

Director
U.S. Geological Survey
Washington, D. C.

MAIN OFFICE OCC

Continental Oil Company, a corporation, is the owner of certain leases, and interest owner of additional leases: subject to contract between Richardson & Bass and Continental Oil Company, in the proposed Tonto Deep Unit area, as shown on Exhibit "A", attached to the Application for Approval of Tonto Deep Unit Area.

The proposed unit is based primarily on the results of a seismograph survey. The seismograph survey reveals a closed structure, with a minimum of 200 feet of closure in all directions at Devonian level. Structure as mapped on the Devonian horizon by the geophysical survey is shown on attached Exhibit "A-1". It is expected all formations below Middle Pennsylvanian will have structural closure similar to the Devonian closure. The bulk of the seismic survey was accomplished in 1954 and 1955, with a small amount in 1957.

Production may be expected from the following formations:

Lower Delaware Ss	7,000'
Lower Bone Spring	10,300'
Wolfcamp	10,600'
Pennsylvanian	12,000'
Devonian	14,300'

The Pennsylvanian and Devonian are considered the primary objectives, and a 15,000 foot Devonian test is contemplated contingent upon the approval of the proposed unit.

Attached is an index map for purposes of identification marked Exhibit "A-2", which shows the position of the proposed unit in relation to nearby shallow producing fields. The proposed Tonto Deep Unit, a deep rights unit, is located on the northeast flank of the Delaware Basin and encompasses an area in which there is Penrose production at a depth of approximately 4800'. The existing shallow production makes it necessary to restrict the unit stratigraphically as well as geographically.

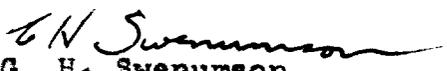
The Delaware sandstone, being a possible producing formation, should be contained in the unit. Thus, it would seem, the top of the Delaware formation would be a logical stratigraphic boundary. However,

the proposed unit lies in the transition zone where basin type Delaware sandstone gives way to shelf type San Andres dolomite. The top of this transitional sequence is anticipated at a depth of approximately 6000', but the exact top of the Delaware can neither be predicted nor picked accurately in the area of the proposed unit. A well drilled in the Unit should encounter a normal shelf sequence down to the San Andres and the first fingers of the basin type Delaware sandstone could appear anywhere from 200' to 500' below the top of the San Andres

If the top of the Delaware formation cannot be accurately determined, it should not be designated as the stratigraphic boundary of the unit, but, because the Delaware is a possible producing formation, a unit boundary somewhere near the top of this formation must be established. The first beds of Delaware Sandstone are anticipated at a depth of approximately 6000' and, therefore, it is recommended that a depth of 6000' be recognized as the upper boundary of the Tonto Deep Unit.

Development in the subject area tends to be retarded due to the wide diversity of ownership and should development be undertaken by the individual lessees, it would not be done in as orderly and scientific a manner as is desirable. The Tonto Deep Unit area as outlined is a single anticlinal structure, and is therefore submitted as a proposed unit in order to bring this diversified ownership together, so that development might be carried out in an orderly manner and in the best interests of conversation.

Respectfully,


G. H. Swenumson
Division Geophysicist
Continental Oil Company


R. F. Mathews
Division Geologist
Continental Oil Company

GHS, RFM-nb
Enclosures

R 34 E

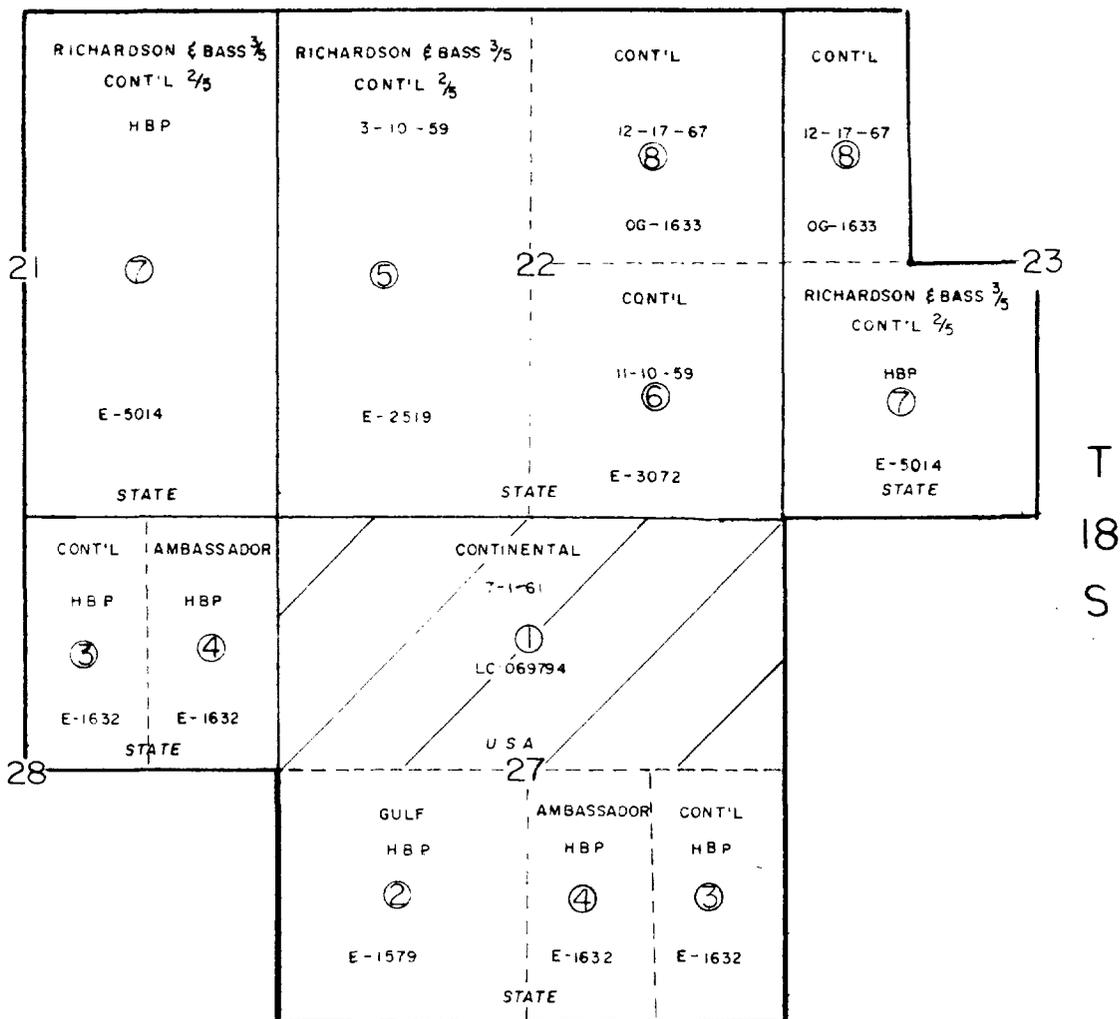


EXHIBIT "A"

OWNERSHIP PLAT
 TONTO DEEP UNIT
 (RIGHTS BELOW 6000')
 Lea County, New Mexico
 T18S - R34E

 Federal Land 320
 State Land 1680
 Total Number of Acres in Unit 2000

 Unit Outline
 Tract Number

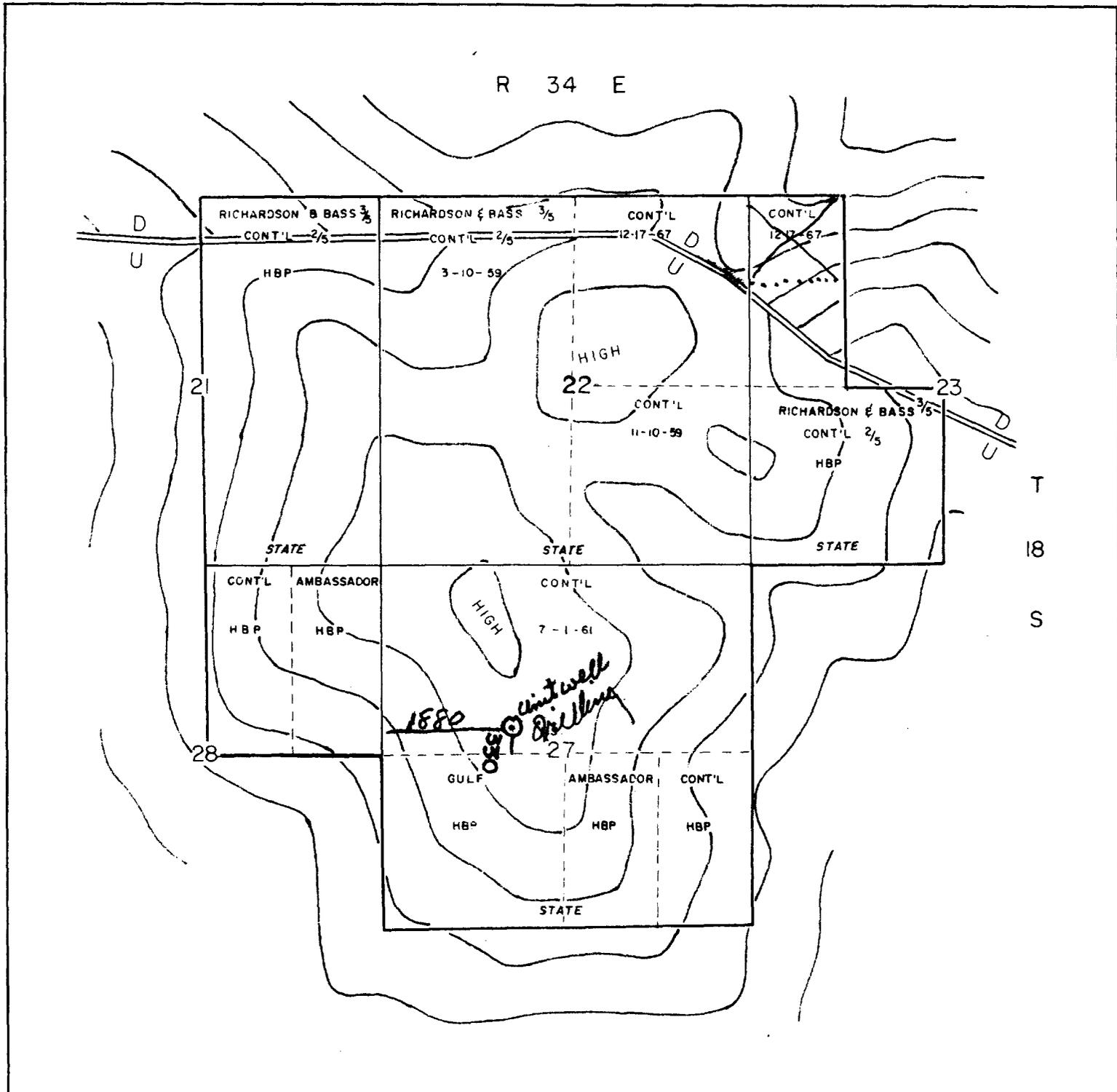


EXHIBIT A-1

MAP OF
 TONTO DEEP UNIT
 (RIGHTS BELOW 6000')
 Lea County, New Mexico
 T 18 S - R 34 E
 SEISMIC STRUCTURE MAP
 HORIZON - DEVONIAN
 CONTOUR INTERVAL - 80 FEET

— UNIT OUTLINE

Director
U.S. Geological Survey
Washington, D. C.

Case 1514

MAIN OFFICE CCC

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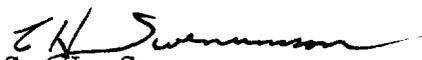
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Development in the subject area tends to be retarded due to the wide diversity of ownership and should development be undertaken by the individual lessees, it would not be done in as orderly and scientific a manner as is desirable. The Tonto Deep Unit area as outlined is a single anticlinal structure, and is therefore submitted as a proposed unit in order to bring this diversified ownership together, so that development might be carried out in an orderly manner and in the best interests of conversation.

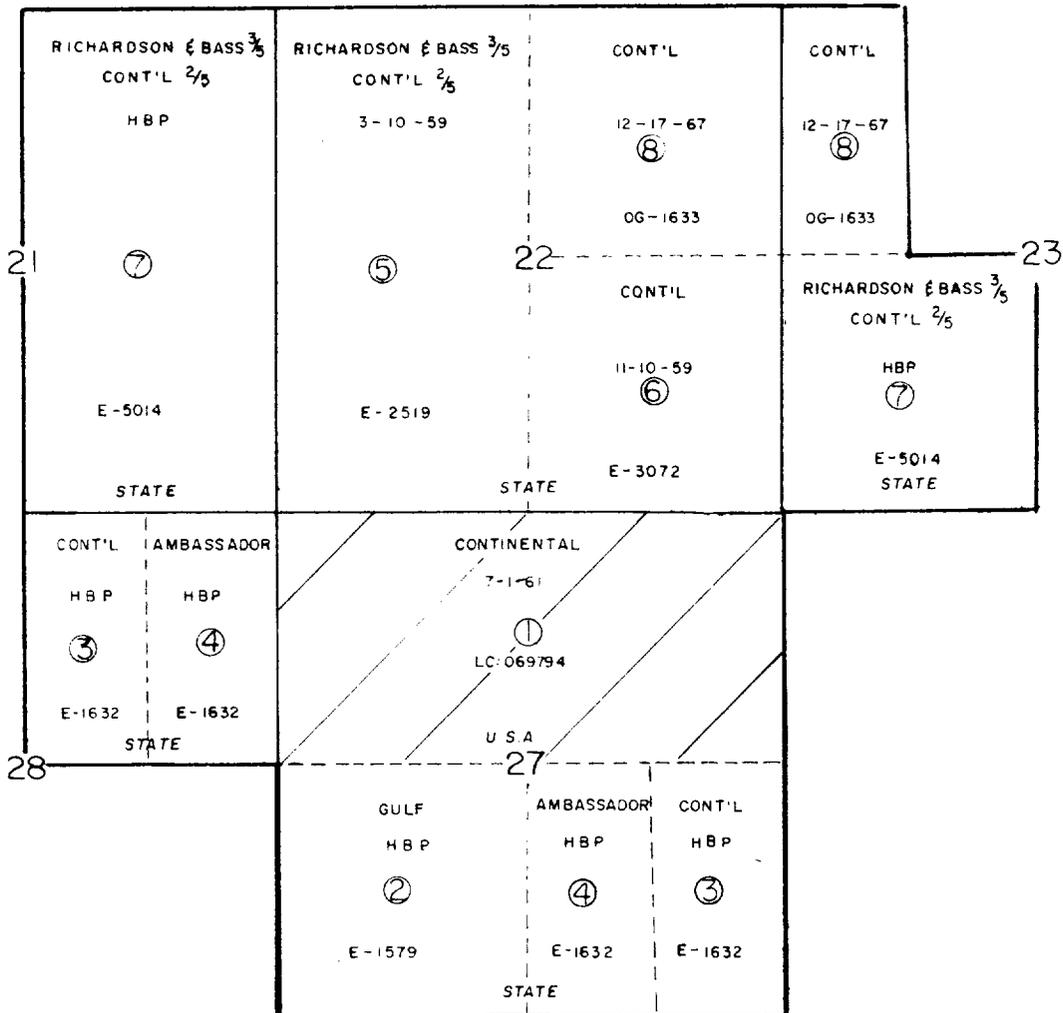
Respectfully,


G. H. Swenumson
Division Geophysicist
Continental Oil Company


R. F. Mathews
Division Geologist
Continental Oil Company

GHS, RFM-nb
Enclosures

R 34 E



T
18
S

EXHIBIT "A"

OWNERSHIP PLAT
 TONTO DEEP UNIT
 (RIGHTS BELOW 6000')
 Lea County, New Mexico
 T 18 S - R 34 E

-  Federal Land 320
-  State Land 1680
- Total Number of Acres in Unit 2000
-  Unit Outline
-  Tract Number

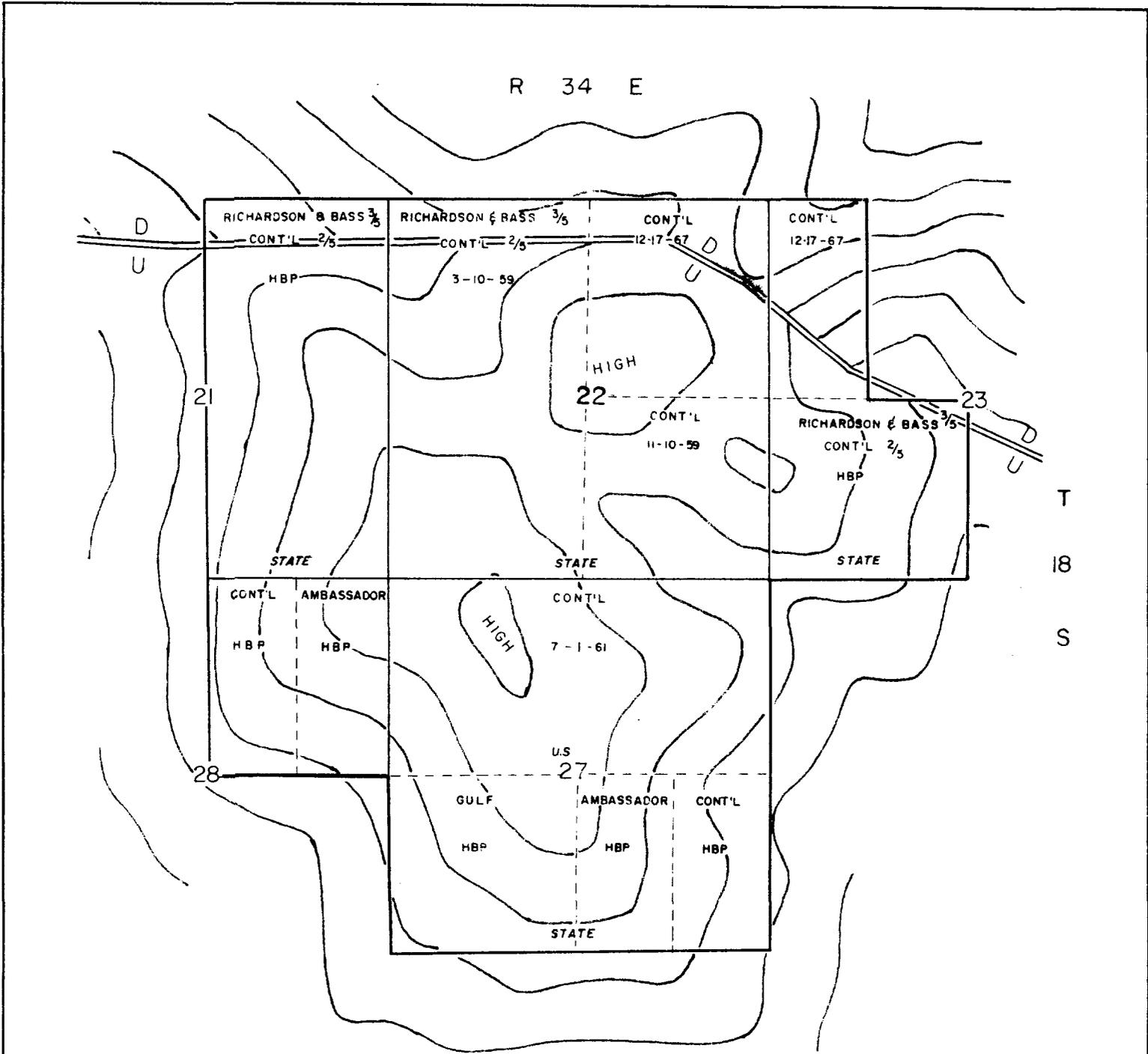


EXHIBIT A-1

MAP OF

TONTO DEEP UNIT

(RIGHTS BELOW 6000')

Lea County, New Mexico

T 18 S - R 34 E

SEISMIC STRUCTURE MAP

HORIZON - DEVONIAN

CONTOUR INTERVAL - 80 FEET

—— UNIT OUTLINE



CONTINENTAL OIL COMPANY

Roswell, New Mexico
January 29, 1959
P.O. Box 1291

*File
12/2/59*

Mr. A. L. Porter, Jr.
Secretary-Director
New Mexico Oil Conservation Commission
Mabry Hall, State Capitol
Santa Fe, New Mexico

Gentlemen:

Re: Unit Agreement - Tonto
Deep Unit Area - Lea
County, New Mexico

Enclosed for your file is one copy of revised Page 3
of Exhibit "B". If you will replace old page 3 with the one
herewith enclosed your file will be correct and up-to-date.

Yours very truly,

D. E. Schick
D. E. Schickanz
Landman
Roswell Division

DES-SUE
Attach

cc: WRH

P.S. The SW/4 of Sec. 23 under Tract 7 was omitted from Page 3
of the Exhibit "B" now in your possession.

Tract No.	Description	No. of Acres	Lease No. & Expiration date of lease	Basic Royalty & Percentage	Lessee of Record	Overriding Royalty & Percentage	Working Interest Owner
7	Sec. 21: E/2 Sec. 23: SW/4	480	E-5014 H.B.P.	State of New Mexico All	Sid W. Richardson and Perry R. Bass	None	3/5 Sid W. Richardson & Perry R. Bass- 2/5 Continental Oil Company*
8	Sec. 22: NE/4 Sec. 23: W/2 NW/4	240	OG-1633 12-17-67	State of New Mexico All	Continental Oil Company	None	Continental Oil Company

*Subject to contract between Richardson & Bass and Continental Oil Company

7 State tracts containing 1680 acres or 84% of Unit Area

J. M. HERVEY 1874-1953

HIRAM M. DOW
CLARENCE E. HINKLE
W. E. BONDURANT, JR.
GEORGE H. HUNKER, JR.
HOWARD C. BRATTON
S. B. CHRISTY IV
LEWIS C. COX, JR.

PAUL W. EATON, JR.
ROBERT C. BLEDSOE

LAW OFFICES
HERVEY, DOW & HINKLE
HINKLE BUILDING
ROSWELL, NEW MEXICO

February 4, 1959

FILE
1514
TELEPHONE MAIN 2-6510
POST OFFICE BOX 547

Mr. A. L. Porter, Jr., Secretary-Director
New Mexico Oil Conservation Commission
Santa Fe, New Mexico

Re: Tonto Deep Unit Agreement

Dear Mr. Porter:

We have heretofore forwarded to you an approved copy of the above unit agreement.

We now enclose herewith Consent and Ratification of the Unit Agreement by R. E. Harding, Jr.; Charles M. Moon and wife, Celeste Moon; Guy Gadbois and wife, Marcelle Gadbois, proprietors of the Norfolk Oil Company; and Port Royal, Incorporated. These interests were not originally committed to the unit and are shown on Tract No. 4 of Exhibit "B" attached to the unit agreement. Executed copies of the foregoing Consents and Ratifications have heretofore been submitted to the U.S.G.S. and in acknowledging receipt of the Consents and Ratifications the U.S.G.S. has advised that they now consider Tract No. 4 as being fully committed to the Tonto Deep Unit Agreement. I believe that all interests as shown by Exhibit "B" are now fully committed to the unit agreement.

The enclosed copies should be attached to the executed copy of the unit agreement which you have.

Yours very truly,

HERVEY, DOW & HINKLE

By 

CEH/bp
Enclosures

cc: Continental Oil Company
P. O. Box 1291
Roswell, New Mexico

CONSENT AND RATIFICATION OF
TONTO DEEP UNIT AGREEMENT

KNOW ALL MEN BY THESE PRESENTS:

The undersigned (whether one or more) hereby acknowledge receipt of a copy of the Unit Agreement for the development and operation of the Tonto Deep Unit Area dated the 15th day of ~~September~~ 1958, embracing lands situated in Lea County, New Mexico, and acknowledge that they have read the same and are familiar with the terms and conditions thereof. The undersigned also being the owners of the leasehold, royalty or other interests in the lands or minerals as indicated on the schedule attached to said Unit Agreement as Exhibit "B" do hereby commit all of their said interests to the Tonto Deep Unit Agreement and do hereby consent thereto and ratify all of the terms and provisions thereof exactly the same as if the undersigned had executed the original of said Unit Agreement, or a counterpart thereof.

IN WITNESS WHEREOF, this instrument is executed by the undersigned as of the date set forth in their respective acknowledgements.

WITNESS
J. G. Sample

PORT ROYAL, INCORPORATED
By: J. G. Sample

President

STATE OF FLORIDA)
) SS
COUNTY OF COLLIER)

On this 3rd day of November, 1958, before me personally appeared J. G. Sample, President of Port Royal, Incorporated to me known to be the person described in and who executed the foregoing instrument, and acknowledged that he executed the same as his free act and deed.

WITNESS my hand and official seal this 3rd day of November, 1958.

Dorothy D. Hannah

Notary Public

My Commission Expires:

STATE OF)
) SS
COUNTY OF)

On this _____ day of _____, 1958, before me personally appeared _____ to me known to be the person described in and who executed the foregoing instrument, and acknowledged that he executed the same as _____ free act and deed.

WITNESS my hand and official seal this _____ day of _____, 1958.

Notary Public

My Commission Expires:

NOV 28 1958
U. S. GEOLOGICAL SURVEY
ROSWELL, NEW MEXICO

CONSENT AND RATIFICATION OF
TONGO DEEP UNIT AGREEMENT

KNOW ALL MEN BY THESE PRESENTS:

The undersigned (whether one or more) hereby acknowledge receipt of a copy of the Unit Agreement for the development and operation of the Tonto Deep Unit Area dated the 15th day of September, 1958, embracing lands situated in Lea County, New Mexico, and acknowledge that they have read the same and are familiar with the terms and conditions thereof. The undersigned also being the owners of the leasehold, royalty or other interests in the lands or minerals as indicated on the schedule attached to said Unit Agreement as Exhibit "B" do hereby commit all of their said interests to the Tonto Deep Unit Agreement and do hereby consent thereto and ratify all of the terms and provisions thereof exactly the same as if the undersigned had executed the original of said Unit Agreement, or a counterpart thereof.

IN WITNESS WHEREOF, this instrument is executed by the undersigned as of the date set forth in their respective acknowledgements.

Amabel Elzyk
Christina W. Goddard
Witnesses

Charles W. Moon
Celeste Moon

STATE OF Florida)
COUNTY OF Dade) SS

On this 27 day of Oct., 1958, before me personally appeared Charles W. Moon & Celeste Moon to me known to be the person s described in and who executed the foregoing instrument, and acknowledged that they executed the same as their free act and deed.

WITNESS my hand and official seal this 27 day of Oct., 1958.

Amabel Elzyk
Notary Public
State of Florida

My Commission Expires:
5-8-1961

STATE OF)
COUNTY OF) SS

On this _____ day of _____, 1958, before me personally appeared _____ to me known to be the person _____ described in and who executed the foregoing instrument, and acknowledged that _____ he _____ executed the same as _____ free act and deed.

WITNESS my hand and official seal this _____ day of _____, 1958.

Notary Public

My Commission Expires:

RECEIVED

NOV 28 1958

U. S. GEOLOGICAL SURVEY
ROSWELL, NEW MEXICO

CONSENT AND RATIFICATION OF
TONGO DEEP UNIT AGREEMENT

KNOW ALL MEN BY THESE PRESENTS:

The undersigned (whether one or more) hereby acknowledge receipt of a copy of the Unit Agreement for the development and operation of the Tonto Deep Unit Area dated the 15th day of September 1958, embracing lands situated in Lea County, New Mexico, and acknowledge that they have read the same and are familiar with the terms and conditions thereof. The undersigned also being the owners of the leasehold, royalty or other interests in the lands or minerals as indicated on the schedule attached to said Unit Agreement as Exhibit "B" do hereby commit all of their said interests to the Tonto Deep Unit Agreement and do hereby consent thereto and ratify all of the terms and provisions thereof exactly the same as if the undersigned had executed the original of said Unit Agreement, or a counterpart thereof.

IN WITNESS WHEREOF, this instrument is executed by the undersigned as of the date set forth in their respective acknowledgements.

R. E. Harding Jr.

STATE OF TEXAS)
) SS
COUNTY OF TARRANT)

The foregoing instrument was acknowledged before me this 10th day of October, 1958, by R. E. Harding, Jr., a single man.

My Commission Expires:
June 1, 1959

Orville Johnson

Notary Public

STATE OF)
) SS
COUNTY OF)

On this _____ day of _____, 1958, before me personally appeared _____ to me known to be the person described in and who executed the foregoing instrument, and acknowledged that he executed the same as free act and deed.

WITNESS my hand and official seal this _____ day of _____, 1958.

My Commission Expires:

Notary Public

RECEIVED

NOV 28 1958

U. S. GEOLOGICAL SURVEY
ROSWELL, NEW MEXICO

J. M. HERVEY 1874-1953

HIRAM M. DOW
CLARENCE E. HINKLE
W. E. BONDURANT, JR.
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PAUL W. EATON, JR.
ROBERT C. BLEDSOE

LAW OFFICES
HERVEY, DOW & HINKLE
HINKLE BUILDING
ROSWELL, NEW MEXICO

December 16, 1958

File
1514
TELEPHONE MAIN 2-6510
POST OFFICE BOX 547

Mr. A. L. Porter, Jr.
Secretary-Director
New Mexico Oil Conservation Commission
Mabry Hall, State Capitol
Santa Fe, New Mexico

Re: Unit Agreement
Tonto Deep Unit Area
Lea County, New Mexico

Dear Mr. Porter:

We enclose an executed approved copy of the above unit agreement.

You will note that the agreement was approved by the Acting Director of the United States Geological Survey on December 9 which, under Section 20 of the agreement, is the effective date of the unit.

We would appreciate your noting your records accordingly.

Yours very truly,

HERVEY, DOW & HINKLE

By Clarence E. Hinkle

CEH/bp
Encl.

cc: Continental Oil Company
Roswell, New Mexico