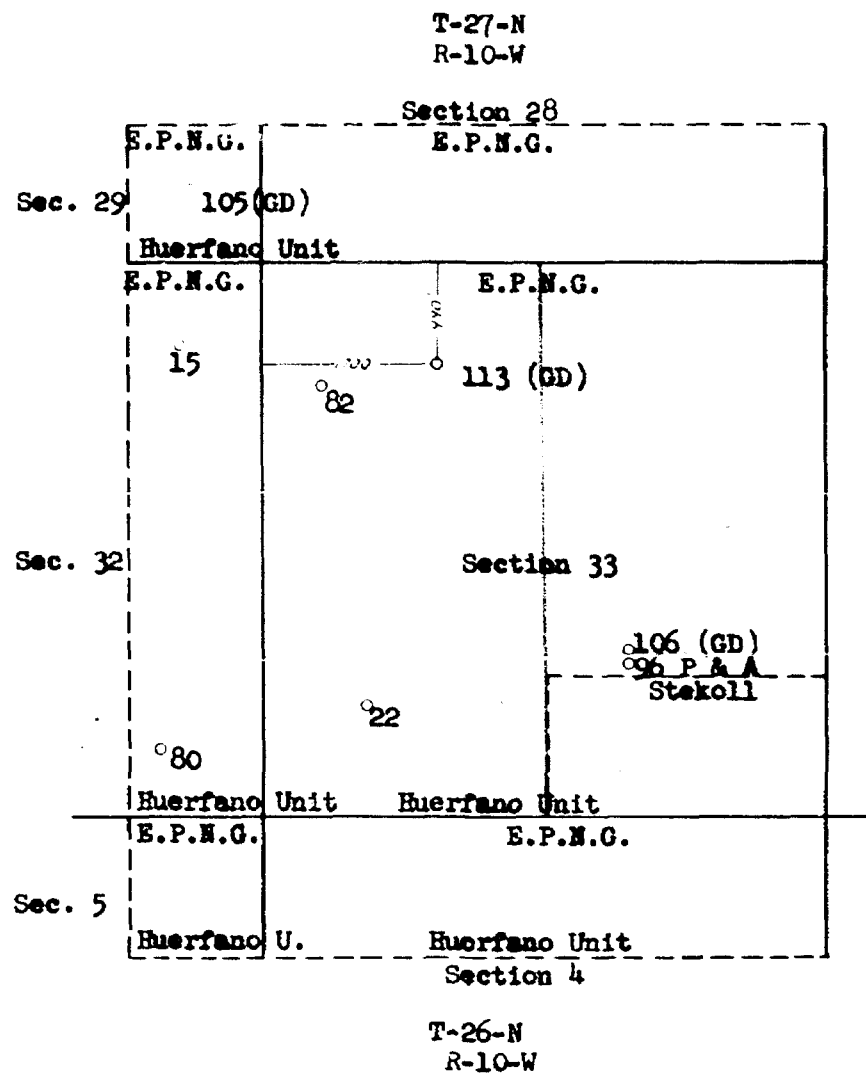
6. Were all operators listed in Item 5 above notified and furnished a copy of this application? YES ☐ NO ☐ . If answer is yes, give date of such notification _____

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.

E. S. Olney
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.

PLAT SHOWING LOCATION OF DUALY COMPLETED
El Paso Natural Gas Co. Huerfano Unit No. 113 (GD)
and Offset Acreage



EX #1

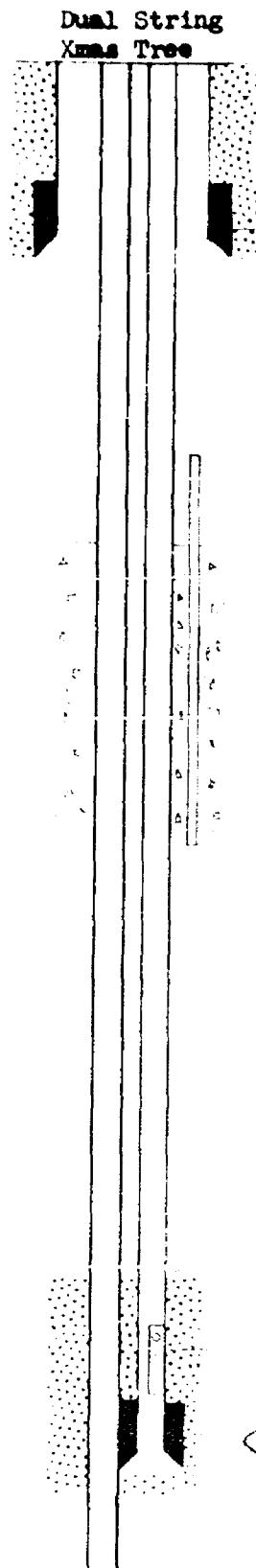
Case 1230

FORM 7-132R (10-56)

EL PASO NATURAL GAS COMPANY EL PASO, TEXAS		
SCALE	DATE	No.
DRAWN BY	CHECKED BY	

SCHEMATIC DIAGRAM OF DUAL COMPLETION
El Paso Natural Gas Co. Huerfano Unit No. 113 (GD)
NW/4 Section 33, T-27-N, R-10-W

Perforation Dept.	3/13/61
R. #	



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

10 3/4", 32.75#, Armco S. W. casing set at 292' with 340
sacks cement circulated to surface.

1882' Long P.C.

1 1/4", 2.4#, J-55 tubing set at 1904' with 170 sacks cement.
Cut 1 1/4" tubing off at 1290' and pulled.
Top of cement @ 1420'.

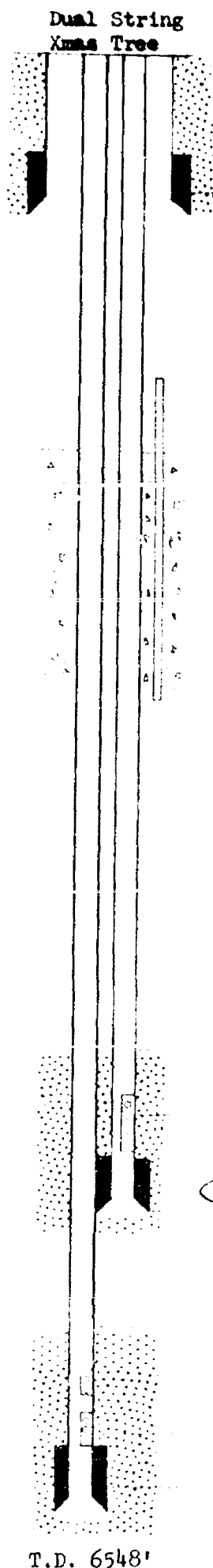
Top of cement at 4810'.

Callup perforations 5678-5698; 5709-5714 (2 SPF); fractured
with oil and sand.

2 7/8", 6.4#, J-55 casing set at 5950' with 326 sacks cement.

SCHEMATIC DIAGRAM OF DUAL COMPLETION
El Paso Natural Gas Co. Huertano Unit No. 113 (GD)
NW/4 Section 33, T-27-N, R-10-W

Production Dept.	3/13/61
R. S. #	



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

10 3/4", 32.75#, Armco S. W. casing set at 292' with 340 sacks cement circulated to surface.

1882' base of P.C.

1 1/4", 2.4#, J-55 tubing set at 1904' with 170 sacks cement.
 Cut 1 1/4" tubing off at 1290' and pulled.
 Top of cement @ 1420'.

Top of cement at 4810'.

Callup perforations 5678-5698; 5709-5714 (2 SPF); fractured with oil and sand.

2 7/8", 6.4#, J-55 casing set at 5950' with 326 sacks cement.

Top of cement at 6100'.

Upper Dakota perforations 6286-6291; 6318-6324; 6371-6376 (2 SPF); fractured with water and sand.

Lower Dakota perforations 6418-6434 (2 SPF); fractured with water and sand.

2 7/8", 6.4#, J-55 casing set at 6525' with 81 sacks cement.

T.D. 6548'

El Paso Natural Gas Company

El Paso, Texas

March 13, 1961

New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Attention: Mr. A. L. Porter, Jr.

Re: Huerfano Unit Well #113
C-33-27-10

Gentlemen:

Attached are three copies of an application for a slim hole dual completion well in the Angels Peak Gallup and Basin Dakota gas pools. This well is in one of the outside sections of the Huerfano Unit which is operated by El Paso Natural Gas Company. Pan American Petroleum Corporation is the offset operator outside the boundary of the Huerfano Unit and is being furnished with a copy of this application. It is requested that this application be set for a hearing as soon as possible.

If any additional information is needed, please advise.

Very truly yours,

PRORATION DEPARTMENT

G. A. Hickson
G. A. Hickson
Engineer

GAH:mm
attach.

cc: Pan American Petroleum Corp.
Farmington, New Mexico
Attention: Mr. George Eaton

J O SETH
A K. MONTGOMERY
OLIVER SETH
WM. FEDERICI
FRANK ANDREWS
FRED C. HANNAHS
GEORGE A. GRAHAM, JR.

SETH, MONTGOMERY, FEDERICI & ANDREWS

ATTORNEYS AND COUNSELORS AT LAW

301 DON GASPAR AVENUE
SANTA FE, NEW MEXICO

POST OFFICE BOX 828
TELEPHONE YU 3-7315

March 23, 1961

New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Re: Case No. 2230

Gentlemen:

This letter will constitute our entry of appearance
as local counsel of El Paso Natural Gas Company in
the above case No. 2230.

We will be associated in this proceeding with Mr.
Ben Howell, Mr. Garrett C. Whitworth and other
company attorneys of El Paso Natural Gas Company.

Very truly yours,

SETH, MONTGOMERY, FEDERICI & ANDREWS

By



OS:wcl

J. O. SETH
A. K. MONTGOMERY
OLIVER SETH
WM. FEDERICI
FRANK ANDREWS
FRED C. HANNAHS
GEORGE A. GRAHAM, JR.

SETH, MONTGOMERY, FEDERICI & ANDREWS

ATTORNEYS AND COUNSELORS AT LAW
301 DON GASPAR AVENUE
SANTA FE, NEW MEXICO

POST OFFICE BOX 828
TELEPHONE YU 3-7315

April 4, 1961

New Mexico Oil Conservation Commission
Post Office Box 871
Santa Fe, New Mexico

Re: Case No. 2230

Gentlemen:

This letter will constitute our entry of appearance as
local counsel of El Paso Natural Gas Company in the above
case no. 2230.

We will be associated in this proceeding with Mr. Ben Howell,
Mr. Garrett C. Whitworth and other company attorneys of El
Paso Natural Gas Company.

SETH, MONTGOMERY, FEDERICI & ANDREWS

By:



FCH:dd

GOVERNOR
EDWIN L. MECHEM
CHAIRMAN

State of New Mexico
Oil Conservation Commission

LAND COMMISSIONER
E. S. JOHNNY WALKER
MEMBER

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

P. O. BOX 871
SANTA FE

April 18, 1961

Mr. Oliver Seth
P. O. Box 828
Santa Fe, New Mexico

Re: Case No. 2230
Order No. R-1940
Applicant:
El Paso Natural Gas Co.

Dear Sir:

is one copy
Enclosed herewith ~~are two copies~~ of the above-referenced
Commission order recently entered in the subject case.

Very truly yours,

A. L. Porter, Jr.
A. L. PORTER, Jr.
Secretary-Director

ir/

Carbon copy of order also sent to:

Hobbs OCC X
Artesia OCC
Aztec OCC X

OTHER Garrett Whitworth

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 2230
Order No. R-1940

APPLICATION OF EL PASO NATURAL GAS
COMPANY FOR A GAS-GAS DUAL COMPLETION
IN THE ANGELS PEAK-GALLUP POOL AND IN
THE BASIN-DAKOTA POOL, SAN JUAN COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on April 5, 1961, at Santa Fe, New Mexico, before Daniel S. Nutter, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 18th day of April, 1961, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Daniel S. Nutter, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, El Paso Natural Gas Company, is the owner and operator of the Huerfano Unit Well No. 113, located in Unit C, Section 33, Township 27 North, Range 10 West, NMDM, San Juan County, New Mexico.

(3) That the applicant proposes to dually complete said Huerfano Unit Well No. 113 in such a manner as to permit the production of gas from the Angels Peak-Gallup Pool and the production of gas from the Basin-Dakota Pool through parallel strings of 2 7/8-inch casing cemented in a common well bore.

(4) That the applicant further proposes to cement each string of casing throughout the Gallup and Dakota formations and to a point at least 100 feet above the formation and to install centralizers or turbolizers at approximately 30-foot intervals throughout the producing formations and to a point at least 100 feet above said formations.

(5) That the mechanics of the proposed dual completion are feasible and in accord with good conservation practices.

-2-

CASE No. 2230
Order No. R-1940

(6) That approval of the subject application will neither cause waste nor impair correlative rights.

IT IS THEREFORE ORDERED:

That the applicant, El Paso Natural Gas Company, is hereby authorized to dually complete its Huerfano Unit Well No. 113, located in Unit C, Section 33, Township 27 North, Range 10 West, NMPM, San Juan County, New Mexico, in such a manner as to permit the production of gas from the Angels Peak-Gallup Pool and the production of gas from the Basin-Dakota Pool through parallel strings of 2 7/8-inch casing cemented in a common well bore.

PROVIDED HOWEVER, That each string of casing shall be cemented throughout the Gallup and Dakota formations and to a point at least 100 feet above the producing formation and centralizers or turbolizers shall be installed at approximately 30-foot intervals throughout the producing formations and to a point at least 100 feet above each of said formations.

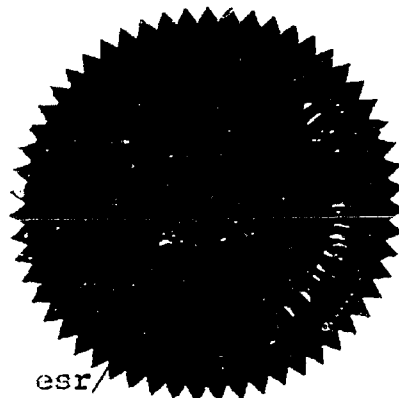
PROVIDED FURTHER, That the applicant shall complete, operate, and produce said well in accordance with the provisions of Section V, Rule 112-A.

PROVIDED FURTHER, That the applicant shall take communication tests upon completion and annually thereafter during the Annual Deliverability Test Period for the Basin Dakota Pool.

IT IS FURTHER ORDERED:

That jurisdiction of this cause is hereby retained by the Commission for such further order or orders as may seem necessary or convenient for the prevention of waste and/or the protection of correlative rights; upon failure of the applicant to comply with any requirement of this order, the Commission may terminate the authority herein granted and require the applicant or its successors and assigns to limit its activities to regular single-zone production in the interest of conservation.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.



STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

Ed L. Mechem
EDWIN L. MECHEM, Chairman

E. S. Walker
E. S. WALKER, Member

A. L. Porter, Jr.
A. L. PORTER, Jr., Member & Secretary

esr/

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
APRIL 5, 1961

EXAMINER HEARING

IN THE MATTER OF
:

CASE 2230: Application of El Paso Natural Gas Company for:
a gas-gas dual completion utilizing two strings
of casing. Applicant, in the above-styled :
cause, seeks an order authorizing the dual :
completion of its Huerfano Unit Well No. 113, :
located in Unit C, Section 33, Township 27 :
North, Range 10 West, San Juan County, New :
Mexico, in such a manner as to permit the pro- :
duction of gas from the Angels Peak-Gallup :
Pool and the production of gas from the Basin- :
Dakota Pool through parallel strings of 2 7/8- :
inch casing cemented in a common well bore. :
:

BEFORE:

Daniel S. Mutter, Examiner

T R A N S C R I P T O F P R O C E E D I N G S

MR. NUTTER: The next case will be 2230.

MR. MORRIS: Case 2230. Application of El Paso Natural
Gas Company for a gas-gas dual completion utilizing two strings of
casing.

MR. WHITWORTH: Garrett Whitworth, representing El Paso.
Written appearance has been made by local counsel, firm of Seth,
Montgomery, Federici & Andrews, Santa Fe. I have one witness to

DEARNLEY-MEIER REPORTING SERVICE, Inc.

PHONE CH 3-6691

ALBUQUERQUE, NEW MEXICO



be sworn, i.e. Hickson.

(Witness sworn)

GERALD A. HICKSON,

called as a witness, having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. WHITWORTH:

Q Will you please state your full name, by whom and in what capacity you are employed?

A Gerald A. Hickson. Proration engineer for El Paso Natural Gas Company.

Q Mr. Hickson, have you previously testified before this Commission as a proration engineer and have your qualifications been made a matter of record?

A Yes, they have.

MR. WHITWORTH: Are the qualifications of the witness acceptable?

MR. NUTTER: Yes, sir.

Q (By Mr. Whitworth) Are you familiar with El Paso's application in this case?

A Yes.

Q What does El Paso seek by this application?

A We're seeking a gas-gas dual completion, a slim hole method in the Basin-Dakota and the Angels Peak-Gallup.

Q Where is this well located?

DEARNLEY-MEIER REPORTING SERVICE, Inc.

PHONE CH 3-6691

ALBUQUERQUE, NEW MEXICO



DEARNLEY-MEIER REPORTING SERVICE, Inc.

PHONE CH 3-5691

ALBUQUERQUE, NEW MEXICO

A The well is located in Unit C of Section 33, Township 27 North, Range 10 West.

Q Do you have a plat depicting the exact location of the well?

A Yes, I do.

Q Is that El Paso's Exhibit No. 1?

A Yes.

(Whereupon, El Paso's Exhibit No. 1 was marked for identification.)

Q This well is located in what Unit?

A Huerfano.

Q Who is the operator?

A El Paso Natural Gas Company.

Q What acreage will be dedicated to each zone?

A The west half of Section 33 in Township 27, Range 10 West.

Q Would you repeat what two zones this well is completed in?

A It will be completed in the Gallup formation of the Angels Peak-Gallup Pool and the Dakota Pool formation of the Basin-Dakota.

Q When was the well completed?

A Sometime in the middle of December, about the 15th of December, 1960.

Q Do you have an Exhibit depicting the physical equipment



DEARNLEY-MEIER REPORTING SERVICE, Inc.

PHONE CN 3-6691

ALBUQUERQUE, NEW MEXICO

that has gone into the well?

A Yes. We have a schematic diagram of the dual completion.

Q Is that El Paso's Exhibit No. 2?

A Yes.

(Whereupon, El Paso's Exhibit No. 2 was marked for identification.)

Q Would you explain what the Exhibit shows?

A It shows the casing program, the cement program, and the perforations of the well. We have 10 3/4 inch casing set at 292 feet. Cement to the surface with 340 sacks. We have the Pictured Cliff covered with an inch and quarter J-55 tubing set at 1904 feet with 170 sacks. We cut off the inch and quarter tubing at 1290 feet, which is approximately 500 feet above the top of the Pictured Cliff. The Pictured Cliff formation is from 1806 feet to 1882 feet. It's covered by 400 feet on the top and about 20 feet below.

MR. NUTTER: What's the bottom of the Pictured Cliff?

A 1882 feet. The Gallup completion, we have 2 7/8 inch tubing set at 5950, set with 326 sacks of cement. The well was perforated 5678 to 5698; 5709 to 5714, and fractured with oil and sand. The top of the cement is at 4810 feet, which will be 368 feet above the perforations.

The Dakota was set at 6525 feet with 81 sacks of cement. The top of the cement is at 6100 feet. The Upper Dakota perforations



DEARNLEY-MEIER REPORTING SERVICE, Inc.

PHONE CN 3-6191

ALBUQUERQUE, NEW MEXICO

are at 6236 to 6281; 6318 to 6324; 6371 to 6376, fractured with water and sand. The Lower Dakota perforations are at 6418 to 6434. They are also fractured with water and sand. The cement is 136 feet above the top of the perforations on the Dakota. We have 572 feet of cement separating the two zones of perforations.

Q You used cement as a means of separating production from the two zones?

A Yes.

Q Was any kind of test taken to determine whether this was effective?

A Yes, sir. We have a separation test, which is recorded on a packer leakage test form.

Q Is that El Paso's Exhibit No. 4?

A No. 3.

(Whereupon, El Paso's Exhibit No. 3 was marked for identification.)

Q What does this test reveal?

A It shows the shut-in pressures on the two zones of completion and the flowing zone; two test periods, one flowing zone and the shut-in pressures taken on the upper zone with the lower zone flowing, and also the upper zone flowing and the lower zone shut-in pressures. It shows a build-up in both zones as the alternate zone was being produced.

Q This well is a gas well, is it not --

A Yes.



DLARNLEY-MEIER REPORTING SERVICE, Inc.

PHONE CH 3-6691

ALBUQUERQUE, NEW MEXICO

Q -- in both zones?

A Yes.

Q What is the GOR?

A The Dakota produced 302 MCF per day with no oil. The Gallup produced 27.8 barrels per day with two million one hundred twenty-seven MCF with a GOR of 76,511. The Angels Peak-Gallup Pool is set out for a gas well defined as 30,000 GOR or greater, and so this falls within the limits of a gas well in the Angels Peak-Gallup.

Q When was this GOR test taken?

A I think it was around the first of the year. We don't have it on this -- February 10, 1961.

Q Do you have an Exhibit with the GOR data on it?

A Yes, sir.

Q Is that El Paso's Exhibit No. 4?

A 4, yes.

(Whereupon, El Paso's Exhibit No. 4(a) was marked for identification.)

Q What is El Paso's Exhibit 4 (b)?

A 4 (b) is the open flow test data on the Dakota.

(Whereupon, El Paso's Exhibit No. 4(b) was marked for identification.)

Q What does this Exhibit show?

A It shows the production and the Aof for the well, the shut-in pressure, gravity of the gas. The well had an Aof of 304



DEARNLEY-MEIER REPORTING SERVICE, Inc.

PHONE CH 3-6691

ALBUQUERQUE, NEW MEXICO

MCF per day. The shut-in pressure was 2,011 pounds.

Q Mr. Hickson, was a similar case heard before this Commission involving a well in the same unit recently, being Huerfano No. 116?

A Yes, it was.

Q Was that a slim hole completion gas-gas dual?

A Yes, it was identical completion as the 113.

Q And the Commission has granted your relief requested in that case --

A Yes.

Q -- by order?

A Yes.

Q Why is it advantageous to have a slim hole dual completion?

A Well, I think in this area it's strictly a matter of economics. There's quite a savings as to a slim hole completion over a normal dual due to the rig time. Move this rig off and put on a smaller unit to complete the well, we save on the casing string. Normally we set a 7 inch casing string in completion of this matter, normal completion, so it's purely economics. The 116 could not have been completed on normal dual. This well might have been. We did get a little better test in the Gallup, but there's a savings here of some thirty to forty thousand dollars.

Q In your opinion, would the granting of the application in this case prevent waste and protect correlative rights?



DEARNLEY-MEIER REPORTING SERVICE, Inc.

PHONE CH 3-6691

ALBUQUERQUE, NEW MEXICO

A Yes, sir.

Q Were Exhibits 1, 2, 3, 4-- 4 (a) and 4 (b) prepared by you or under your direct supervision?

A Yes, they were.

MR. WHITWORTH: We ask that the Exhibits be admitted.

MR. NUTTER: El Paso's Exhibits 1 through 4 (a) and 4 (b) are admitted.

(Whereupon, El Paso's Exhibits 1 through 4 (a) and 4 (b) were admitted in evidence.)

Q (By Mr. Whitworth) Do you have anything further to add to your testimony?

A Yes, sir. I have one more exhibit that we might ought to add at this time. It's the location of the centralizers and turbulizers on the two strings.

Q That will be El Paso's Exhibit No. 5?

A Yes, sir.

(Whereupon, El Paso's Exhibit No. 5 was marked for identification.)

MR. WHITWORTH: We ask that El Paso's Exhibit No. 5 be admitted also.

MR. NUTTER: El Paso's Exhibit No. 5 will be admitted.

(Whereupon, El Paso's Exhibit No. 5 was admitted in evidence.)

Q (By Mr. Whitworth) Does that complete your testimony?

A Yes, sir.



MR. WHITWORTH: That's all we have.

CROSS-EXAMINATION

BY MR. NUTTER:

Q I take it, from Exhibit 5, that the centralizers and turbulizers were set throughout the cement interval on both the Gallup and Dakota pays?

A No, I don't believe it's completely through the cemented interval. They're complete through the perforated interval, if that's what you are talking about. On the Gallup we set the centralizer to 5,493, and the cement went on.

Q They are set at a minimum feet above the perforations?

A Yes, they are.

Q What date was this oil well test, Exhibit No. 4 (a), conducted on the Gallup zone of the completion?

A February 10th.

Q Had the well recovered all of its load oil at that time?

A No, sir, I don't believe it had. It was still producing.

Q If anything, you would expect the GOR to decrease on the well -- I mean to increase, rather than to decrease?

A To increase, yes.

Q At the present time it's well within the defined limits of what a gas-oil in the Angels Peak-Gallup must be?

A Yes, sir, by some forty thousand.

Q You don't anticipate that this well will become an oil well in the Gallup?

DEARNLEY-MEIER REPORTING SERVICE, Inc.

ALBUQUERQUE, NEW MEXICO

PHONE CH 3-6691



DEARNLEY-MEIER REPORTING SERVICE, Inc.

PHONE CH 3-6691

ALBUQUERQUE, NEW MEXICO

A No, sir, I don't. I think that's very remote.

MR. NUTTER: Are there any questions of Mr. Hickson?

MR. PAYNE: Yes.

MR. NUTTER: Mr. Payne.

BY MR. PAYNE:

Q Do you feel that you set your surface casing deep enough to protect any fresh waters in the area?

A Yes, I do. I think it was checked out in the area.

Q And that depth is 292 feet --

A Yes.

Q -- with cement circulated to the surface?

A Yes.

Q Both zones are flowing at present, is that correct?

A Yes.

Q I realize this is a gas-gas dual, but in this type of installation, is it possible to have artificial lift?

A Well, yes, sir, I think we could. I don't think we have that problem in this well.

Q Did this type installation give you any workover problem, Mr. Hickson?

A Not at the present time. At one time wire line equipment was such that there were some hazards and problems involved, but they're improving every day, you might say, and coming up with new equipment to workover wells of this type.

Q Are there any particular corrosion problems in this area



DEARNLEY-MEIER REPORTING SERVICE, Inc.

PHONE CH 3-6691

ALBUQUERQUE, NEW MEXICO

that might make this type of installation undesirable?

A No, sir. This gas is sweet in both cases, and the oil.

Q You feel that the cement will adequately segregate the two producing higher zones?

A Yes. We have 570 feet separating the two zones of production.

MR. NUTTER: Did El Paso find it better operational practice to cement the Pictured Cliff with the string of inch and quarter rather than to use a D.V. tool on the string of one of the casing?

A I can't testify to that except in the past two wells we have operated that way.

Q (By Mr. Payne) By having the string of inch and quarter, if you had any fluids above and below this cement plug in the Pictured Cliff, they could migrate to the other side of the plug, though, could they not?

A You mean through --

Q Through the inch and quarter tubing?

A No, I don't think so. I imagine that the lower half of this tubing is sealed off with cement; I am certain.

Q You feel that the bottom portion would be full of cement?

A Yes, I am sure they didn't wash the tubing out, I would say 300 feet of it, anyway.

MR. NUTTER: Any further questions? He may be excused.

(Witness excused)



MR. NUTTER: Do you have anything further?

MR. WHITWORTH: Nothing further.

MR. NUTTER: Does anyone have anything further to offer in Case 2230? We will take the case under advisement and call Case 2231.

DEARNLEY-MEIER REPORTING SERVICE, Inc.

ALBUQUERQUE, NEW MEXICO

PHONE CH 3-6691



STATE OF NEW MEXICO)
) ss
 COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Court Reporter, in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me in machine shorthand and reduced to typewritten transcript under my personal supervision, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal this, the 11th day of April, 1961, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Ada Dearnley
 NOTARY PUBLIC

My Commission expires:

June 19, 1963

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2830, heard by me on 4-5, 1961.

Joachim, Examiner
 New Mexico Oil Conservation Commission

DEARNLEY-MEIER REPORTING SERVICE, Inc.

PHONE CH 3-6691

ALBUQUERQUE, NEW MEXICO

