

CASE 2012: Application
for triple completion
RAYNES APACHE TRILL NO.

Case No.

2019

Application, Transcript,
and Exhibits, Etc.

W A I V E R

Conservation Commission
Mabry Hall
State Capitol
Santa Fe, New Mexico

Re: Case No. 2019

Dear Sir:

Skelly Oil Company consents to the correction of Continental's application for triple completion on its Northeast Haynes Well Apache 9-1 set down as Case No. 2019.

Skelly Oil Company hereby waives notice for the corrected application of Continental Oil Company.

MAIN OFFICE OCC

1960 AUG 1 AM 11:12

SKELLY OIL COMPANY

By

Ray W. Lelinger
7/29/60
(Title)

NEW MEXICO OIL CONSERVATION COMMISSION

SANTA FE, NEW MEXICO

File Case
2019 7-3-58

CORRECTED APPLICATION FOR DUAL COMPLETION

Field Name <u>West Lindrith</u>		County <u>Rio Arriba</u>	Date <u>7/5/60</u>
Operator <u>Continental Oil Company</u>		Lease <u>Northeast Haynes Anahe</u>	Well No. <u>9-1</u>
Location of Well	Unit <u>30</u>	Section <u>9</u>	Township <u>24 North</u>
			Range <u>5 West</u>

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 XXXXXXXX	Lower Zone XXXXXXXX	Deepest Zone XXXXXXXX
a. Name of reservoir	Mesa Verde	Gallup	Dakota
b. Top and Bottom of Pay Section (Perforations)	3910 to 4700 (proposed)	5655 to 6250 (proposed)	6690 to 6990 (proposed)
c. Type of production (Oil or Gas)	Gas	Gas	Gas
d. Method of Production (Flowing or Artificial Lift)	Flowing	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.
- _____ 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.*
- _____ 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.

1. Gulf Oil Company - P. O. Box 1589 - Durango, Colorado
2. Southern Union Oil Company - Burt Building - Dallas, Texas
3. Skelly Oil Company - P. O. Box 4083-Station A - Albuquerque, New Mexico
4. El Paso Natural Gas Products Co. - P. O. Box 977 - Farmington, New Mexico

6. Were all operators listed in Item 5 above notified and furnished a copy of this application? YES X NO ____ . If answer is yes, give date of such notification July 5, 1960

CERTIFICATE: I, the undersigned, state that I am the attorney of the Continental Oil Company (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.

William M. Griffith
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 perforation unit in either or both of the producing zones, then separate application for approval of the same should be filed simultaneously with this application.

W A I V E R

Conservation Commission
Mabry Hall
State Capitol
Santa Fe, New Mexico

Re: Case No. 2019

Dear Sir:

Southern Union Oil Company consents to the correction of Continental's application for triple completion on its Northeast Haynes Well Apache 9-1 set down as Case No. 2019.

Southern Union Oil Company hereby waives notice for the corrected application of Continental Oil Company.

SOUTHERN UNION OIL COMPANY

By

Q. W. Wadsworth
President
(Title)

MAN OCEAN OGC
1960 JUL 27 AM 8:43

NEW MEXICO OIL CONSERVATION COMMISSION

SANTA FE, NEW MEXICO

TRIPLE

7-3-58

APPLICATION FOR DUAL COMPLETION

Field Name West Lindrith County Rio Arriba Date 7/5/60

Operator Continental Oil Company Lease Northeast Haynes Apache Well No. 9-1

Location of Well Unit 9 Section 24 North Township 5 West

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 XXXXXX	Lower Zone	Deepest Zone XXXXXX <u>Dakota</u>
a. Name of reservoir	<u>Mesa Verde</u>	<u>Gallup</u>	<u>Croomhorn</u>
b. Top and Bottom of Pay Section (Perforations)	<u>3910 to 4700 (proposed)</u>	<u>5655 to 6250 (proposed)</u>	<u>6590 to 6650 (proposed)</u>
c. Type of production (Oil or Gas)	<u>Gas</u>	<u>Gas</u>	<u>Gas</u>
d. Method of Production (Flowing or Artificial Lift)	<u>Flowing</u>	<u>Flowing</u>	<u>Flowing</u>

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.
- _____ 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.*
- _____ 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.

1. Gulf Oil Company - P. O. Box 1589 - Durango, Colorado
2. Southern Union Oil Company - Burt Building - Dallas, Texas
3. Skelly Oil Company - P. O. Box 4083-Station A - Albuquerque, New Mexico
4. El Paso Natural Gas Products Co. - P. O. Box 977 - Farmington, New Mexico

6. Were all operators listed in Item 5 above notified and furnished a copy of this application? YES X NO ____ . If answer is yes, give date of such notification July 5, 1960

CERTIFICATE: I, the undersigned, state that I am the attorney of the Continental Oil Company (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.

William M. Griffith
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 perforation unit in either or both of the producing zones, then separate application for approval of the same should be filed simultaneously with this application.

ADDITIONAL DATA FOR TRIPLE COMPLETION

This well will be located in the C NW SW Section 9, T24N, R5W, Rio Arriba County, New Mexico. The well will produce gas from the Mesa Verde, Gallup, and Greenhorn formations. Attached is a sketch of the proposed completion. Basically, the program will consist of the following:

1. Drill a 16" hole to 200'.
2. Run 200' of 13 3/8" surface pipe and cement to surface.
3. Drill a 12" hole to the base of the Gallup formation or approximately 6000'.
4. Drill a 7" hole from the base of the Gallup to TD at the base of Dakota formation.
5. Run and hang 4 1/2" OD casing to the base of the Dakota.
6. Run and hang 2 7/8" OD casing to the base of the Mesa Verde.
7. Run and hang 4 1/2" OD casing to the base of the Gallup.
8. Cement the Dakota formation through a cement shoe on the Dakota string.
9. Cement the Gallup formation through a cement shoe on the Gallup string.
10. Cement the Mesa Verde formation through a stage collar in the Dakota string of 4 1/2" OD casing.
11. Cement the Pictured Cliffs formation through a stage collar in the Gallup string of 4 1/2" OD casing.
12. Perforate each productive zone (Dakota, Gallup and Mesa Verde) separately utilizing a gun which can be oriented to perforate only one string at a time.
13. Selectively sand-oil treat each producing zone and complete each string for production through a casing head which will prevent commingling of the hydrocarbons.

Mesa Verde

Transgressive-regressive deposits consisting of sandstone, shales, silts, and coals. The sands are fine-grained, well sorted and interbedded with the shales and silts. The common source of supply for the Mesa Verde sands is based upon environment of deposition. The productive zones in the Mesa Verde may or may not have a common source of supply with respect to each other.

This point depends entirely upon the deposition. In any case the supply source or sources are separate from those of the Dakota, Greenhorn, and Gallup. In the case of the Mesa Verde, we will probably have to segregate it as the source of supply after the well is drilled.

Gallup

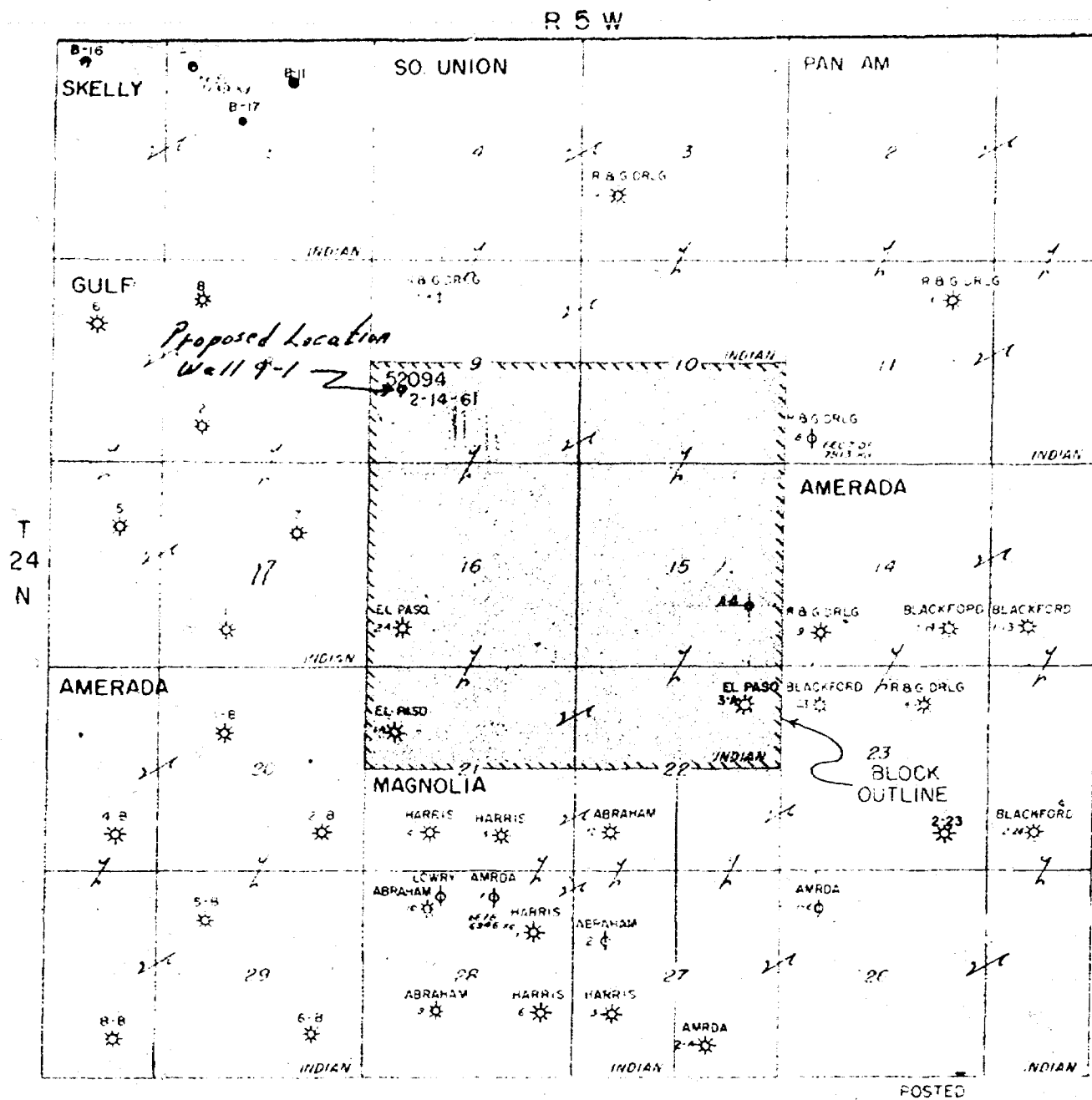
A sequence of fine-grained beach sands interbedded in a matrix of fractured marine shales and siltstones. This formation is considered to have a common source of supply separate from that of the formations immediately above and below. The marine shales are considered the source beds and this formation is bounded above and below by impermeable shale.

Greenhorn

A series of interbedded fractured marine limestone and limey shale. This formation is considered as having a common source of supply separate from that of the Dakota, due to its environment of deposition.

We believe this proposed type of completion is necessary to economically develop the Northeast Haynes Apache lease. This type of completion will prevent waste of the resources of the State of New Mexico by the use of proper production practices. It will also protect the correlative rights of everyone concerned by providing separate production facilities for each of the three producing formations which will prevent the commingling of the hydrocarbons.

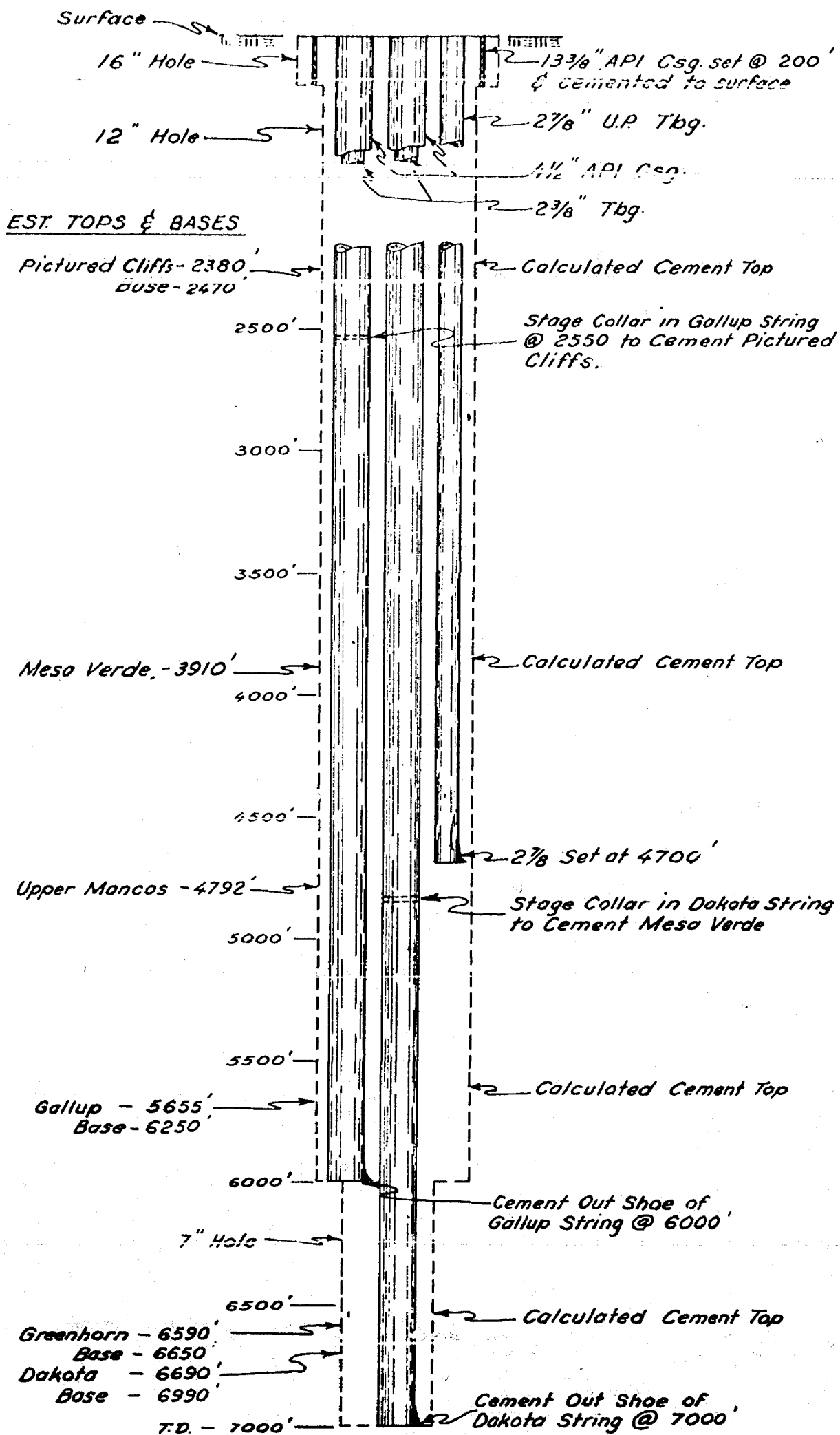
Case 2019



Note: Shallow Gas rights farmed out to
El Paso Natural Gas Company
under Contract No. 8879
Entire block within K.G.S.

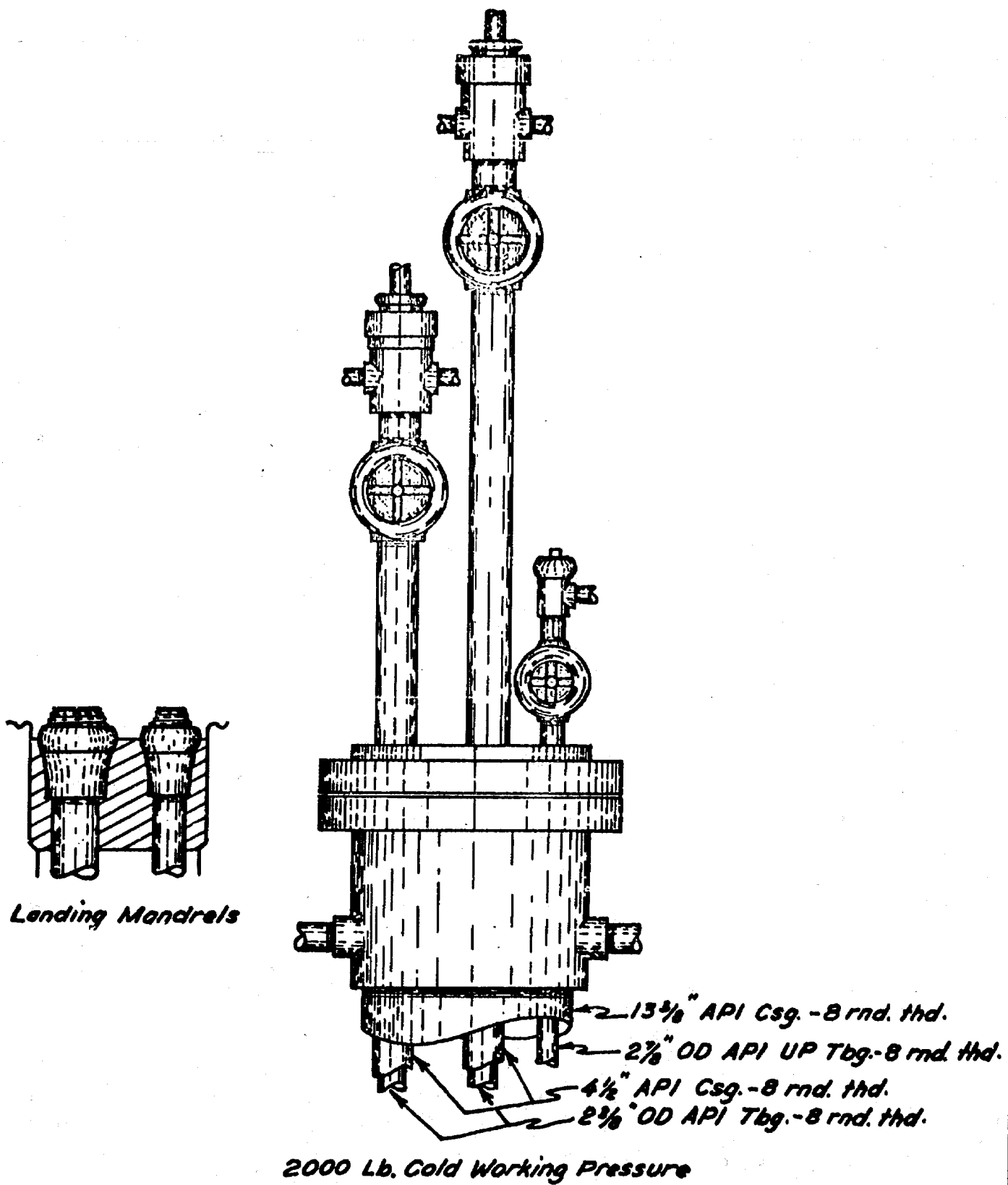
NORTHEAST HAYNES BLOCK NO. 206
RIO ARRIBA CO., N. MEX.

June 20/9



CONTINENTAL OIL COMPANY
 PROPOSED CASING AND CEMENTING PROGRAM
 FOR TRIPLE COMPLETING A WELL
 NORTHEAST HAYNES - APACHE No. 9-1

NOT TO SCALE



CONTINENTAL OIL COMPANY

WELLHEAD ASSEMBLY
TRIPLE CASING COMPLETION

NOT TO SCALE

PLANT OFFICE OCC
180 JUL 13 AM 10 45

W A I V E R

Case file

←

Conservation Commission
Mabry Hall
State Capitol
Santa Fe, New Mexico

Re: Case No. 2019

Dear Sir:

Gulf Oil Company consents to the correction of Continental's application for triple completion on its Northeast Haynes Well Apache 9-1 set down as Case No. 2019.

Gulf Oil Company hereby waives notice for the corrected application of Continental Oil Company.

GULF OIL COMPANY

By

E W Brake

E W Brake

District Production Manager

(Title)

WEB

State of New Mexico
Oil Conservation Commission

P. O. BOX 871
SANTA FE

Mr. Jason Kellahin
P. O. Box 1713
Santa Fe, New Mexico

~~Continental Oil Co.~~

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

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

Carbon copy of order also sent to:

Hobbs OCC X
Artesia OCC
Aztec OCC X

Other _____

DOCKET: EXAMINER HEARING JULY 27, 1960

Oil Conservation Commission - 9 a.m., Mabry Hall, State Capitol, Santa Fe, N.M.

The following cases will be heard before Daniel S. Nutter, Examiner, or Oliver E. Payne, Attorney, as alternate Examiner:

CASE NOS. 2023 through 2033 will not be heard before 1 p.m. on July 27, 1960.

CASE NOS. 2034 through 2040 will not be heard before 9 a.m. on July 28, 1960.

CASE 2017: Application of Continental Oil Company for an order authorizing an automatic custody transfer system to handle the Maljamar Pool production from its Miller "BX" lease comprising in pertinent part the E/2 of Section 14, Township 17 South, Range 32 East, Lea County, New Mexico.

CASE 2018: Application of Continental Oil Company for an order authorizing the triple completion of its Jicarilla Apache Well No. 27-2, located in the NW/4 NW/4 of Section 27, Township 25 North, Range 4 West, Rio Arriba County, New Mexico, in such a manner as to permit the production of oil from the Gallup formation, the production of oil from the Greenhorn formation and the production of oil from the Dakota formation through parallel strings of 4½ inch, 2 7/8 inch, and 4½ inch casing cemented in a common well bore. Applicant proposes to install tubing to the Gallup and the Dakota formations.

CASE 2019: Application of Continental Oil Company for an order authorizing the triple completion of its Northeast Haynes Apache Well No. 9-1, located in the NW/4 SW/4 of Section 9, Township 24 North, Range 5 West, Rio Arriba County, New Mexico, in such a manner as to permit the production of gas from the Mesaverde formation, the production of gas from the Gallup formation and the production of gas from the Greenhorn formation through parallel strings of 2 7/8 inch, 4½-inch, and 4½-inch casing respectively, cemented in a common well bore. Applicant also proposes to install tubing in the latter two zones.

CASE 2020: Application of Amerada Petroleum Corporation for an order authorizing the triple completion of its Wimberly Well No. 13, located in Unit M, Section 24, Township 25 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of gas from the Langlie Mattix Pool, the disposal of salt water into the Grayburg and San Andres formations in the interval from 3500 feet to 4200 feet, and the production of oil from the Justis-Blinebry Pool by means of two parallel strings of 3½-inch casing cemented in a common well bore. Applicant would dispose of the salt water through one string of casing, produce the Blinebry oil through 1½-inch tubing set in the second string of casing, and produce Langlie Mattix gas through the annulus of the 1½-inch tubing and the second casing string.

CASE 2021: Application of Shell Oil Company for authority to recomplete its State BUA Well No. 2 (formerly its Bluitt Unit Well No. 2) at an unorthodox oil well location in the Pennsylvanian formation within one mile of the Bluitt Pennsylvanian Pool. Said well is located 1980 feet from the North line and 660 feet from the West line of Section 16, Township 8 South, Range 37 East, Roosevelt County, New Mexico.

CASE 2022: Application of Sinclair Oil & Gas Company for an order authorizing the dual completion of its Turner "B" SP Well No. 67, located in Unit L, Section 20, Township 17 South, Range 31 East, Eddy County, New Mexico, in such a manner as to permit the production of oil from the Grayburg-Jackson Pool and the production of oil from an undesignated Abo pool through parallel strings of 2-inch tubing.

The following cases will not be heard before 1 p.m. on July 27, 1960:

CASE 2023: Application of Honolulu Oil Corporation for an order authorizing it to institute a pressure maintenance project in the Horseshoe-Gallup Oil Pool by the injection of water into the Gallup formation through its Navajo Well No. 4, located in the SE/4 SE/4 of Section 5, Township 31 North, Range 17 West, San Juan County, New Mexico; applicant further seeks the adoption of special rules governing the operation of said project.

CASE 2024: Application of Humble Oil & Refining Company for an order authorizing it to institute a pressure maintenance project in the Horseshoe-Gallup Oil Pool by the injection of water into the Gallup formation through 29 wells located in Sections 3, 4, 9, 10, and 11, Township 31 North, Range 17 West, San Juan County, New Mexico; Applicant further seeks the adoption of special rules governing the operation of said project.

CASE 2025: Application of Socony Mobil Oil Company for permission to convert to water injection its Navajo "A" Well No. 9, located in NE/4 NW/4 of Section 14, Township 31 North, Range 17 West, Rio Arriba County, New Mexico, in conjunction with a proposed adjacent pressure maintenance project in the Horseshoe-Gallup Oil Pool.

CASE 2026: Application of The British American Oil Producing Company for an order authorizing the "slim-hole" completion of its Fullerton Well No. 7, located 1850 feet from the South and West lines of Section 11, Township 27 North, Range 11 West, Dakota Producing Interval, San Juan County, New Mexico, utilizing 2 7/8-inch tubing as casing.

- CASE 2027: Application of Hondo Oil & Gas Company for an amendment of Order No. R-1643 to provide an alternative to the fail-safe features required in the automatic custody transfer system authorized therein for the Hondo-Western-Yates State 647 lease, Empire-Abo Pool, Eddy County, New Mexico.
- CASE 2028: Application of Pan American Petroleum Corporation for an order authorizing it to commingle the production from the Empire-Abo Pool from all wells on eight separate leases in Sections 27 and 34, Township 17 South, Range 28 East, Eddy County, New Mexico. Applicant also seeks authorization of an automatic sustody transfer system to handle said commingled production.
- CASE 2029: Application of Pan American Petroleum Corporation for an amendment of Order R-1399 to permit the commingling of Empire-Abo Pool production from Federal Lease No. LC-064050-A, E/2 SE/4 of Section 34 and NW/4 SW/4 of Section 35, Township 17 South, Range 27 East, with the Empire-Abo Pool production from those leases for which commingling was approved by paragraph one of said order and to permit the commingling of Empire-Abo Pool production from Federal Lease No. NM-025602, NW/4 and N/2 SW/4 of Section 15, Township 18 South, Range 27 East with the Empire-Abo Pool production from those leases for which commingling was approved by paragraph two of said order. Applicant also seeks an amendment of Order No. R-1399-A to permit production from the above-described leases in Eddy County, to be handled by the automatic custody transfer systems authorized in said order.
- CASE 2030: Application of Pan American Petroleum Corporation for permission to commingle the Empire-Abo Pool production from eleven separate State leases in Townships 17 and 18 South, Range 28 East, Eddy County, New Mexico. Applicant further seeks permission to install automatic custody transfer facilities to handle said commingled production.
- CASE 2031: Application of Union Oil Company of California for approval of its South Caprock Queen Unit Agreement, which unit is to embrace 9526 acres in Townships 14 and 15 South, Ranges 30 and 31 East, Caprock Queen Pool, Chaves County, New Mexico.
- CASE 2032: Application of Union Oil Company of California for an order authorizing it to institute a waterflood project in the Caprock-Queen Pool on its proposed South Caprock Queen Unit by the injection of water into the Queen formation through ten wells located in Township 15 South, Range 31 East, Chaves County, New Mexico, and for authority to drill a water injection well at an unorthodox location, being 330 feet West of the East line and 1320 feet South of the North line of Section 18, Township 15 South, Range 31 East.

CASE 2033: Application of Cabeen Exploration Corporation for permission to complete its State 1-K Well located 1980 feet from the South and West lines of Section 11, Township 10 South, Range 32 East, in an undesignated Permo-Pennsylvanian pool in Lea County, New Mexico as a "slim-hole" completion, using 2-7/8 inch casing.

The following cases will not be heard before 9 a.m. on July 28, 1960

CASE 2034: Application of Gulf Oil Corporation for an order authorizing the dual completion of its J. N. Carson Well No. 6, located 330 feet from the South line and 965 feet from the East line of Section 28, Township 21 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Penrose-Skelly Pool and the production of gas from the Blinebry Gas Pool through parallel strings of 2 3/8-inch tubing.

CASE 2035: Application of Gulf Oil Corporation for an order authorizing the dual completion of its W. T. McCormack Well No. 12, located 554 feet from the North line and 1874 feet from the East line of Section 32, Township 21 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Drinkard Pool and the production of oil from the Wantz-Abo Pool through parallel strings of 2 3/8-inch tubing.

CASE 2036: Application of Charles Loveless, Jr., for the establishment of a 280-acre non-standard gas unit in the Atoka-Pennsylvanian Gas Pool consisting of the NE/4, N/2 NW/4 and SW/4 NW/4 of Section 21, Township 13 South, Range 26 East, Eddy County, New Mexico. Applicant proposes that said unit be dedicated to the Brunner No. 1 Dayton Townsite Well to be located on an unorthodox location at a point 1650 feet from the North line and 2310 feet from the East line of said Section 21.

CASE 2037: Application of Sun Oil Company for the creation of a new oil pool for Wolfcamp production to be designated as the Jenkins-Wolfcamp pool and to consist of Sections 2, 3, 4, 8, 9, 10 and 11 of Township 9 South, Range 34 East, Lea County, and Sections 34 and 35, Township 8 South, Range 34 East, Roosevelt County, New Mexico. Applicant further seeks the promulgation of special rules and regulations for said pool including a provision for 80-acre drilling and proration units.

CASE 2038: Application of Benson-Montin-Greer Drilling Corporation for an order authorizing the dual completion of the Jones Well No. 1, located in Unit P, Section 17, Township 28 North, Range 13 West, San Juan County, New Mexico, in such a manner as to permit the production of oil from an undesignated Gallup Pool and the production of gas from the West Kutz-Dakota Pool through parallel strings of 1 1/2-inch OD tubing.

-5-

Docket No. 21-60

CASE 2039: Application of Southwest Production Company for approval of an unorthodox oil well location in the Gallegos-Gallup Oil Pool for its Rummel Federal Well No. 1, located 790 feet from the North line and 1190 feet from the West line of Section 36, Township 27 North, Range 12 West, San Juan County, New Mexico.

CASE 2040: Application of Neville G. Penrose, Inc., for an order authorizing the dual completion of its Grizzel Well No. 1, located in Unit G, Section 5, Township 22 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of gas from the Tubb Gas Pool and the production of oil from the Drinkard Pool through the casing-tubing annulus and 2 3/8-inch tubing respectively.

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date July 28, 1960

CASE 2018

Hearing Date DSN Santa Fe 9a.M. 7/27

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

Approve triple completion as requested by Continental for its
Jicarilla Apache Well No. 27-2, Production to be of hydrocarbon
from the Gallup-Greenhorn and Dakota formations.

Staff Member

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. 2019
Order No. R-1735

APPLICATION OF CONTINENTAL OIL
COMPANY FOR A TRIPLE COMPLETION
IN THE MESAVERDE FORMATION, THE
GALLUP FORMATION, AND THE DAKOTA
FORMATION, RIO ARriba COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on July 27, 1960, 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 4th day of August, 1960, 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, is the owner and operator of the Northeast Haynes 9 Well No. 9-1, located in the NW/4 SW/4 of Section 9, Township 24 North, Range 5 West, BPPM, Rio Arriba County, New Mexico.
- (3) That the applicant proposes to triple complete the said Northeast Haynes 9 Well No. 9-1 in such a manner as to permit the production of hydrocarbons from the Mesaverde formation, the production of hydrocarbons from the Gallup formation, and the production of hydrocarbons from the Dakota formation through parallel strings of 2-7/8 inch, 4-1/2 inch, and 4-1/2 inch casing, respectively, cemented in a common well-bore. Further that the applicant proposes to install 2-3/8 inch tubing in each of the aforementioned 4-1/2 inch casing strings.
- (4) That the mechanics of the proposed triple completion are feasible and are in accord with good conservation practices.

-2-

CASE No. 2019
Order No. R-1735

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

IT IS THEREFORE ORDERED:

That the applicant, Continental Oil Company, be and the same is hereby authorized to triple complete its Northeast Haynes 9 Well No. 9-1, located in the NW/4 SW/4 of Section 9, Township 24 North, Range 5 West, NMPM, Rio Arriba County, New Mexico, in such a manner as to permit the production of hydrocarbons from the Mesaverde formation, the production of hydrocarbons from the Gallup formation, and the production of hydrocarbons from the Dakota formation through parallel strings of 2-7/8 inch, 4-1/2 inch, and 4-1/2 inch casing, respectively, cemented in a common well-bore.

PROVIDED HOWEVER, That applicant shall ensure that cement behind the casing shall come to at least 200 feet above the top of the Pictured Cliffs formation from a stage collar to be set at approximately 2550 feet, and also that cement shall be brought to at least 200 feet above the tops of the Mesaverde, the Gallup, and the Greenhorn formations. Provided further, that casing centralizers or turbolizers shall be installed throughout the cemented intervals of the three producing formations and on the first three joints of casing above the top of each.

PROVIDED FURTHER, That applicant shall install tubing for the production of hydrocarbons from both the Gallup formation and the Dakota formation.

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

PROVIDED FURTHER, That the applicant shall take communication tests upon completion and annually thereafter, or at such times as the Secretary-Director may prescribe.

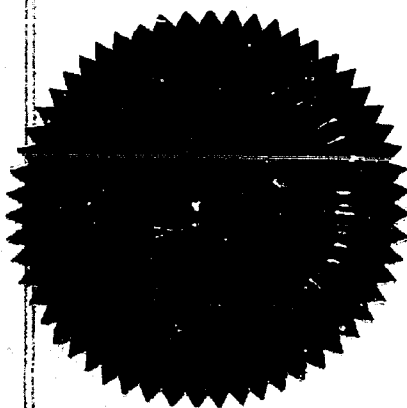
IT IS FURTHER ORDERED:

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 the 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 dual zone or regular single-zone production in the interest of conservation.

-3-
CASE No. 2019
Order No. R-1735

DONE at Santa Fe, New Mexico, on the day and year herein-
above designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


John Burroughs
JOHN BURROUGHS, Chairman

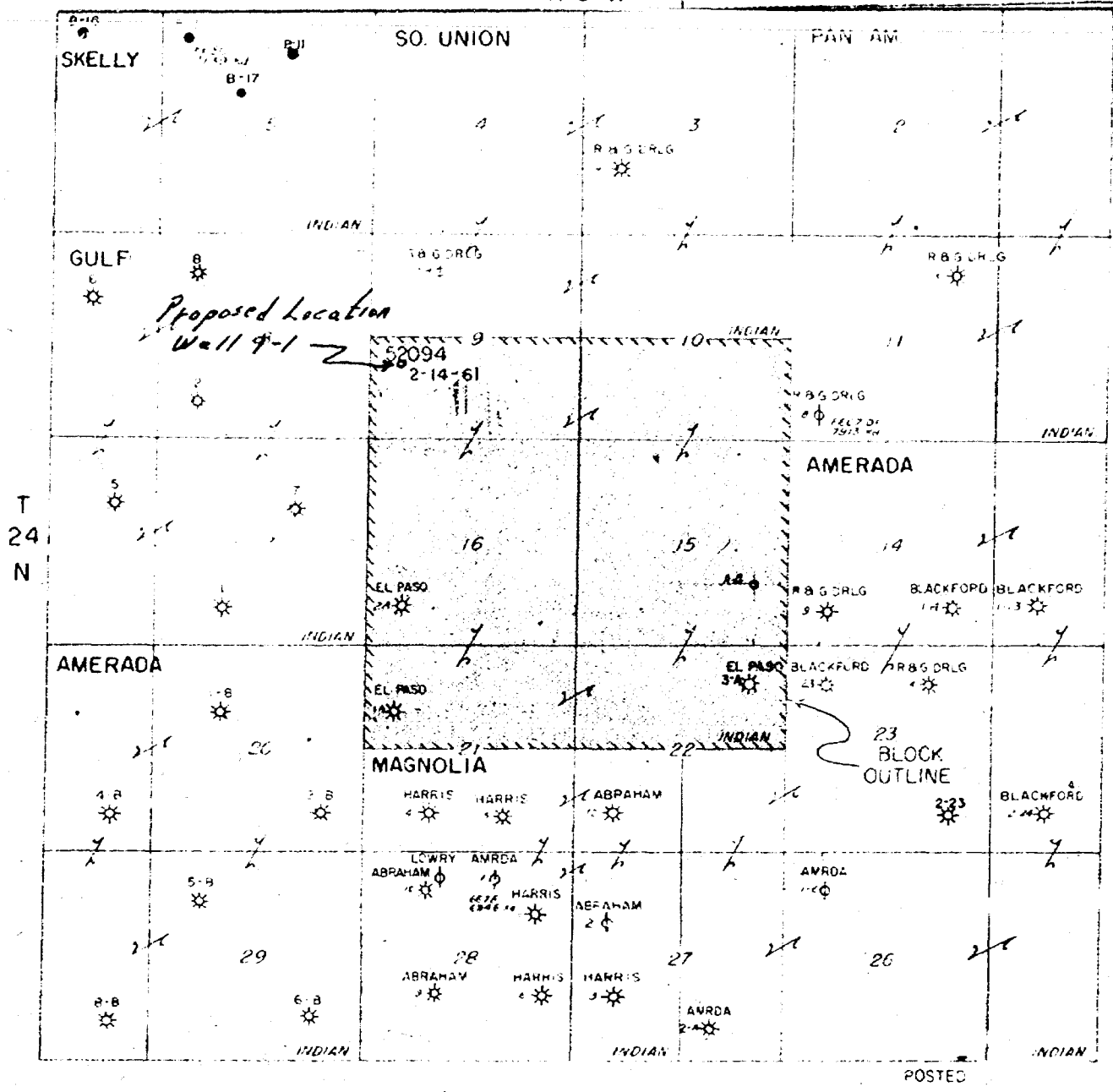
Murray E. Morgan
MURRAY E. MORGAN, Member

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

esx/

BEFORE THE UNITED STATES DISTRICT COURT
 OF THE DISTRICT OF NEW MEXICO
 Exhibit NO. 2019
 CASE NO. 1

R 5 W



Note: Shallow Gas rights farmed out to
 El Paso Natural Gas Company
 under Contract No. 8879.
 Entire block within K.G.S.

NORTHEAST HAYNES BLOCK NO. 206
 RIO ARRIBA CO., N. MEX.

A F F I D A V I T

My name is Kenneth Kirkland. I am an employee of Continental Oil Company as Continental's Land Superintendent of the Durango Division. I am familiar with Exhibit 1 prepared for Continental's application in Case No. 2019 scheduled for hearing on July 27, 1960. This exhibit was prepared under my supervision. The shaded area shows our leases in the Northeast Haynes Block No. 206 in Rio Arriba County, New Mexico.

The proposed triple completion will be located 1850 feet from the south line and 790 feet from the west line of Section 9, Township 24 North, Range 5 West. Exhibit 1 correctly shows the ownership of acreage surrounding Continental's leases.

Kenneth Kirkland
Kenneth Kirkland

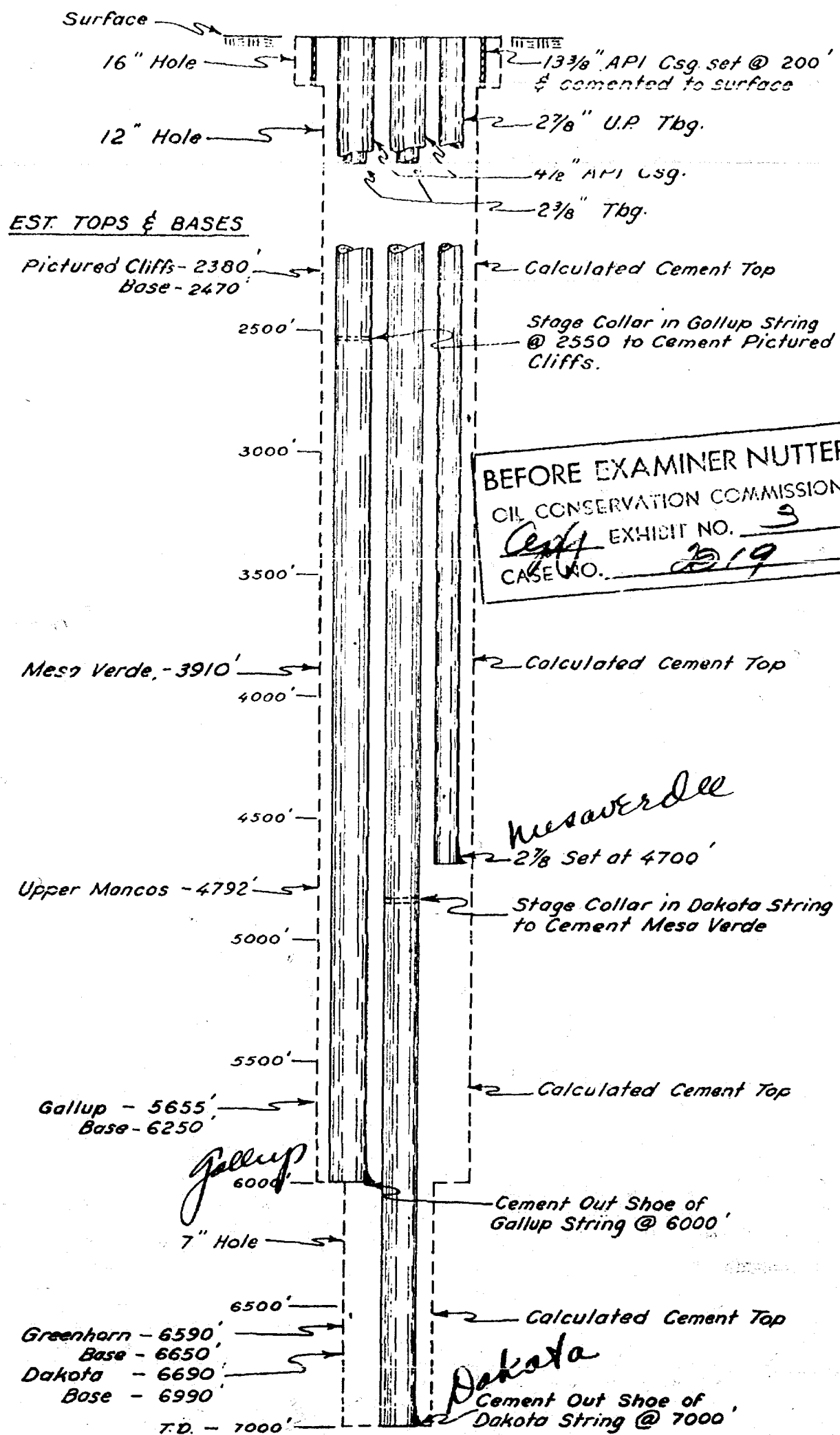
Subscribed and sworn to before me this 25th day of July, 1960.

My commission expires September 9, 1963.

Paul Gray Merry
Notary Public

(SEAL)

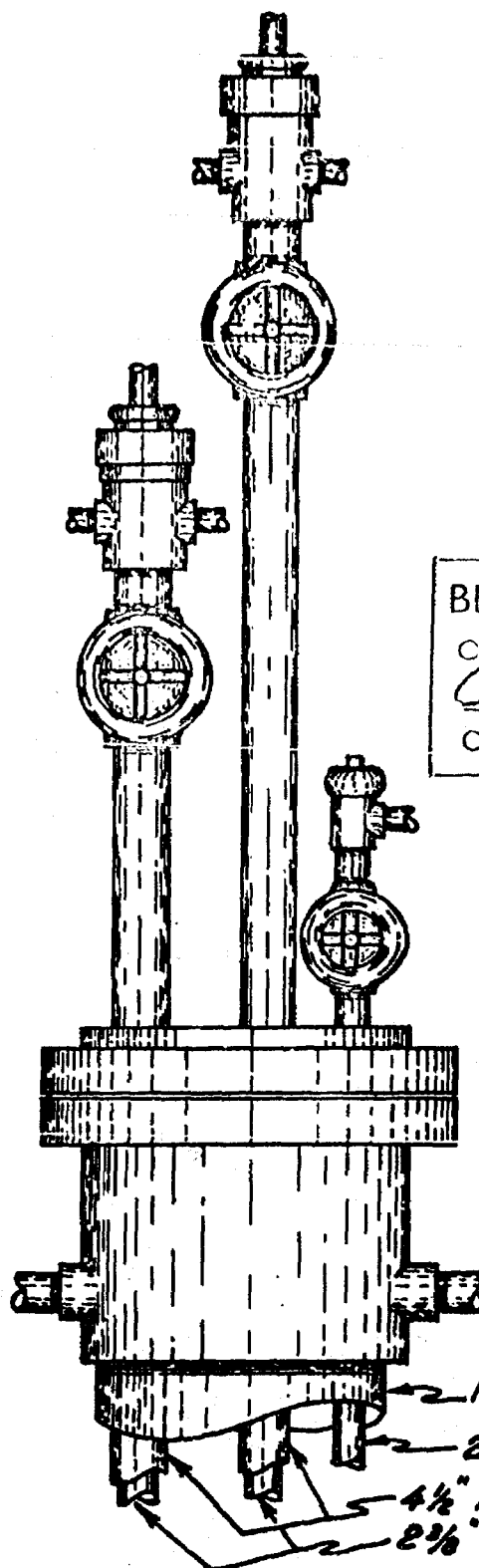
BEFORE EXAMINER NUTTER	
OIL CONSERVATION COMMISSION	
<u>Capp</u>	EXHIBIT NO. <u>2</u>
<u>2019</u>	



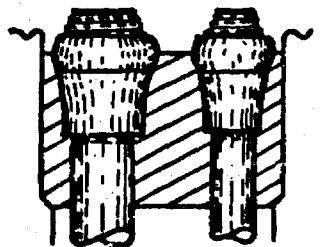
BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 3
CASE NO. 219

CONTINENTAL OIL COMPANY
PROPOSED CASING AND CEMENTING PROGRAM
FOR TRIPLE COMPLETING A WELL
NORTHEAST HAYNES - APACHE No. 9-1

NOT TO SCALE



BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Cep EXHIBIT NO. 4
CASE NO. 2019



Landing Mandrels

2000 Lb. Cold Working Pressure

CONTINENTAL OIL COMPANY
WELLHEAD ASSEMBLY
TRIPLE CASING COMPLETION
NOT TO SCALE

PHONE CH 3-6691

ALBUQUERQUE, NEW MEXICO

EXAMINER HEARING

Application of Continental Oil Company for an order authorizing the triple completion of its Northeast Haynes Apache Well No. 9-1, located in the NW/4 SW/4 of Section 9, Township 24 North, Range 5 West, Rio Arriba County, New Mexico, in such a manner as to permit the production of gas from the Mesaverde formation, the production of gas from the Gallup formation and the production of gas from the Greenhorn formation through parallel strings of 2 7/8 inch, 4 1/2-inch, and 4 1/2-inch casing respectively, cemented in a common well bore. Applicant also proposes to install tubing in the latter two zones.

Case 2019

BEFORE: Daniel S. Nutter, Examiner.

TRANSCRIPT OF HEARING

MR. PAYNE: Application of Continental Oil Company for an order authorizing the triple completion of its Northeast Haynes Apache Well No. 9-1, located in the NW/4 SW/4 of Section 9, Township 24 North, Range 5 West, Rio Arriba County, New Mexico, in such a manner as to permit the production of gas from the Mesaverde formation, the production of gas from the Gallup formation and the production of gas from the Greenhorn formation through parallel strings of 2 7/8 inch, 4 1/2-inch, and 4 1/2-inch casing respectively, cemented in a common well bore. Applicant also proposes to install



tubing in the latter two zones.

MR. GRIFFITH: I have already been introduced in this case. We have the same witness, Mr. MacLennan, and ask that he be sworn again if necessary.

MR. PAYNE: Let the record show that he was sworn in the previous case.

M. A. MacLENNAN

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

DIRECT EXAMINATION

BY MR. GRIFFITH:

Q You are the same Mr. MacLennan that just testified before the Commission as an employee of Continental Oil Company?

A Yes, I am.

MR. GRIFFITH: Would the Commission accept the qualifications of the witness?

MR. NUTTER: Yes, sir. Please proceed, Mr. Griffith.

MR. GRIFFITH: Would the reporter mark these Exhibits 1 and 2?

(Whereupon, Continental's Exhibits 1 and 2 were marked for identification.)

MR. GRIFFITH: Continental Oil Company would like to stipulate with the counsel for the Commission that if Ken Kirkland were here and ready to testify, he would testify substantially in

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conformity with Exhibit 2. I would like to read Exhibit 2.

"My name is Ken Kirkland. I am an employee of Continental Oil Company as Continental's Land Superintendent of the Durango Division. I am familiar with Exhibit 1, prepared for Continental's application in Case No. 2019, scheduled for hearing on July 27, 1960. This exhibit was prepared under my supervision. The shaded area shows our leases in the Northeast Haynes Block No. 206 in Rio Arriba County, New Mexico. The proposed triple completion will be located 1850 feet from the South line and 790 feet from the West line of Section 9, Township 24 North, Range 5 West. Exhibit 1 correctly shows the ownership of acreage surrounding Continental's leases."

Will the attorney for the Commission so stipulate?

MR. PAYNE: Yes, the record will show where the well was located, in any event.

MR. GRIFFITH: I would also like to state at the outstart that Continental has changed the name of this well, as it appears in the Commission's records, as Northeast Haynes Apache 9-1. We have officially changed the name to Northeast Haynes No. 9-1.

MR. NUTTER: Would you repeat that, please?

MR. GRIFFITH: Northeast Haynes No. 9-1.

MR. NUTTER: Thank you.

MR. GRIFFITH: Would the reporter mark these as Exhibits 3 and 4?



(Whereupon, Continental's Exhibits 3 and 4 were marked for identification.)

MR. GRIFFITH: Exhibits 3 and 4 have been furnished to the Commission as a part of our original application.

Q Mr. MacLennan, would you examine Exhibit 3 and tell me if you can identify this exhibit?

A Exhibit 3 is a schematic drawing showing the proposed casing and cementing program for a triple casing completion for Northeast Haynes No. 9-1.

Q Was Exhibit 3 prepared by you or under your supervision?

A Yes.

Q Would you state briefly what Exhibit 3 shows?

A Exhibit No. 3 shows the diameter of hole size to be drilled, the size of casing, the setting depths, estimated formation tops and bases and location of stage collars for cementing.

Q You have heard the stipulation as to the location of this well. Is this your understanding where the well will be located?

A Yes, it is.

Q In what formations is this well to be completed?

A We propose to complete this well as a gas producer in the Mesaverde, a gas producer in the Gallup and a gas producer in the Dakota.

Q What is the estimated top and base of each of these formations?

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A The estimated tops and bases of the producing formations are as shown on Exhibit 3. Estimated top of Mesaverde is 3910, the estimated base at 4792; the estimated top of the Gallup is at 5655, estimated base is at 6250; estimated top of the Dakota is at 6690, and the estimated base at 6990.

Q In the previous case you described the producing formations of the Gallup and Dakota. Are these similar to the formations located in this well?

A Yes, they are.

MR. GRIFFITH: We ask that Mr. MacLennan's testimony in Case No. 2018, in reference to the formations of the Gallup and Dakota, be incorporated by reference in this application and in this hearing.

MR. NUTTER: The testimony in the previous case will be incorporated by reference.

Q Would you describe the Mesaverde formation?

A The Mesaverde formation consists of sandstones, shales and silts and coals; sands are fine-grained and well sorted, interbedded with these shales and silts. Common source of supply for the Mesaverde is based upon the environment of deposition and considered separate from that of the other producing formation. The Mesaverde is isolated from above and below by impermeable shales.

Q What is the basis of your information on these proposed producing formations and their estimated depths?



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A The description of the formation, estimated tops and bases, were obtained from geologic studies of available core analysis and well logs of wells in the area.

Q Is the proposed completion of this well a little different from the completion of the well in Case No. 2018?

A There is some difference, one being the hole size on the Northeast Haynes well, we plan to drill a 16 inch hole similar to the Jicarilla Well and 12 inch hole to the base of the Gallup and then the hole size from the base of the Gallup to the Dakota will be 7 inch.

MR. GRIFFITH: We ask that Mr. MacLennan's previous testimony in Case No. 2018, as to the proposed drilling and completion of this well, be incorporated by reference into this hearing.

MR. NUTTER: It will be.

Q Is there anything you would like to add on the cementing of this well that might be different from the first well?

A No, sir, the cementing will be quite similar. All cementing will be done through the two strings of 4½-inch casing and stage collars used to cement the formations above the Dakota and Gallup.

Q How do you plan to perforate these multiple strings?

A We plan to use conventional bullet gun for perforating the Dakota and use Lane-Wells nuclear oriented directional gun for the Gallup and Mesaverde.



Q What additional action will you take to complete the well?

A We plan to selectively sand-oil treat the Gallup and Dakota and acidize the Mesaverde.

Q What type of well head will be used?

A We will use a triple casing well head assembly, designed to prevent commingling of the production from the three formations. It will be a head similar to the one used in the Jicarilla well.

Q Would you examine Exhibit 4 and tell if this exhibit was prepared by you or under your supervision?

A Yes, it was.

Q What does this exhibit show?

A It is a schematic drawing for triple casing well head assembly, showing the three separate strings of casing, the separate tubing heads and control valves.

MR. GRIFFITH: Would the reporter mark this Exhibit 5?

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

Q By whom was Exhibit 5 prepared?

A Exhibit 5 was prepared for Continental Oil Company by the Rector Well Equipment Company, Inc.

MR. GRIFFITH: I would like to ask that the testimony of Mr. MacLennan in Case No. 2018, as to this type of well head, be incorporated in this case by reference.

MR. NUTTER: Yes, sir, it will.



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Q Will the proposed completion in this well provide for separation of production in the well and at the surface?

A Yes, it will.

Q And will the completion allow for separate reservoir pressure testing?

A Yes.

Q How will you test to determine possible communication between the completed zones?

A We propose to run tests similar to that for packer leakage tests in a dual completion.

Q Will this completion allow for the determination of the gas-oil ratio from each zone?

A Yes, it will.

Q Would you state briefly why Continental Oil Company wants to triply complete this well in this manner?

A Continental Oil Company desires to use this type of completion primarily for economic reasons. The proposed type of completion will result in considerable savings over a dual completion. Also, it is possible to complete in the Mesaverde this well, which we feel does not have sufficient reserves to support an individual well or part of a conventional dual completion. Also, it is anticipated that costs for the majority of workovers will be considerably less than those encountered in a dual completion.

Q And it won't be necessary, will it, to shut in the



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production from all three zones in order to work over one zone?

A No, the majority of workovers can be conducted on one zone without interrupting the production from the other two.

Q Will the correlative rights of the land owners be protected?

A Yes, sir.

MR. GRIFFITH: Does the Commission have any questions of this witness?

MR. PAYNE: Yes, sir.

MR. NUTTER: Mr. Payne.

CROSS EXAMINATION

BY MR. PAYNE:

Q Mr. MacLennan, you do intend to produce the lower two zones through a tubing?

A Yes, sir.

Q Do you also intend to bring the cement to two or three hundred feet above each producing zone?

A Yes, sir.

Q You also intend to use casing centralizers through each pay zone?

A Yes, we do.

MR. PAYNE: Thank you.

BY MR. NUTTER:

Q Mr. MacLennan, going back to Case No. 2018, do you plan



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to use a seating nipple in the string of 2-3/8 inch casing that you'll run to the Greenhorn?

A A seating nipple?

Q Yes, sir.

A No, sir, at the present time, for pumping well?

Q Yes, sir.

A We're looking at a bottom hole pump similar to a casing type pump for anchoring it. It does not use a seating nipple.

Q You will be able to artificially lift the Greenhorn if it becomes necessary?

A Yes, sir.

Q Of course, the tubing in either of the two zones will be pulled and altered if necessary to provide for artificial lift?

A Yes, sir.

Q Now, in the event you should encounter oil in this case here in 2019, will you be able to artificially lift those zones?

A Yes, sir. From our geologic studies and available information we have from that area, possibly the only zone that will be oil productive will be the third zone of the Gallup, and in that case we would produce it through the tubing with a conventional bottom hole pump.

Q It's unlikely that oil would be encountered in the Mesaverde, but if it should be, would you be able to produce that oil through the 2-7/8?



A Yes, through the 2-7/8, similar to the method used in the Greenhorn.

Q What is the estimated cement top above the Pictured Cliffs in this well?

A Above the Pictured Cliffs it will be two to three hundred feet above the top.

Q What about the cement on the Mesaverde?

A In the Mesaverde it will be two to three hundred feet above our uppermost perforation. Possibly there's, it's a large size interval there and it will not be productive near the top.

Q What is the interval that you expect to be perforating the Mesaverde? The top is at 3910, is that correct?

A 3910, yes, sir. In looking at logs, it appears that the top well, it varies, but the top is sort of erratic. The sand does not look as commercial. There's streaks all throughout the Mesaverde and it will be determined from logs and core on our perforation.

Q You don't know yet just what your perforated interval will be?

A No, sir, we do not.

Q But you'll cement it to two or three hundred feet above the highest perforation?

A Yes, sir.

Q What about the cement on the Gallup formation?

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A It will be two to three hundred feet above the top of the Gallup.

Q Then the third zone is the Dakota, correct?

A Yes.

Q Where will the cement be on the Dakota formation?

A We'll bring the cement continuously from the base above the Greenhorn two to three hundred feet above the top of the Greenhorn formation.

Q Mr. MacLennan, when you run your temperature survey to find your cement top and the cement hasn't come as high as you calculated, is there any remedial action that you can take?

A Yes, sir. We can work in this 4- $\frac{1}{2}$ inch pipe and squeeze.

Q You can perforate the pipe?

A Yes, perforate and squeeze it.

Q And squeeze it. This would also be the method for correcting any communication that you might discover later on between the two zones?

A Yes, sir. Also, I might point out we plan to run a cementing shoe on our string of 2- $\frac{7}{8}$ inch tubing. We would like to keep any cement out of there at all, but if necessary, we can use that for cementing if we have trouble encountered or cement tops lower in the area of the Gallup or Mesaverde.

Q What will be the zone on the long string that is centralized?



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A It will be through the Dakota formation.

Q Then you'll have turbulizers on the other string of 4- $\frac{1}{2}$ inch?

A No, sir, on the string of 2- $\frac{7}{8}$'s.

Q You'll have centralizers on the 4- $\frac{1}{2}$ to the Gallup?

A Yes.

Q What will be the zone of centralizers there?

A Through the Gallup producing interval.

Q Then how many, or what interval will be turbulized on the 2- $\frac{7}{8}$ inch?

A Through the Mesaverde formation.

Q Do you have any knowledge of the bottom hole pressures that you'll encounter in these three zones?

A No, sir, I do not. I believe they will be quite similar to those encountered in the Jicarilla area.

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

(Witness excused.)

MR. GRIFFITH: I move that Continental's Exhibits 1, 2, 3, 4 and 5 be admitted into evidence.

MR. NUTTER: Continental's Exhibits 1 through 5 will be admitted.

MR. GRIFFITH: I would like to state at this time that Continental's application in this case was corrected to correctly



reflect the proposed producing formations, and a corrected copy of the application was mailed to all of the offset operators in the area. Also, in connection with these two cases, Case No. 2019 and Case 2018, there is present and ready to testify, if the Commission desires, a Mr. Mel Davis, who is a representative of the Rector Manufacturing Company, whose type of well head equipment we are going to use. If the Commission has any further questions concerning this type of equipment, he is prepared to be sworn and testify at this time to answer any question.

MR. NUTTER: Mr. Griffith, the well head equipment to be used, is that depicted on Exhibit 5 in each case?

MR. GRIFFITH: Yes, sir.

MR. NUTTER: I think the equipment is pretty well explained by the exhibit and no further testimony will be necessary on that point. We appreciate having that man available, however.

MR. GRIFFITH: That's all we have in this case.

MR. NUTTER: Does anyone have anything further for Case 2019? We will take the case under advisement, and take a fifteen-minute recess.

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STATE OF NEW MEXICO)
COUNTY OF BERNALILLO) SS

I, ADA DEARNLEY, Court Reporter, do hereby certify that the foregoing and attached transcript of proceedings before the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, is a true and correct record to the best of my knowledge, skill and ability.

IN WITNESS WHEREOF I have affixed my hand and notarial seal this 31st day of July, 1960.

Ada Dearnley
Notary Public-Court Reporter

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. 2019 heard by me on 7/27, 1960.

[Signature], Examiner
New Mexico Oil Conservation Commission

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