

2.

Case No.

2261

Application, Transcript,
and Exhibits, Etc.

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. 2261
Order No. R-1979

APPLICATION OF CONTINENTAL OIL
COMPANY FOR TWO NON-STANDARD GAS
PROBATION UNITS IN THE EUMONT GAS
POOL, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on May 4, 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.

NW, on this 17th day of May, 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, Continental Oil Company, seeks the establishment of a 480-acre non-standard gas probation unit in the Eumont Gas Pool, consisting of the S/2 and the NE/4 of Section 24, Township 20 South, Range 37 East, NMPM, Lea County, New Mexico, said unit to be dedicated to the SEMU Eumont Well No. 57, located 1980 feet from the South line and 1980 feet from the West line of said Section 24.
- (3) That the applicant further seeks the establishment of a 480-acre non-standard gas probation unit in the Eumont Gas Pool, consisting of the NW/4 of Section 24 and the SE/4, the SW/4 NE/4, the S/2 SW/4 and the NW/4 SW/4 of Section 13, all in Township 20 South, Range 37 East, NMPM, Lea County, New Mexico, said unit to be dedicated to the SEMU Eumont Well No. 69, located 1980 feet from the North line and 1980 feet from the West line of said Section 24.
- (4) That the acreage included in both of the above-described non-standard gas probation units is presumed to be productive of gas from the Eumont Gas Pool.

-2-

CASE No. 2261
Order No. R-1979

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

IT IS THEREFORE ORDERED:

(1) That a 480-acre non-standard gas proration unit in the Eumont Gas Pool, consisting of the S/2 and the NE/4 of Section 24, Township 20 South, Range 37 East, NMPM, Lea County, New Mexico, is hereby established. Said unit shall be dedicated to the SEMU Eumont Well No. 67, located 1980 feet from the South line and 1980 feet from the West line of said Section 24.

(2) That a 480-acre non-standard gas proration unit in the Eumont Gas Pool, consisting of the NW/4 of Section 24 and the SE/4, SW/4 NE/4, the S/2 SW/4 and the NW/4 SW/4 of Section 13, all in Township 20 South, Range 37 East, NMPM, Lea County, New Mexico, is hereby established. Said unit shall be dedicated to the SEMU Eumont Well No. 69, located 1980 feet from the North line and 1980 feet from the West line of said Section 24.

(3) That the allowable assigned to each of the above-described non-standard gas proration units shall bear the same ratio to a standard allowable in the Eumont Gas Pool as the acreage in said unit bears to the acreage in a standard gas proration unit in the Eumont Gas Pool.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION



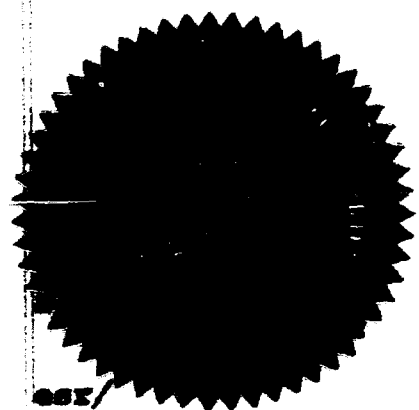
EDWIN L. MECHEM, Chairman



E. S. WALKER, Member



A. L. FOSTER, JR., Member & Secretary



esx/

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date 5/12/61

CASE 2261

Hearing Date 5/4/61 9am
DSN @ SF

My recommendations for an order in the above numbered cases are as follows:

*Enter an order approving the
two non-standard units requested
by applicant*

Stan Turner
Chief Examiner
Examiner

BEFORE THE OIL CONSERVATION COMMISSION

OF THE

STATE OF NEW MEXICO

Case 2261

*640
80
720*

IN THE MATTER OF THE APPLICATION OF CONTINENTAL OIL COMPANY FOR CANCELLATION OF A 640-ACRE STANDARD GAS PRORATION UNIT CONSISTING OF SECTION 24, T-20S, R-37E, AND CANCELLATION OF AN 80-ACRE NON-STANDARD GAS PRORATION UNIT CONSISTING OF THE S/2 OF THE SE/4 OF SECTION 13, T-20S, R-37E, AND THE REASSIGNMENT OF THIS ACREAGE TO BE INCLUDED IN TWO PRORATION UNITS TO CONSIST OF THE S/2 AND NE/4 OF SECTION 24 TO BE ALLOCATED TO THE SEMU EUMONT 67 AND THE NW/4 OF SECTION 24, AND THE SE/4, THE SW/4 OF THE NE/4, AND THE S/2 AND THE NW/4 OF THE SW/4 OF SECTION 13, T-20S, R-37E, TO BE ALLOCATED TO THE SEMU EUMONT 69, EUMONT GAS POOL, NMPM, LEA COUNTY, NEW MEXICO.

A P P L I C A T I O N

Comes now applicant, Continental Oil Company, and petitions the Commission for an order approving the cancellation of the 640-acre standard proration unit consisting of Section 24, T-20S, R-37E, NMPM, Lea County, New Mexico, assigned jointly to the SEMU Eumont No. 67 and the SEMU Eumont No. 69 wells, and the cancellation of an 80 acre non-standard gas proration unit consisting of the S/2 of the SE/4 of Section 13, T-20S, R-37E, NMPM, Lea County, New Mexico, assigned to the SEMU Permian No. 41 well. Continental Oil Company requests the reassignment of this acreage for the formation of two non-standard gas proration units consisting of 480 acres in the S/2 and the NE/4 of Section 24, T-20S, R-37E, to be allocated to the SEMU Eumont well No. 67, located 1980' PSL and 1980' FWL of said Section 24; and 480 acres consisting of the NW/4 of Section 24, T-20S, R-37E and the SE/4, the SW/4 of the NE/4, and the S/2 and NW/4 of the SW/4 of Section 13, T-20S, R-37E to be allocated to the SEMU Eumont well No. 69, located 1980' FWL and 1980' FWL of Section 24, T-20S, R-37E, and in support thereof would show:

1. That applicant is co-owner and operator of the SEMU Eumont lease containing, among other lands, the SE/4, the SW/4 of the NE/4 and the S/2 and the NW/4 of the SW/4 of Section 13, and all of Section 24 in T-20S, R-37E, NMPM, Lea County, New Mexico.
2. That applicant's SEMU Eumont well No. 67 is capable of producing gas in excess of a 480-acre unit gas allowable for the Eumont Pool.
3. That applicant's SEMU Eumont well No. 69 is capable of producing gas in excess of a 480-acre unit gas allowable for the Eumont Pool.

4. That no part of the acreage comprising the S/2 and the NW/4 of the SW/4, the SW/4 of the NE/4 and the N/2 of the SE/4 of Section 13, T-20S, R-37E is allocated to a gas well and that all said acreage may reasonably be presumed to be productive of gas from the Fumont Pool and should be allocated to a gas well in the interests of the prevention of waste and the protection of correlative rights.

5. That the most practical and economical method of allocating said acreage for Fumont Pool gas production is by the cancellation of the standard gas proration unit assigned jointly to the SEMU Fumont wells 67 and 69 and the non-standard gas proration unit assigned to the SEMU Permian No. 41 well and the reassignment of acreage in said Section 13 and 24 as described above.

Wherefore, applicant prays that the application be set for hearing before the Commission's duly appointed examiner, that appropriate notice thereof be given and that upon hearing an order be entered granting applicant the cancellation of the standard gas proration unit assigned jointly to SEMU Fumont wells 67 and 69 and the non-standard gas proration unit assigned to the SEMU Permian No. 41 well and an exception to Rule 5(a) of the General Rules and Regulations for the prorated gas pools of Southeastern New Mexico contained in Order No. R-1670 for the formation of two non-standard gas proration units described above.

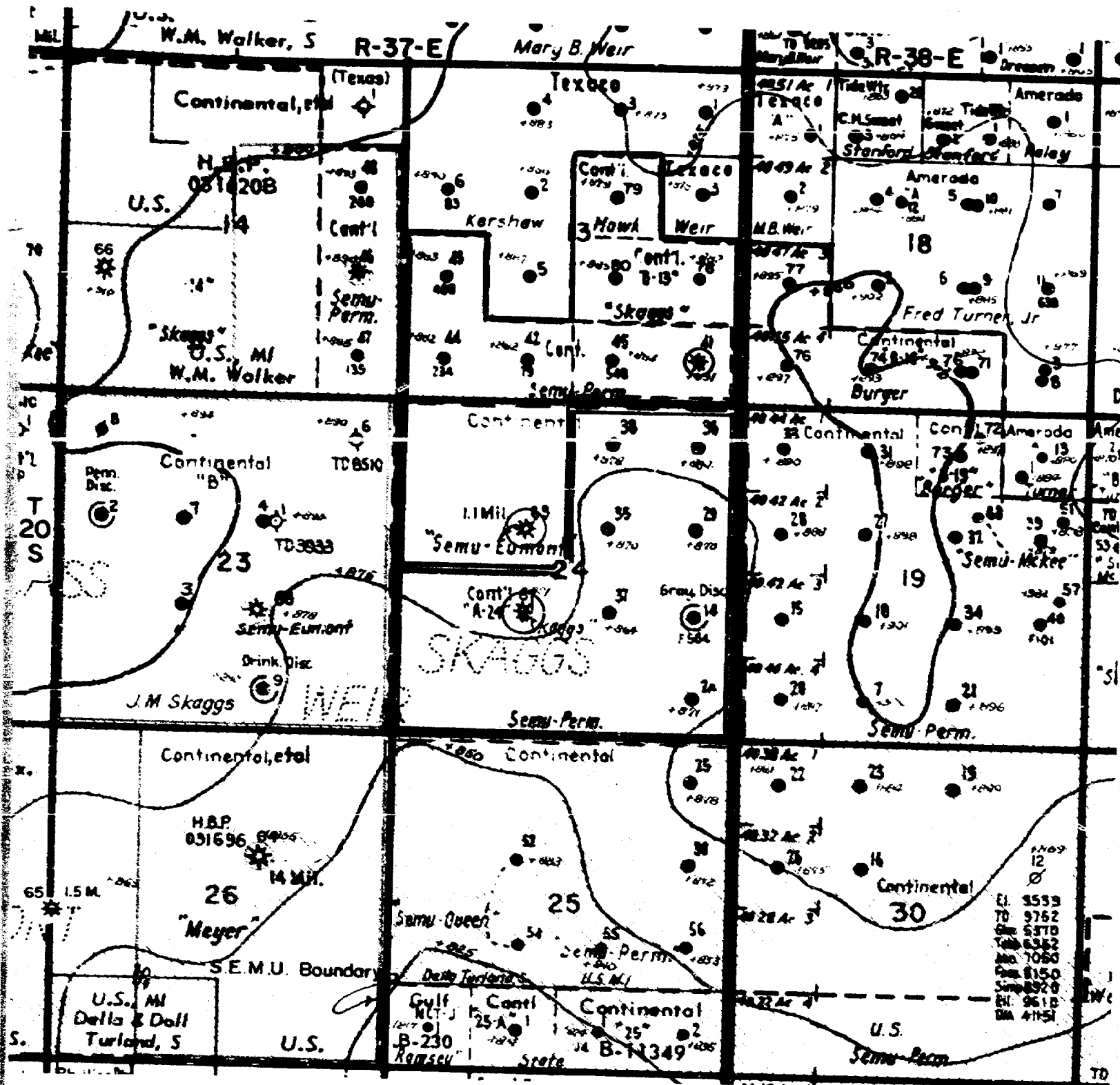
Respectfully submitted,

CONTINENTAL OIL COMPANY

W. A. Mead

Wm. A. Mead
Division Superintendent
of Production
New Mexico Division

WAN-EMP



STRUCTURE MAP - EUMONT AREA
 Contoured On Top Of Yates

Contour Int: 25'

Scale: 1"=2000'

LEGEND

- Existing Gas Wells No's. 67 ○ 69 ○ 41 ○
- Existing Gas Unit for Wells 67 & 69 --- 41 ---
- Proposed Gas Unit for 67 — 69 —
- Offset Gas Wells — — — — —
- Offset Gas Units — — — — —

Continental Oil Co.

March 20th, '61.

No. 13-61

DOCKET: EXAMINER HEARING - THURSDAY, MAY 4, 1961

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Nutter, Examiner, or
Elvis A. Utz, as alternate examiner:

CONTINUED CASE

CASE 2234: Application of Kay Kimbell for an order force-pooling a
320-acre gas proration unit in the Basin-Dakota Pool.
Applicant, in the above-styled cause, seeks an order force-
pooling all mineral interests in the Basin-Dakota Pool in
the E/2 of Section 22, Township 29 North, Range 11 West,
San Juan County, New Mexico, including those of Roy L. Cook
as lessee and various other parties as lessors in the E/2
NW/4 NE/4 of said Section 22.

NEW CASES

CASE 2261: Application of Continental Oil Company for two non-standard
gas proration units. Applicant, in the above-styled cause,
seeks the establishment of a 480-acre non-standard gas
proration unit in the Eumont Gas Pool consisting of the
S/2 and the NE/4 of Section 24, Township 20 South, Range
37 East, Lea County, New Mexico. Said unit is to be dedi-
cated to the SEMU Eumont Well No. 67, located 1980 feet
from the South and West lines of said Section 24.

Applicant further seeks the establishment of a 480-acre
non-standard gas proration unit in the Eumont Gas Pool
consisting of the NW/4 of Section 24, and the SE/4, the SW/4
NE/4, the S/2 SW/4 and the NW/4 SW/4 of Section 13, all in
Township 20 South, Range 37 East, Lea County, New Mexico.
Said unit is to be dedicated to the SEMU Eumont Well No. 69,
located 1980 feet from the North and West lines of said
Section 24.

CASE 2262: Application of V. S. Welch for an unorthodox oil well
location. Applicant, in the above-styled cause, seeks
approval of an unorthodox oil well location in the Culwin-
Yates Pool for a well to be drilled at a point 330 feet
from the South line and 2590 feet from the West line of
Section 29, Township 18 South, Range 31 East, Eddy County,
New Mexico.

CASE 2263: Application of Collier Drilling Company for an exception to Rule 309 (a). Applicant, in the above-styled cause, seeks an exception to Rule 309 (a) to permit the transportation of oil from the Western Yates Lease, comprising the SE/4 NW/4 of Section 20, Township 18 South, Range 28 East, Eddy County, New Mexico, to a separate tank battery located on its Amerada Lease, comprising the NE/4 NW/4 of said Section 20.

CASE 2264: Application of United States Smelting Refining and Mining Company for an oil-gas dual completion and for permission to commingle the production from two separate pools. Applicant, in the above-styled cause, seeks authorization to dually complete its Federal 11-20-34 Well No. 1, located 1980 feet from the North line and 2130 feet from the West line of Section 11, Township 20 South, Range 34 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Bone Springs formation adjacent to the Lea-Bone Springs Pool and the production of gas from an undesignated Pennsylvanian pool through parallel strings of 2-inch tubing.

Applicant further proposes to commingle the production from both of said pools in said well after metering only the Pennsylvanian pool production.

CASE 2265: Application of Nash, Windfohr and Brown for an unorthodox well location. Applicant, in the above-styled cause, seeks approval of an unorthodox location in an undesignated Abo pool for its Jackson Federal Well No. 23-B, located 1420 feet from the South line and 1980 feet from the East line of Section 24, Township 17 South, Range 30 East, Eddy County, New Mexico.

CASE 2266: Application of Nearburg & Ingram for permission to commingle the production from two separate leases, and from two separate pools. Applicant, in the above-styled cause, seeks permission to commingle, after separate measurement, the Southwest Gladiola-Pennsylvanian Pool production from all wells on its Keating lease, comprising the NE/4 of Section 34 with Southwest Gladiola-Pennsylvanian and Southwest Gladiola-Devonian production from all wells on its Midhurst Lease, comprising the NW/4 of Section 35, all in Township 12 South, Range 37 East, Lea County, New Mexico.

CASE 2267: Application of Byard Bennett for permission to institute a waterflood project in the Caprock-Queen Pool, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks permission to institute a waterflood project in the Caprock-Queen Pool in an area comprising the E/2 SE/4 of Section 20 and the SW/4 of Section 21, all in Township 14 South, Range 31 East, Chaves County, New Mexico, by the injection of water into the Stella Zimmerman Well No. 2, located in the SE/4 SE/4 of said Section 20.

CASE 2268: Application of Humble Oil & Refining Company for an exception to Rule 303 (a). Applicant, in the above-styled cause, seeks an exception to Rule 303 (a) to permit commingling, without separate measurement, of the production from the Paddock, Penrose-Skelly and Drinkard Pools on the J. L. Greenwood Lease, comprising the S/2 of Section 9, Township 22 South, Range 37 East, Lea County, New Mexico.

CASE 2269: Application of Great Western Drilling Company for an oil-salt water dual completion. Applicant, in the above-styled cause, seeks authorization to dually complete its Federal MM Well No. 2, located in the SE/4 NW/4 of Section 8, Township 9 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Bough C formation adjacent to the East Allison-Pennsylvanian Pool and the injection of salt water into the San Andres formation.

CASE 2270: Application of Pan American Petroleum Corporation for an oil-oil dual completion. Applicant, in the above-styled cause, seeks authorization to dually complete its Greenwood Unit Well No. 3, located in Unit H, Section 27, Township 18 South, Range 31 East, Eddy County, New Mexico, in such a manner as to permit the production of oil from an undesignated Bone Springs pool and the production of oil from an undesignated Wolfcamp pool through parallel strings of 2-inch tubing.

CASE 2271: Application of Pan American Petroleum Corporation for two non-standard oil proration units and for an unorthodox oil well location. Applicant, in the above-styled cause, seeks the establishment of a 70.58-acre non-standard oil proration unit in the Cha Cha-Gallup Oil Pool consisting of Lots 8 and 9 and the S/2 of that portion of the San Juan River channel lying in the S/2 NE/4, all in Section 18,

CASE 2271 (Cont.)

Township 29 North, Range 14 West, San Juan County, New Mexico, said unit to be dedicated to the Navajo Tribal "G" Well No. 7, at an unorthodox location 2545 feet from the North line and 1670 feet from the East line of said Section 18, and of a 46.75-acre non-standard oil proration unit in said pool consisting of Lot 6 and the S/2 of that portion of the San Juan River channel lying in the SE/4, all in Section 16, Township 29 North, Range 14 West, San Juan County, New Mexico, said unit to be dedicated to the Navajo Tribal "E" Well No. 10, located 660 feet from the South line and 1980 feet from the East line of said Section 16.

CASE 2272:

Application of Pan American Petroleum Corporation for two non-standard oil proration units and for two unorthodox oil well locations. Applicant, in the above-styled cause, seeks the establishment of an 89.62-acre non-standard oil proration unit in the Cha Cha-Gallup Oil Pool consisting of Lots 2, 3 and 4 of Section 8, Township 28 North, Range 13 West, San Juan County, New Mexico, said unit to be dedicated to the C. J. Holder Well No. 11, at an unorthodox location 493 feet from the North line and 660 feet from the West line of said Section 8, and of an 89.22-acre non-standard oil proration unit in said pool consisting of Lot 1 of Section 8 and Lots 3 and 4 of Section 9, all in Township 28 North, Range 13 West, San Juan County, New Mexico, said unit to be dedicated to the C. J. Holder Well No. 12, at an unorthodox location 493 feet from the North line and 660 feet from the West line of said Section 9.

CASE 2273:

Application of El Paso Natural Gas Company for an exception to Rule 309 (a). Applicant, in the above-styled cause, seeks an exception to Rule 309 (a) to permit the transportation of oil produced on Federal Lease LC-064198-A, comprising the SE/4 of Section 18, prior to measurement, to tank batteries located on Federal Lease No. 025566, comprising the E/2 of Section 19, all in Township 19 South, Range 32 East, Lea County, New Mexico.

Docket No. 13-61

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CASE 2274:

Application of El Paso Natural Gas Company for an oil-gas dual completion. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its Lusk Deep Unit Well No. 2, located in Unit O, Section 18, Township 19 South, Range 32 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Strawn formation adjacent to the Lusk-Strawn Pool and the production of gas from the Morrow formation in an undesignated pool through parallel strings of 2 3/8-inch tubing.



Case 2261

CONTINENTAL OIL COMPANY

825 PETROLEUM BUILDING
ROSWELL, NEW MEXICO

April 3, 1961

WM. A. MEAD
DIVISION SUPERINTENDENT
OF PRODUCTION
NEW MEXICO DIVISION

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

Attention: Mr. A. L. Porter, Jr., Secretary-Director

Gentlemen:

Re: CONTINENTAL OIL COMPANY'S APPLICATION FOR CANCELLATION OF A 640-ACRE STANDARD GAS PRORATION UNIT CONSISTING OF SECTION 24, T20S, R37E, AND CANCELLATION OF AN 80-ACRE NSU UNIT CONSISTING OF THE S/2 OF THE SE/4, SECTION 13, T20S, R37E, AND THE REASSIGNMENT OF THIS ACREAGE TO TWO GAS PRORATION UNITS TO CONSIST OF THE S/2 AND NE/4 OF SECTION 24, TO BE ALLOCATED TO THE SEMU EUMONT 67 AND THE NW/4 OF SECTION 24, AND THE SE/4, THE SW/4 OF THE NE/4, AND THE S/2 AND THE NW/4 OF THE SW/4 OF SECTION 13, T20S, R37E TO BE ALLOCATED TO THE SEMU EUMONT 69, EUMONT GAS POOL, NMPM, LEA COUNTY, NEW MEXICO

We are attaching three copies of Continental Oil Company's application for reassignment of Eumont Gas Pool acreage to the SEMU Eumont Nos. 67 and 69 as described above.

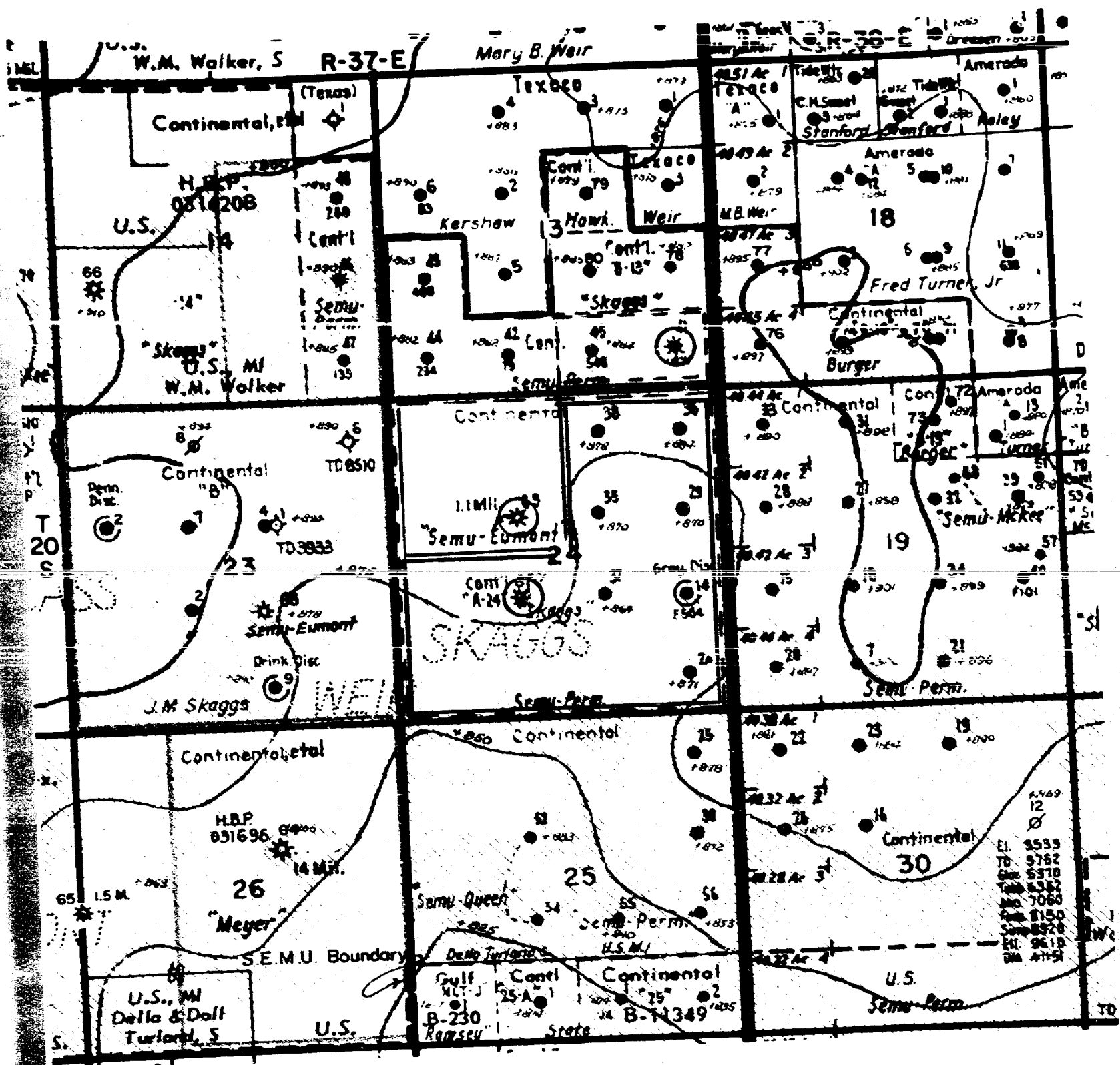
We respectfully request that you set this matter for hearing at the earliest convenient date.

Yours very truly,

W. A. Mead

WAM-sjk
Enc.

*Rocked
Mailed
4-21-61*



STRUCTURE MAP - EUMONT AREA

Contoured On Top Of Yates

Contour Int: 25'

Scale: 1"=2000'

LEGEND

- Existing Gas Wells No.'s. 67 ○ 69 ○ 41 ○
- Existing Gas Unit for Wells 67 & 69 ---41---
- Proposed Gas Unit for 67 ---69---
- Offset Gas Wells ○
- Offset Gas Units ---

March 20th, '61.

Continental Oil Co.

EXHIBIT I

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Exmont Formation Green County Lae
 Initial Annual Special X Date of Test 1-27-61
 Company Continental Oil Company Lease SRTU Exmont Well No. 67
 Unit K Sec. 24 Twp. 20S Rge. 37E Purchaser E.P.N.G.
 Casing 5 1/2 Wt. 14 I.D. 5.012 Set at 3900 Perf. 3608 To 3736
 Tubing 2 Wt. 4.7 I.D. 1.995 Set at 3610 Perf. - To -
 Gas Pay: From 3608 To 3736 L 3608 xG .671 -GL 2421 Bar.Press. 13.2
 Producing Thru: Casing - Tubing X Type Well Single
 Date of Completion: 5-31-57 Packer None Reservoir Temp. 90°
 Single-Bradenhead-G. G. or G.O. Dual

OBSERVED DATA

Tested Through ~~PSIEX~~ (SI) (SI) (Meter) Type Taps Flange

No.	Flow Data			Tubing Data		Casing Data		Duration of Flow Hr.	
	(PSIEX) (Line) Size	(SI) (Orifice) Size	Press. psig	Diff. h _w	Temp. °F.	Press. psig	Temp. °F.		Press. psig
SI						519		519	72
1.	4	.750	203	27.04	42	430		504	24
2.	4	.750	212	39.69	52	435		495	24
3.	4	.750	291	44.89	52	439		489	24
4.	4	.750	270	79.21	53	433		472	24
5.									

FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_w P_f}$	Pressure psia	Flow Temp. Factor F _t	Gravity Factor F _g	Compress. Factor F _{pv}	Rate of Flow Q-MCFPD @ 15.025 psia
1.	3.435	76.46	216.2	1.0178	.9427	1.024	258.0
2.	3.435	94.54	225.2	1.0078	.9427	1.025	316.2
3.	3.435	116.86	304.2	1.0078	.9427	1.033	393.9
4.	3.435	119.77	283.2	1.0068	.9427	1.050	502.9
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio - cf/bbl. Specific Gravity Separator Gas -
 Gravity of Liquid Hydrocarbons - deg. Specific Gravity Flowing Fluid -
 P_c 9.936 $(1-e^{-s})$ 0.153 P_c 532.2 P_c^2 283.2

No.	P _w P _w (psia)	P _t ²	F _c Q	(F _c Q) ²	(F _c Q) ² (1-e ^{-s})	P _w ²	P _c ² -P _w ²	Cal. P _w	P _w /P _c
1.	517.2					267.5	15.7		.978
2.	508.2					258.3	24.9		.95
3.	502.2					252.2	31.0		.94
4.	485.2					235.4	47.8		.91
5.									

Absolute Potential: 1,500 MCFPD; n .603
 COMPANY Continental Oil Company
 ADDRESS Box 421, Hobbs, New Mexico
 AGENT and TITLE W. D. Howard, Test Engineer
 WITNESSED E. B. Murray
 COMPANY El Paso Natural Gas Company

REMARKS

*Insufficient drawdown due to tendency to freeze off at chokes.

INSTRUCTIONS

This form is to be used for reporting multi-point back pressure tests on gas wells in the State, except those on which special orders are applicable. Three copies of this form and the back pressure curve shall be filed with the Commission at Box 871, Santa Fe.

The log log paper used for plotting the back pressure curve shall be of at least three inch cycles.

NOMENCLATURE

Q = Actual rate of flow at end of flow period at W. H. working pressure (P_w).
MCF/da. @ 15.025 psia and 60° F.

P_c = 72 hour wellhead shut-in casing (or tubing) pressure whichever is greater.
psia

P_w = Static wellhead working pressure as determined at the end of flow period.
(Casing if flowing thru tubing, tubing if flowing thru casing.) psia

P_t = Flowing wellhead pressure (tubing if flowing through tubing, casing if flowing through casing.) psia

P_f = Meter pressure, psia.

h_w = Differential meter pressure, inches water.

F_g = Gravity correction factor.

F_t = Flowing temperature correction factor.

F_{pv} = Supercompressibility factor.

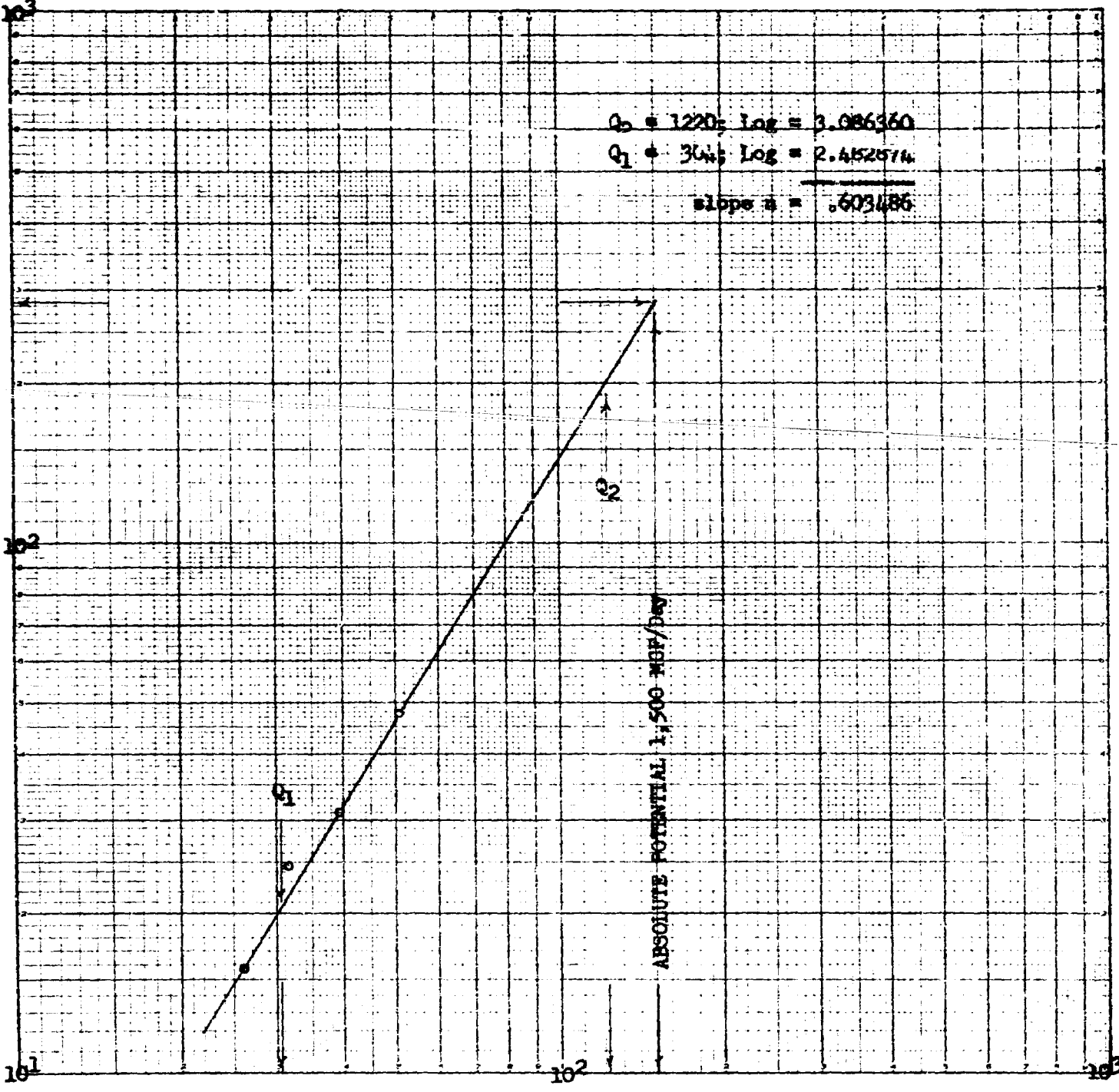
n = Slope of back pressure curve.

Note: If P_w cannot be taken because of manner of completion or condition of well, then P_w must be calculated by adding the pressure drop due to friction within the flow string to P_t .

COMPANY Continental Oil Co.
 WELL SEMU-Dumont No.67
 LOCATION K Sec. 24-20S-37E
 COUNTY Lea
 DATE 1-27-61

CODING BOOK COMPANY, INC. NORWOOD, MASSACHUSETTS.
 PRINTED IN U.S.A.

NO. 31.281 LOGARITHMIC 8 BY 10 3/4 INCH CYCLES, CASE SHORT WAY.
 $p_c - p_2$ (thousands)



MCFD - 15.025 psia.

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Esumont Formation Esumont County Lea

Initial Annual Special X Date of Test 1-20-61

Company Continental Oil Company Lease ESUMONT Well No. 69

Unit F Sec. 24 Twp. 20S Rge. 37E Purchaser E.P.N.G.

Casing 5 1/2 Wt. 14.0 I.D. 5.012 Set at 3949 Perf. To

Tubing 2 Wt. 4.7 I.D. 2.777 Set at 3475 Perf. To

Gas Pay: Frc. 3620 To 3747 L 3615 xG .674 -GL 2436 Bar.Press. 13.2

Producing Thru: Casing Tubing X Type Well Single

Date of Completion: 6-11-59 Packer None Single-Brudenhead-G. G. or G.O. Dual Reservoir Temp. 80

OBSERVED DATA

Tested Through (Prover) (Choke) (Meter) Type Taps Flange

No.	Flow Data					Tubing Data		Casing Data		Direction of Flow Hr.
	(Line) Size	(Orifice) Size	Press. psig	Diff. h _w	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI						533		533		72
1.	4	.750	200	8.41	85	496		529		24
2.	4	.750	220	15.32	94	496		518		24
3.	4	.750	257	24.01	72	496		492		24
4.	4	.750	235	54.02	69	419		453		24
5.										

FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_w P_c}$	Pressure psia	Flow Temp. Factor Ft	Gravity Factor F _g	Compress. Factor F _{pv}	Rate of Flow Q-MCFPD @ 15.025 psia
1.	3.435	42.94	219.2	.9768	.9435	1.029	136.5
2.	3.435	57.73	233.2	.9688	.9435	1.029	178.4
3.	3.435	88.54	270.2	.9887	.9435	1.026	266.7
4.	3.435	115.79	248.2	.9915	.9435	1.025	301.3
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio cf/bbl.

Gravity of Liquid Hydrocarbons 9.936 deg.

$P_c (1-e^{-S})$ 0.152

Specific Gravity Separator Gas

Specific Gravity Flowing Fluid

P_c 566.2 P_c 320.6

No.	P_w (psia)	P_c^2	$F_c Q$	$(F_c Q)^2$	$(F_c Q)^2 (1-e^{-S})$	P_w^2	$P_c^2 - P_w^2$	Cal. P_w	$\frac{P_w}{P_c}$
1.	509.2					259.2	26.6		.90
2.	449.2					201.8	38.4		.79
3.	449.2		MEASURED			201.8	65.4		.79
4.	432.2					217.3	113.3		.76
5.									

Absolute Potential: 900 MCFPD; n .76

COMPANY Continental Oil Company

ADDRESS Box 427, Hobbs, New Mexico

AGENT and TITLE M. D. Howard, Test Engineer

WITNESSED J. B. Murray

COMPANY El Paso Natural Gas Company

REMARKS

INSTRUCTIONS

This form is to be used for reporting multi-point back pressure tests on gas wells in the State, except those on which special orders are applicable. Three copies of this form and the back pressure curve shall be filed with the Commission at Box 871, Santa Fe.

The log log paper used for plotting the back pressure curve shall be of at least three inch cycles.

NOMENCLATURE

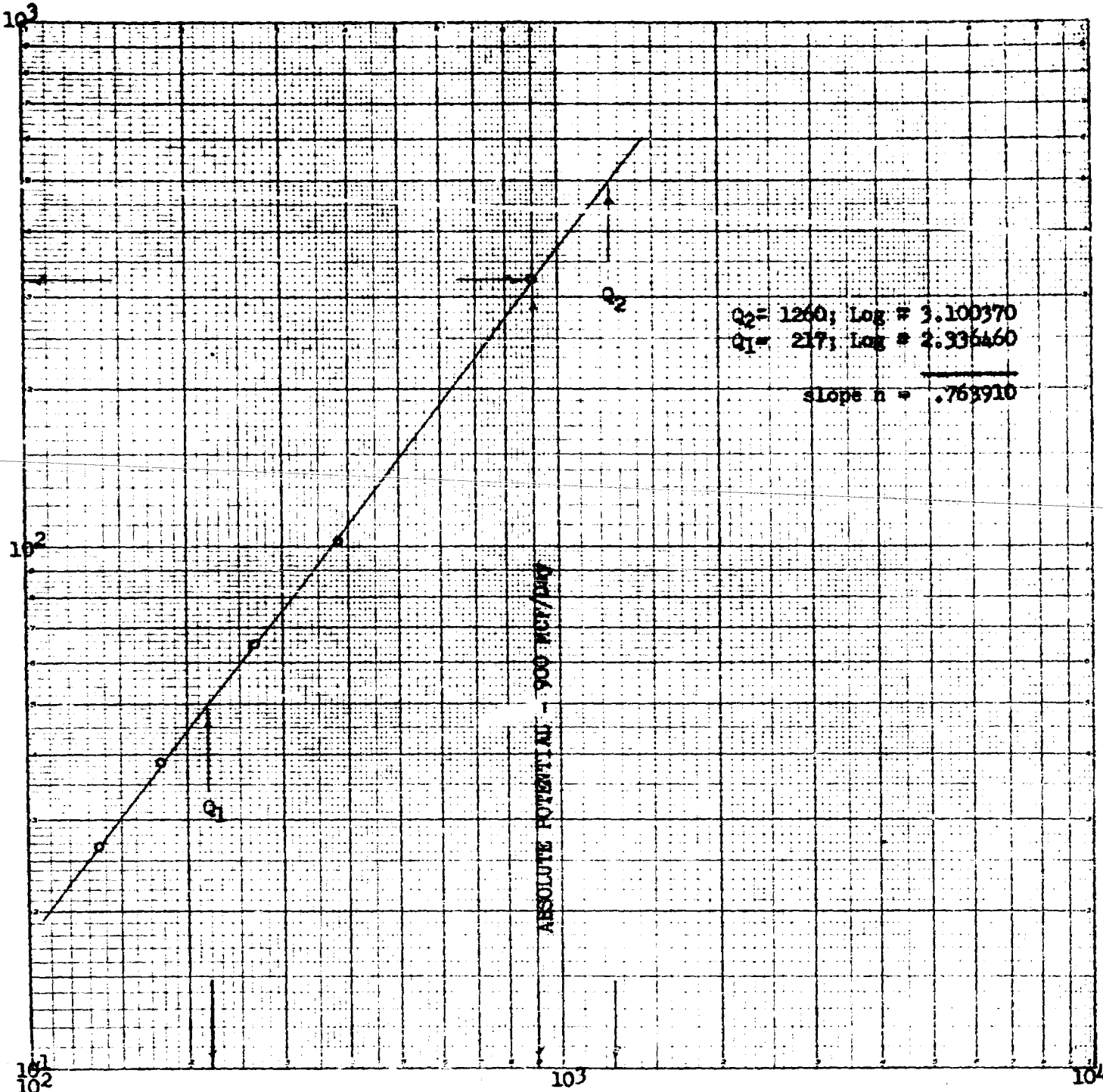
- Q = Actual rate of flow at end of flow period at W. H. working pressure (P_w).
MCF/da. @ 15.025 psia and 60° F.
- P_c = 72 hour wellhead shut-in casing (or tubing) pressure whichever is greater.
psia
- P_w = Static wellhead working pressure as determined at the end of flow period.
(Casing if flowing thru tubing, tubing if flowing thru casing.) psia
- P_t = Flowing wellhead pressure (tubing if flowing through tubing, casing if flowing through casing.) psia
- P_f = Meter pressure, psia.
- h_w = Differential meter pressure, inches water.
- F_g = Gravity correction factor.
- F_t = Flowing temperature correction factor.
- F_{pv} = Supercompressibility factor.
- n = Slope of back pressure curve.

Note: If P_w cannot be taken because of manner of completion or condition of well, then P_w must be calculated by adding the pressure drop due to friction within the flow string to P_t .

COMPANY Continental Oil Co.
 WELL SINU-Bumont No.69
 LOCATION F Sec. 24-20S-37E
 COUNTY Lea
 DATE 1-20-61

NO. 31.291 LOGARITHMIC: 2 BY 2 3/4 INCH CYCLES (CASE SHORT WAY)
 CODEX BOOK COMPANY, INC. NORWOOD, MASSACHUSETTS. PHILADELPHIA, PA.

$p_c^2 - p_w^2$ (thousands)



MCFD - 15.025 psia.

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
MAY 4, 1961

EXAMINER HEARING

DEARNLEY-MEIER REPORTING SERVICE, Inc.

PHONE CH 3-6691

ALBUQUERQUE, NEW MEXICO

IN THE MATTER OF:

CASE 2261 Application of Continental Oil Company for two :
non-standard gas proration units. Applicant, :
in the above-styled cause, seeks the establish- :
ment of a 480-acre non-standard gas proration :
unit in the Eumont Gas Pool consisting of the :
S/2 and the NE/4 of Section 24, Township 20 :
South, Range 37 East, Lea County, New Mexico. :
Said unit is to be dedicated to the SEMU Eumont :
Well No. 67, located 1980 feet from the South :
and West lines of said Section 24. :

Applicant further seeks the establishment of a :
480-acre non-standard gas proration unit in the :
Eumont Gas Pool consisting of the NW/4 of Sec- :
tion 24, and the SE/4, the SW/4 NE/4, the S/2 :
SW/4 and the NW/4 SW/4 of Section 13, all in :
Township 20 South, Range 37 East, Lea County, :
New Mexico. Said unit is to be dedicated to :
the SEMU Eumont Well No. 69; located 1980 feet :
from the North and West lines of said Section :
24. :

BEFORE:

Daniel S. Nutter, 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: We will call next Case 2261.

MR. MORRIS: Application of Continental Oil Company for
two non-standard gas proration units.



MR. KELLAHIN: Jason Kellahin, Kellahin & Fox, Santa Fe, representing the applicant, and we will have one witness we would like to have sworn.

(Witness sworn)

RONALD McWILLIAMS,

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

A Ronald McWilliams.

Q By whom are you employed and in what position?

A I am employed by Continental Oil Company in Hobbs, New Mexico as district engineer.

Q Have you testified before the Oil Commission as a petroleum engineer and had your qualifications made a matter of record?

A Yes, I have.

MR. KELLAHIN: Are the witness' qualifications acceptable?

MR. NUTTER: Yes, sir. Please proceed.

Q (By Mr. Kellahin) Are you familiar with the application of Continental Oil Company in Case 2261?

A Yes, sir.

Q Would you state briefly what is proposed in this applica-

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tion?

A Section 24, 20, 37, Lea County, New Mexico is presently a standard 640-acre gas proration unit in the Eumont Gas Pool, and it is assigned jointly to our Wells, SEMU Eumont 67 and 69. We also have a non standard gas proration unit in the south half of the southeast quarter of Section 13, which is assigned to our SEMU Permian No. 41 Well.

Q Do you have a plat showing that area, Mr. McWilliams?

A Yes, sir.

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

Q Referring to what has been marked as Exhibit No. 1, will you discuss the information shown on that Exhibit?

A Exhibit No. 1 shows the proration units that now exist out there. In Section 24, the dotted green line shows you the present standard proration unit jointly assigned to our SEMU Eumont 67 and 69 Wells. The dotted brown line shows the proration unit now presently assigned to the SEMU Permian No. 41 Well.

We would like to reassign this acreage in the manner shown on the plat. We would like to assign the east half and the southwest quarter of Section 24, to our SEMU Eumont No. 67 Well, and on our SEMU Eumont 69 we would like to assign the south or the northwest quarter, and the acreage shown in Section 13 outline on our plat. We would like to have the present proration units cancelled.

Q What would you do, then, with your Well No. 41 in Section

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13?

A We plan to abandon No. 41 in the Eumont Pool.

Q Is that well capable of producing gas?

A Yes, sir, it is, but not in commercial quantities.

Q In your opinion, is all of the acreage you propose to dedicate in the two units productive of gas?

A Yes, sir, I think it is.

Q Will the No. 67 Well produce an allowable in excess of the allowable to be assigned to a 480-acre unit?

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

A Yes, sir. I have here a copy of the back pressure tests on SEMU Eumont 67 Well. From this test the accumulated deliverability at 210 pounds per square inch is 1280 MCF a day from this well. The average 1960 Eumont gas allowable for 480 acres MSP during 1960 was 699 MCF a day, so I believe the well is capable of supporting a 480-acre unit.

Q How about the ability of the SEMU Eumont No. 69 Well?

A I also have a back pressure test taken on the SEMU Eumont 69.

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

Q That is marked as Exhibit No. 3?

A No. 3.

Q From the information on this test, the deliverability at

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250 PSI is 750 MCF a day. Again, the Eumont gas allowable during 1960 for a 480-acre unit averaged 690 MCF a day, so the well is capable of producing in excess of the allowable for the proration unit size we're requesting.

Q Mr. McWilliams, in order to avoid the type of unit you are proposing to dedicate to your Well No. 67, would it be possible to complete one of the wells in Section 13 as a dual completion for Eumont gas production?

A Yes, sir, it would.

Q What is your reason for doing that?

A Well, we have instigated a water flood in the Skaggs Pool, and, of course, the wells in Section 13 are presently completed in the Skaggs Pool, and present somewhat of a mechanical problem when the flood is expanded up into that area if the wells are dually completed.

Q Your Exhibit No. 1, in addition to the other information, does show the offsetting units, does it not?

A Yes, sir.

Q In your opinion, would the granting of this application be in the interest of preventing waste and the protection of correlative rights?

A Yes, sir.

Q Would it result in the recovery of gas which would not otherwise be recovered?

A Yes, sir.

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Q Were Exhibits 1, 2 and 3 prepared by you or under your supervision?

A Yes, sir.

MR. KELLAHIN: We would like to offer in evidence Exhibits 1, 2 and 3.

MR. NUTTER: Continental's Exhibits 1 through 3 will be admitted in evidence.

(Whereupon, Continental's Exhibits 1 through 3 were received in evidence)

MR. KELLAHIN: If the Commission please, that completes our testimony in regard to this. I am sure the Commission will have some questions as to the dedication of the acreage of some of the wells in addition to the two that have been mentioned. I would like to point out that all the wells in Section 24, presently dedicated for production, the gas unit being the entire section at the present time, and the oil wells in the area, each having a 40-acre unit dedicated to them, so there is no change in that section. There will be some changes in Section 13. I'm sure the Commission will want some information on that.

MR. NUTTER: Does anyone have any questions of Mr. Mc Williams?

MR. MORRIS: Yes, sir, I do.

MR. NUTTER: Mr. Morris.

CROSS-EXAMINATION

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BY MR. MORRIS:

Q Mr. McWilliams, now, at this time, is the acreage dedicated to your Well No. 41 in Section 13, as outlined here in brown?

A Yes, sir.

Q And yet that is classified, now, as a gas well, is that correct, or is that an oil well?

A It is a gas well. However, it is not connected. Although it has a proration unit, we have never produced it. It doesn't have substantial deliverability to go into El Paso's line.

Q You have never sought more than an 80-acre unit for that particular well?

A At one time the No. 41 had a proration unit which also comprised the south half of the southwest quarter, and the northwest quarter of the southwest quarter, that 120 acres over there, but we've reduced that acreage previously.

Q No attempt was made to dedicate the north half of the southeast quarter or the southwest quarter of the northeast quarter of 13 to your Well No. 41?

A I'm not sure. I don't think that there has been. However, I can't definitely state.

Q Do you feel that that 120 acres that I mentioned at the last there is productive of gas in the Eumont?

A Yes, I think that it is.

Q On what do you justify that opinion?

A Well, there's not much structural relief in this area,

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and, so, therefore, since the 41 is definitely gas productive, although it is not capable of producing it at a commercial rate, I see no reason not to believe that this acreage to the north is gas productive.

Q Do you feel that your Well No. 69 will drain a proration unit of this unusual size where, for instance, up here in the southwest of the northeast of the 13, do you feel that your Well No. 69 is going to have any effect on draining that acreage, or, in fact, any of that 120 acres that we have been talking about?

A Well, the Commission has already established that a 640-acre unit in the Eumont Pool will or is sufficient to drain or is the standard proration unit, so, evidently, they feel that one well can efficiently drain 640 acres. Now, you will notice that there are no offsetting gas units to this acreage, and gas is a mobile fluid, and it will flow in the direction where you have a pressure differential, so I would presume that although it might take some time, that gas up there could be recovered by these wells.

Q The acreage to the north of the unit that we're considering here in Sections 13 and 24, shown to be owned by Texaco, is that embraced in a unit, has that been dedicated to any well up there?

A No, sir, not in Section 13, although I understand informally that Texaco is planning to dually complete one of their wells in Section 13.



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Q As a Eumont gas --

A As a Eumont gas well.

Q Do you know which well that might be?

A Well, this is hearsay, but I understand it's their Well No. 5, the one that they were looking at. I guess it would be their Kershaw 5.

Q Mr. McWilliams, has any attempt been made to communitize with Texaco to form a standard 640-acre unit in Section 13?

A No, sir.

Q No attempt has been made?

A No.

MR. MORRIS: I have no further questions.

MR. NUTTER: Any other questions of Mr. McWilliams?

BY MR. NUTTER:

Q Mr. McWilliams, these oil wells which are shown in the east half of Section 24 are completed in what pool?

A They're completed in the Skaggs Pool.

Q And the oil wells in the Continental acreage in the east half of Section 13 are completed in what pool?

A They are also completed in the Skaggs Pool.

Q And the oil wells in the southwest quarter of Section 13?

A Skaggs Pool.

Q Are any of these wells open in the interval, which is within the vertical limits of the Eumont gas Pool?



A Yes, sir, they are. However, I would like to point out one or two things along that line. In the first place, most of these wells were drilled prior to September 1954, which is when the Eumont Pool was established by the Commission. Now, at the time also that these wells were drilled, it was our policy to set casing above the pay, and then to drill into the Skaggs pay with oil as a circulating medium. In the SEMU Permian No. 14, which was the discovery well of the Skaggs Pool, we took several drill stem tests as we drilled this well, and we found that the top part of the Penrose to be gas productive, and the base of the Penrose proved dry. All we recovered on drill stem test through that interval was drilling fluid. To further support the fact that the lower Penrose is not productive, even though it is open, the initial completion on our SEMU Permian 37, which is the direct offset to our SEMU Eumont 67 gas well, it has gas-oil ratio too small to measure. So, I don't think that although the Penrose is open, I doubt that it is productive.

Q What zones are the Nos. 67 and 69 producing from?

A They are completed in the Penrose. I think that the 67 is perforated in the lower Penrose, although I am not so sure that it's producing from there. It's generally our policy when we do complete a well to shoot everything that might be possibly pay because perforations are cheap, and although it may be perforated there, it doesn't necessarily mean it's producing from there.

Q Well, you wouldn't perforate a zone that was not produc-

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tive, would you, intentionally?

A If we had information to the contrary, no, we wouldn't, but if it's doubtful, then we might possibly go ahead and perform it.

Q Now, the Well No. 41 never has produced, is this correct, although you have had the 80 acres dedicated to it?

A Yes, that's right. El Paso's line pressure in that area at the time the 41 was completed, was around 600 pounds, and the well did not have sufficient deliverability to produce any appreciable amount of gas at that pressure, so it was never connected.

Q What kind of a gas-oil ratio did that well have when it was originally completed?

A As a Eumont gas well?

Q The No. 41, yes, sir.

Q It never did make oil except the frac oil. I think that it had a calculated open flow potential somewhere around 300 MCF a day on initial completion.

Q But it didn't produce liquids?

A No. It might have produced frac oil some, but it doesn't produce liquids, to my knowledge.

Q Now, these wells which are on your acreage in the east half of Sections 13 and 24, and are classified as Skaggs Wells, are all of these wells open in the Penrose sand?

A All of them are open and have at least a portion of the lower Penrose open. However, again, I would like to say that al-

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though it's open, I don't consider it to be productive. At one time we were considering additional gas development in this area. As you know, this is Federal acreage, and the Government presses for development of all possible acreage, so we were looking for gas development in Section 19. Now, we made a study at that time; I would like to show you here.

MR. KELLAHIN: Do you want to mark that an Exhibit?

A I could offer it as an Exhibit.

MR. KELLAHIN: Would you like to have this marked as an Exhibit?

MR. NUTTER: It depends on what it is.

MR. KELLAHIN: It's a structural plat of the area.

A This is a sample log taken on wells shown on that plat, and you will note that the Penrose, as you go to the east, becomes progressively shaly and anhydritic. I think there's a permeability and porosity pinchout occurring at about the area shown on the map.

MR. MORRIS: Could we have this marked as an Exhibit at this time?

(Whereupon, Continental's Exhibit No. 4 was marked for identification)

Q (By Mr. Nutter) That is a contour map on the top of the Queen, is that correct?

A Yes, sir.

Q And you have contoured the top of the Yates on Exhibit No. 1, is that correct?

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A Yes.

Q And it's your testimony that the Queen sand pinches out along the dark line that runs north-south across Exhibit 4?

A The Penrose member of the Queen sand.

Q Are there any gas wells located in this general vicinity which are east of the mid line of Sections 13 and 24, with the exception of your No. 41?

A Not in the immediate area.

Q Are there any gas units to the east of the north-south mid line of Sections 13 and 24; gas proration units?

A Not in the immediate area. However, as you go south, the pool swings and does continue to the east.

MR. NUTTER: Are there any further questions of Mr. Mc Williams? He may be excused.

(Witness excused)

MR. KELLAHIN: Do you want the sample log as an Exhibit, too, Mr. Nutter?

MR. NUTTER: I don't think I need this one, Mr. Kellahin.

REDIRECT EXAMINATION

BY MR. KELLAHIN:

Q Mr. McWilliams, was Exhibit No. 4 prepared by you or under your supervision?

A No, sir.

Q Have you examined the information contained on Exhibit No. 4?



A Yes, sir.

Q In your opinion, does it accurately reflect the information depicted thereon?

A Yes, sir.

MR. KELLAHIN: At this time we would like to offer in evidence Exhibit No. 4.

MR. NUTTER: Is this a map that was prepared by geologists of Continental Oil Company, or who was it prepared by?

A I believe it was prepared by an engineer in our Roswell office.

MR. NUTTER: In the employ of Continental, though?

A Yes, sir.

MR. NUTTER: Exhibit No. 4 will be admitted in evidence.

(Whereupon, Continental's Exhibit No. 4 was received in evidence)

MR. NUTTER: Do you have anything further, Mr. Kellahin?

MR. KELLAHIN: That's all I have.

MR. NUTTER: Does anyone have anything they wish to offer in Case 2261? We will take the case under advisement.

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ALBUQUERQUE, NEW MEXICO



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 5th day of May, 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. 2261 heard by me on 5-4, 1961.

[Signature], Examiner
New Mexico Oil Conservation Commission

DEARNLEY-MEIER REPORTING SERVICE, Inc.

PHONE CH 3-4611

ALBUQUERQUE, NEW MEXICO

