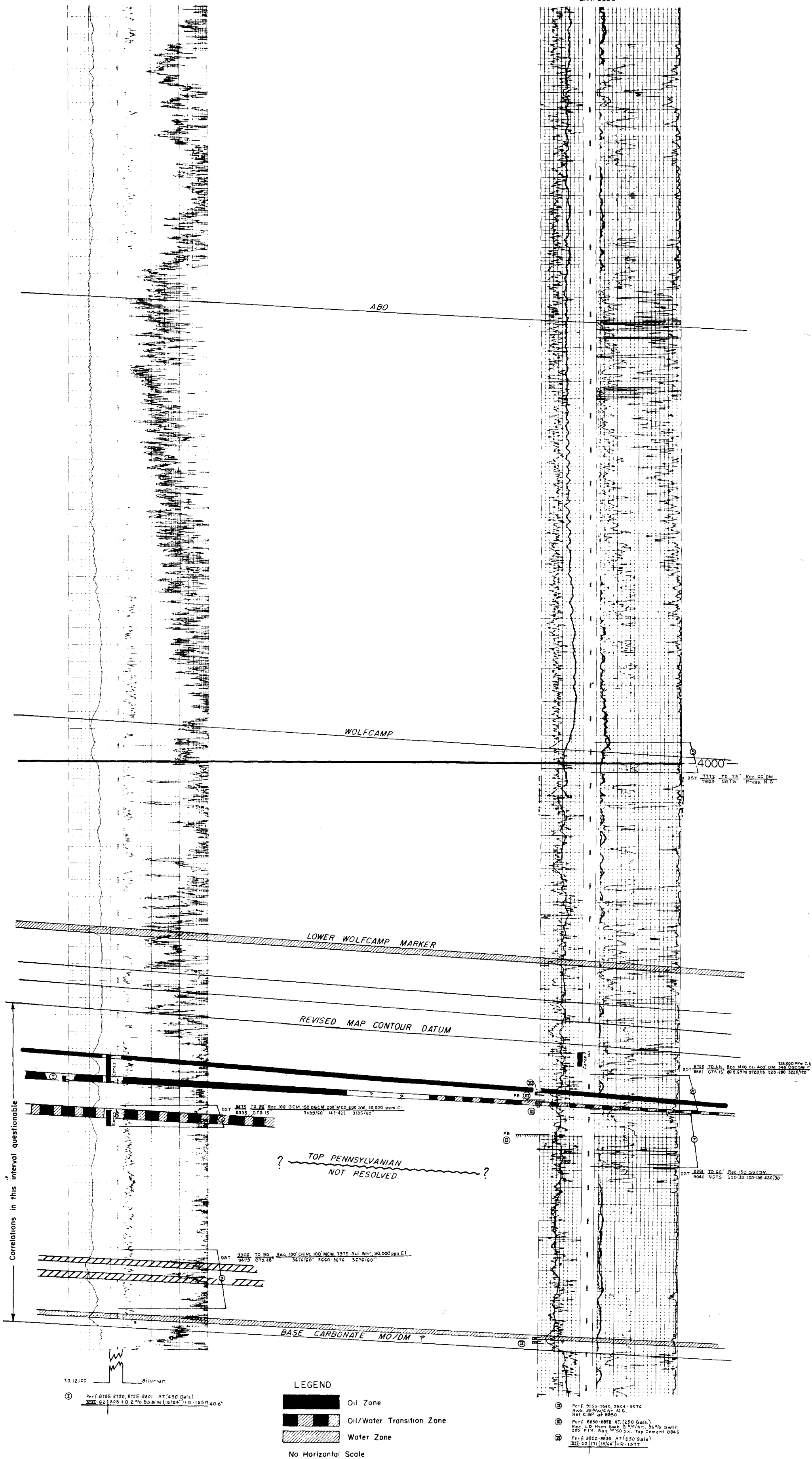


SHELL  
Henshaw Deep Unit No. 5  
23-16-30  
Elev. 3848

SHELL  
Henshaw Deep Unit No. 1  
24-16-30  
Elev. 3836



## Schedule I

### Third Enlargement of the Initial Lower Wolfcamp Participating Area Henshaw Deep Unit, Eddy County, New Mexico Schedule Showing the Percentage of Participation and Ownership of Leases in the Participating Area

Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	LC 063928-B (Tract 14)
Participating Acreage:	80.00 Acres
Percent of Participation:	6.451613
Description:	Section 13: S/2 SW/4 T-16-S, R-30-E, N.M.P.M.
Lease:	J. W. Jones, et al
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	LC 063932 (Tract 15)
Participating Acreage:	40.00 Acres
Percent of Participation:	3.225806
Description:	Sec. 13: SW/4 SE/4 T-16-S, R-30-E, N.M.P.M.
Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	LC 063923 B (Tract 10)
Participating Acreage:	80.00 Acres
Percent of Participation:	6.451613
Description:	Section 14: S/2 SE/4 T-16-S, R-30-E, N.M.P.M.
Lease:	H. J. Loe
Working Interest Owner:	Texaco Inc.
Serial Number and Tract Number:	LC 064637 (Tract 18)
Participating Acreage:	360.00 Acres
Percent of Participation:	29.032258
Description:	Section 23: NE/4, N/2 SE/4, SE/4 SE/4 Section 24: W/2 NE/4 T-16-S, R-30-E, N.M.P.M.
Lease:	H. J. Loe
Working Interest Owner:	Texaco Inc.
Serial Number and Tract Number:	LC 064637-A (Tract 18)
Participating Acreage:	40.00 Acres
Percent of Participation:	3.225806
Description:	Section 23: SW/4 SE/4 T-16-S, R-30-E, N.M.P.M.
Lease:	Bright, Schiff & Kennedy
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	LC 029424 (Tract 3)
Participating Acreage:	240.00 Acres
Percent of Participation:	19.354839
Description:	Section 24: NW/4 & S/2 SW/4 T-16-S, R-30-E, N.M.P.M.

## SCHEDULE I

2

Lease:	Texaco Inc.
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	LC 063925 (Tract 11)
Participating Acreage:	80.00 Acres
Percent of Participation:	6.451613
Description:	Section 24: N/2 SW/4 T-16-S, R-30-E, N.M.P.M.
Lease:	Texaco Inc.
Working Interest Owner:	Texaco Inc.
Serial Number and Tract Number:	NM 074951 (Tract 20)
Participating Acreage:	160.00 Acres
Percent of Participation:	12.903226
Description:	Section 24: S/2 SE/4 Section 25: N/2 NW/4 T-16-S, R-30-E
Lease:	Humble Oil & Refining Company
Working Interest Owner:	Humble Oil & Refining Company
Serial Number and Tract Number:	NM 029137 (Tract 23)
Participating Acreage:	80.00 Acres
Percent of Participation:	6.451613
Description:	Section 24: N/2 SE/4 T-16-S, R-30-E, N.M.P.M.
Lease:	Texaco Inc.
Working Interest Owner:	Texaco Inc.
Serial Number and Tract Number:	NM 07781 (Tract 26)
Participating Acreage:	80.00 Acres
Percent of Participation:	6.451613
Description:	Section 25: N/2 NE/4 T-16-S, R-30-E, N.M.P.M.

## Summary:

	<u>Acres</u>	<u>Per Cent</u>
Total Federal Lands	1240.00	100.0000
Total Indian Lands	-	-
Total State Lands	-	-
Total Fee or Other Lands	-	-
Sub-total	1240.00	100.0000
Uncommitted Acreage	-	-
Total Productive Acreage	1240.00	100.0000

OIL CONSERVATION COMMISSION

P O. BOX 871

SANTA FE, NEW MEXICO

1739

December 21, 1961

C  
O  
P  
Y  
Shell Oil Company  
P. O. Box 1858  
Roswell, New Mexico

Attention: Mr. R. L. Rankin

Re: First and Second Enlargements  
Lower Wolfcamp Participating  
Area, Henshaw Deep Unit  
Eddy County, New Mexico

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the First and Second Enlargements of the Lower Wolfcamp Participating Area for the Henshaw Unit, Eddy County, New Mexico subject to like approval by the United States Geological Survey and the Commissioner of Public Lands of the State of New Mexico.

Two approved copies of each enlargement are returned herewith.

Very truly yours,

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

ALP/JEK/ig

cc: US Geological Survey - Roswell, New Mexico

Commissioner of Public Lands - Santa Fe, New Mexico

1731

December 21, 1961

Shell Oil Company  
P. O. Box 1858  
Roswell, New Mexico

Re: First Enlargement to  
Initial Participating  
Area Lower Wolfcamp  
Formation, Henshaw Deep  
Unit, Eddy County, New  
Mexico

Attention: Mr. S. B. Deal

Gentlemen:

The Commissioner of Public Lands approves as of this date the First Enlargement to the Initial Participating Area, Wolfcamp formation for the Henshaw Deep Unit Area, Eddy County, New Mexico.

We are retaining one complete copy and returning to you two approved sets of this enlargement together with two approved copies of the application.

Please furnish us another complete set when this application has been fully approved.

Very truly yours,

E. S. JOHNNY WALKER  
COMMISSIONER OF PUBLIC LANDS

ESW/mm/v  
encl:  
cc: Oil Conservation Commission  
Santa Fe, New Mexico

U. S. Geological Survey  
Roswell, New Mexico

1734  
December 21, 1961

Shell Oil Company  
P. O. Box 1858  
Roswell, New Mexico

Re: Second Enlargement to  
the Initial Participating  
Area Lower Wolfcamp Form-  
ation, Henshaw Unit, Eddy  
County, New Mexico

Attention: Mr. S. B. Deal

Gentlemen:

The Commissioner of Public Lands approved as of this date the Second Enlargement to the Participating Area, Wolfcamp Formation, for the ~~Henshaw~~ Deep Unit Area, Eddy County, New Mexico.

We are returning four approved copies of this enlargement. Please furnish us another fully approved copy.

Very truly yours,

E. S. JOHNNY WALKER  
COMMISSIONER OF PUBLIC LANDS

ESW/mmvr/v

Encl:

cc: Oil Conservation Commission  
Santa Fe, New Mexico

U. S. Geological Survey  
Roswell, New Mexico



# SHELL OIL COMPANY

P. O. Box 1858  
Roswell, New Mexico

1739

RECEIVED

DEC 18 1961

U.S. GEOLOGICAL SURVEY  
WASHINGTON, D.C.

Re: Henshaw Deep Unit No. 14-08-001-6453  
Eddy County, New Mexico  
Second Enlargement to Initial  
Participating Area

Director  
United States Geological Survey  
Department of the Interior  
Washington 25, D. C.

Commissioner of Public Lands  
State of New Mexico  
State Land Building  
Santa Fe, New Mexico

Through:

Regional Director  
United States Geological Survey  
P. O. Drawer 1857  
Roswell, New Mexico

Oil Conservation Commission  
State of New Mexico  
State Land Building  
Santa Fe, New Mexico

Gentlemen:

In compliance with the requirements of Section 11 of the Henshaw Deep Unit Agreement, No. 14-08-001-6453, approved December 3, 1959, Shell Oil Company, as Unit Operator, submits Schedule I, attached hereto, and requests that the land described therein be approved as constituting the Initial Participating Area and the First and Second Enlargements of the Initial Participating Area.

The Initial Participating Area, effective December 2, 1960, was approved March 31, 1961, and encompassed the following area:

The NW/4 and W/2 NE/4 of Section 24 and the SW/4 SE/4  
and S/2 SW/4 of Section 13, all in T-16-S, R-30-E, N.M.P.M.

Application has been made for a First Enlargement of the Initial Participating Area. The resulting area will total 720 acres and include the following land in addition to that described above:

The SE/4 and E/2 SW/4 of Section 24 and the N/2 NE/4  
and NE/4 NW/4 of Section 25, all in T-16-S, R-30-E, N.M.P.M.

A Second Enlargement is requested as a result of the successful completion on November 4, 1961, of Unit Well No. 3A in a Lower Wolfcamp interval (8711 to 8740 feet) generally correlative to that producing in Unit Well No. 2. Well No. 3A was tested on November 4, 1961, at a daily flowing rate of 136 barrels of oil and 3 barrels of water on a 20/64-inch choke with a flowing tubing pressure of 400 pounds per square inch and a gas-oil ratio of 1501 cubic feet per barrel. Following a subsequent acid treatment the well flowed at a daily rate of 126 barrels of oil and 1 barrel of water on a 12/64-inch choke with a flowing tubing pressure of 600 pounds per square inch.

The oil pay thickness in each of the three wells completed to date is relatively thin; however, well production performance as compared to subsurface pressure decline is indicative of a reservoir with excellent lateral communication. It is predicted that these wells will effectively drain relatively large reservoir areas (in excess of 160 acres) and should be considered commercial completions on the basis of anticipated ultimate recovery.

The attached plat reflects the most recent structural interpretation based on seismos and subsurface data from the existing wells. Insufficient structural relief, however, has been noted in these wells to permit a firm delineation of the productive area. Therefore, until additional geological information is acquired through further development, it is proposed that the Second Enlargement of the Initial Participating Area be made on the same basis as that proposed for the First Enlargement, i.e., a single row of 40-acre subdivisions surrounding the 40-acre tract on which the well is located. This will create an enlarged participating area of 800 acres described as follows:

The NW/4, SE/4, SW/4 and W/2 NE/4 of Section 24, the S/2 SW/4 and SW/4 SE/4 of Section 13 and the N/2 NE/4 and NE/4 NW/4 of Section 25, all in T-16-S, R-30-E, N.M.P.M.

The land described above is unitized and is all the land that can presently be regarded as being reasonably proved or indicated to be productive of unitized substances in paying quantities.

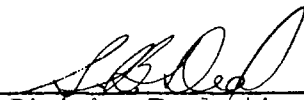
In support of this application please refer to the attachments to the application for First Enlargement of the Initial Participating Area, which is being submitted concurrently with this letter. In addition, the following exhibits are attached hereto:

1. A structural map showing the Henshaw Deep Unit, the Initial Participating Area for the Lower Wolfcamp formation, the First and proposed Second Enlargements of the Initial Participating Area.
2. Schedule I, showing the participating percentage of each lease included or partially included in the enlarged participating area.

The Unit Operator respectfully requests your approval of this application for Second Enlargement of the Initial Participating Area of the Henshaw Deep Unit to be effective November 1, 1961, the first day of the month in which Unit Well No. 3A was successfully completed in the Lower Wolfcamp formation.

SHELL OIL COMPANY

By



Division Production Superintendent



HENSHAW DEEP UNIT (NO. 14-08-001-6453) -3-  
Second revision of Lower Wolfcamp participating area

Approved *William S. Bailey* DATE FEB 28 1962  
~~Supervisor~~, United States Geological Survey  
**Acting** Director

Approved \_\_\_\_\_ DATE \_\_\_\_\_  
Commissioner of Public Lands

Approved \_\_\_\_\_ DATE \_\_\_\_\_  
Oil Conservation Commission

Schedule I (Revised)  
Second Enlargement of the Initial Lower Wolfcamp Participating Area  
Henshaw Deep Unit, Eddy County, New Mexico  
Schedule Showing the Percentage of Participation  
and Ownership of Leases in the Participating Area

Lease:	Bright, Schiff & Kennedy
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	LC-029424 (Tract 3)
Participating Acreage:	240.00 Acres
Percent of Participation:	<u>30.0000%</u>
Description:	Sec. 24: NW/4 and S/2 SW/4 T-16-S, R-30-E, N.M.P.M.
Lease:	Texaco Inc.
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	LC-063925 (Tract 11)
Participating Acreage:	80.00 Acres
Percent of Participation:	<u>10.0000%</u>
Description:	Sec. 24: N/2 SW/4 T-16-S, R-30-E, N.M.P.M.
Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	LC-063928-B (Tract 14)
Participating Acreage:	80.00 Acres
Percent of Participation:	<u>10.0000%</u>
Description:	Sec. 13: S/2 SW/4 T-16-S, R-30-E, N.M.P.M.
Lease:	J. W. Jones et al
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	LC-063932 (Tract 15)
Participating Acreage:	40.00 Acres
Percent of Participation:	<u>5.0000%</u>
Description:	Sec. 13: SW/4 SE/4 T-16-S, R-30-E, N.M.P.M.
Lease:	H. J. Loe
Working Interest Owner:	Texaco Inc.
Serial Number and Tract Number:	LC-064637 (Tract 18)
Participating Acreage:	80.00 Acres
Percent of Participation:	<u>10.0000%</u>
Description:	Sec. 24: W/2 NE/4 T-16-S, R-30-E, N.M.P.M.
Lease:	Texaco Inc.
Working Interest Owner:	Texaco Inc.
Serial Number and Tract Number:	NM-074951 (Tract 20)
Participating Acreage:	120.00 Acres
Percent of Participation:	<u>15.0000%</u>
Description:	Sec. 24: S/2 SE/4 Sec. 25: NE/4 NW/4 T-16-S, R-30-E, N.M.P.M.

HENSHAW DEEP UNIT (NO. 14-08-001-6453) -3-

Approved \_\_\_\_\_ DATE \_\_\_\_\_  
Supervisor, United States Geological Survey

Approved \_\_\_\_\_ DATE December 21, 1961  
Commissioner of Public Lands

Approved \_\_\_\_\_ DATE \_\_\_\_\_  
Oil Conservation Commission

HENSHAW DEEP UNIT (NO. 14-08-001-6453) -3-

Approved \_\_\_\_\_ DATE \_\_\_\_\_  
Supervisor, United States Geological Survey

Approved \_\_\_\_\_ DATE \_\_\_\_\_  
Commissioner of Public Lands

Approved W. H. Patton \_\_\_\_\_ DATE 12 ' 2 ' 61  
Oil Conservation Commission

Lease: Humble Oil & Refining Company  
Working Interest Owner: Humble Oil & Refining Company  
Serial Number and Tract Number: NM-029137 (Tract 23)  
Participating Acreage: 80.00 Acres  
Percent of Participation: 10.0000%  
Description: Sec. 24: N/2 SE/4  
T-16-S, R-30-E, N.M.P.M.

Lease: Texaco Inc.  
Working Interest Owner: Texaco Inc.  
Serial Number and Tract Number: NM-07781 (Tract 26)  
Participating Acreage: 80.00 Acres  
Percent of Participation: 10.0000%  
Description: Sec. 25: N/2 NE/4  
T-16-S, R-30-E, N.M.P.M.

## Summary:

	<u>Acres</u>	<u>Per Cent</u>
Total Federal lands	800.00	100.0000
Total Indian lands	-	-
Total State lands	-	-
Total fee or other lands	-	-
Sub-total	800.00	100.0000
Uncommitted acreage	-	-
Total Productive Acreage	800.00	100.0000



# State of New Mexico



## Commissioner of Public Lands



E. S. JOHNNY WALKER  
COMMISSIONER

December 21, 1961

Shell Oil Company  
P. O. Box 1858  
Roswell, New Mexico

Re: Second Enlargement to  
the Initial Participating  
Area Lower Wolfcamp Form-  
ation, Henshaw Unit, Eddy  
County, New Mexico

Attention: Mr. S. B. Deal

Gentlemen:

The Commissioner of Public Lands approved as of this date the Second Enlargement to the Participating Area, Wolfcamp Formation, for the Henshaw Deep Unit Area, Eddy County, New Mexico.

We are returning four approved copies of this enlargement. Please furnish us another fully approved copy.

Very truly yours,

E. S. JOHNNY WALKER  
COMMISSIONER OF PUBLIC LANDS

ESW/mmvr/v

Encl:

cc: Oil Conservation Commission  
Santa Fe, New Mexico

U. S. Geological Survey  
Roswell, New Mexico

SHELL	
RECEIVED	
DEC 22 1961	
ROSWELL PROD.	
Divn. Mgr.	<i>[initials]</i>
Supt.	
E. Eng.	
M. Eng.	
P. O. Supv.	P. O. BOX 781
Drig. F.	SANTA FE, NEW MEXICO
Off. Supv.	
Discuss	Well File
Reply	Use File
Call Up	Field File
Destroy	Gen. Cor.



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
Drawer 1857  
Roswell, New Mexico

IN REPLY REFER TO:

March 9, 1962

Shell Oil Company  
P. O. Box 1858  
Roswell, New Mexico

Gentlemen:

Your undated applications requesting a change in designation of the initial participating area under the Henshaw Deep unit agreement, Eddy County, New Mexico, from Pennsylvanian to Lower Wolfcamp, and approval of the first and second revisions thereof, effective as of June 1 and November 1, 1961, respectively, were approved February 28, 1962, by the Acting Director of the Geological Survey.

Two approved copies of each application are enclosed. It is assumed that you will furnish the State of New Mexico and any other interested party with appropriate evidence of this approval.

Very truly yours,

*Carl C. Traywick*  
CARL C. TRAYWICK  
Acting Regional Oil and Gas Supervisor

SHELL	
RECEIVED	
MAR 12 1962	
OIL & GAS PROD.	
Divn. Eng.	
Geol.	
EE Eng.	✓
NM. Eng.	
PRS Supv.	
Chrg. E.	
Chrg. Supv.	
Discuss.	Well File
Reply	File
CEMIDpp	Field File
Country	Gen. Cor.





## SHELL OIL COMPANY

P. O. Box 1858  
Roswell, New Mexico

RECEIVED

DEC 19 1961 Re: Henshaw Deep Unit No. 14-08-001-6453  
Eddy County, New Mexico  
First Enlargement to Initial  
Participating Area

U. S. GEOLOGICAL SURVEY  
WASHINGTON, D. C.

Director  
United States Geological Survey  
Department of the Interior  
Washington 25, D. C.

Through:

Regional Director  
United States Geological Survey  
P. O. Drawer 1857  
Roswell, New Mexico

Commissioner of Public Lands  
State of New Mexico  
State Land Building  
Santa Fe, New Mexico

Oil Conservation Commission  
State of New Mexico  
State Land Building  
Santa Fe, New Mexico

Gentlemen:

In compliance with the requirements of Section 11 of the Henshaw Deep Unit Agreement, No. 14-08-001-6453, approved December 3, 1959, Shell Oil Company, as Unit Operator, submits Schedule I, attached hereto, and requests that the land described therein be approved as constituting the Initial Participating Area and the First Enlargement of the Initial Participating Area. It is further requested that the geological formation from which oil production is obtained in the Initial Participating Area, as herein enlarged, be redesignated Lower Wolfcamp on the basis of new paleontological information from Well No. 3A.

The Initial Participating Area, effective December 2, 1960, was approved March 31, 1961, and encompassed the following area:

The NW/4 and W/2 NE/4 of Section 24 and the SW/4 SE/4  
and S/2 SW/4 of Section 13, All in T-16-S, R-30-E, N.M.P.M.

The land described, containing an aggregate 360 acres consists of the 40-acre subdivision upon which Unit Well No. 1 is located together with eight 40-acre subdivisions surrounding the well. Unit Well No. 1 was recomplected December 2, 1960, from a non-commercial Devonian gas reservoir to the Lower Wolfcamp (previously designated Upper Pennsylvanian) formation and was officially determined to constitute a discovery of unitized substances in paying quantities.

Unit Well No. 2, located in the SW/4 SE/4 of Section 24, T-16-S, R-30-E, N.M.P.M., was initially completed on April 9, 1961, flowing at a daily rate of 263 barrels of oil from a Pennsylvanian interval, 9124 to 9132 feet. When this reservoir proved to be of limited extent, the well was recomplected on June 21, 1961, from the Lower Wolfcamp interval, 8753 to 8763 feet. On initial test Unit Well No. 2 flowed at a daily rate of 127 barrels of oil and 34 barrels of water with a gas-oil ratio of 1770 cubic feet per barrel and a flowing tubing pressure of 875 pounds per square inch.

During a recent test the well flowed at a daily rate of 123 barrels of oil and 2 barrels of water on a 10/64-inch choke with flowing tubing pressure 1000 pounds per square inch and gas-oil ratio of 1624 cubic feet per barrel. As of November 1, 1961, the well had produced a total of some 15,310 barrels of oil from the Lower Wolfcamp reservoir accompanied by a pressure decline of 270 pounds per square inch.

On the attached cross section it will be noted that while the porous intervals producing from Unit Wells Nos. 1 and 2 are not correlative in precise detail, they obviously are closely related within a single rock unit and can be considered a common reservoir or source of supply. The oil pay thickness in each of the two wells is relatively thin; however, well production performance as compared to subsurface pressure decline is indicative of a reservoir with excellent lateral communication. Unit Well No. 1 has suffered no measurable change in reservoir pressure since completion and after the production of approximately 33,300 barrels of oil. Thus, it is predicted that the existing wells will effectively drain relatively large reservoir areas (in excess of 160 acres) and should be considered commercial completions on the basis of anticipated ultimate recovery.

The attached plat reflects the most recent structural interpretation based on seismos and subsurface data from the existing wells. Insufficient structural relief, however, has been noted in these wells to permit a firm delineation of the productive area. Therefore, until additional geological information is acquired through further development, it is proposed that the First Enlargement of the Initial Participating Area be made by adding an aggregate 360-acres consisting of the 40-acre subdivision upon which Unit Well No. 2 is located and the eight 40-acre subdivisions surrounding the well. This will create a participating area of 720 acres described as follows:

The NW/4, SE/4, W/2 NE/4 and E/2 SW/4 of Section 24,  
the S/2 SW/4 and SW/4 SE/4 of Section 13 and the N/2  
NE/4 and NE/4 NW/4 of Section 25, all in T-16-S,  
R-30-E, N.M.P.M.

The land described above is unitized and is all the land that can presently be regarded as being reasonably proved or indicated to be productive of unitized substances in paying quantities.

Designation of the reservoir producing in Unit Well No. 1 as Upper Pennsylvanian was based originally on wide regional correlation of electrical logs and represented the best available estimate as to the Pennsylvanian-Wolfcamp contact. Subsequent coring in Unit Well No. 3A has not permitted the fixing of the formational contact; however, it has proved beyond question that within Well No. 3A the Wolfcamp formation extends at least to a depth of 8974 feet, based on excellent fusulinid control. In order to provide more accurate and consistent reservoir nomenclature, it is suggested that the name Lower Wolfcamp be applied to the productive zone of Initial Participating Area as well as the first enlargement.

In support of this application we are submitting the following exhibits:


1. A structural map showing the Henshaw Deep Unit, the Initial Participating Area for the Lower Wolfcamp formation and the proposed First Enlargement of the Initial Participating Area.
2. Schedule I showing the participating percentage of each lease included or partially included in the enlarged participating area.
3. A cross-section showing correlation of the Lower Wolfcamp producing intervals between the Initial Participating Area and the First Enlargement of the Initial Participating Area and indicating results of drill stem tests run in existing wells.
4. Electrical logs indicating formation tops.
5. Summary of production and reservoir pressure data.

The Unit operator respectfully requests your approval of this application for First Enlargement of the Initial Participating Area of the Henshaw Deep Unit to be effective June 1, 1961, the first day of the month in which Unit Well No. 1 was successfully completed in the Lower Wolfcamp formation.

SHELL OIL COMPANY

By:   
Division Production Superintendent

Attachments

Approved  DATE FEB 28 1962  
Acting Supervisor, United States Geological Survey  
Director

Approved \_\_\_\_\_ DATE \_\_\_\_\_  
Commissioner of Public Lands

Approved \_\_\_\_\_ DATE \_\_\_\_\_  
Oil Conservation Commission

In support of this application we are submitting the following exhibits:

1. A structural map showing the Henshaw Deep Unit, the Initial Participating Area for the Lower Wolfcamp formation and the proposed First Enlargement of the Initial Participating Area.
2. Schedule I showing the participating percentage of each lease included or partially included in the enlarged participating area.
3. A cross-section showing correlation of the Lower Wolfcamp producing intervals between the Initial Participating Area and the First Enlargement of the Initial Participating Area and indicating results of drill stem tests run in existing wells.
4. Electrical logs indicating formation tops.
5. Summary of production and reservoir pressure data.


The Unit operator respectfully requests your approval of this application for First Enlargement of the Initial Participating Area of the Henshaw Deep Unit to be effective June 1, 1961, the first day of the month in which Unit Well No. 1 was successfully completed in the Lower Wolfcamp formation.

SHELL OIL COMPANY

By:   
Division Production Superintendent

Attachments

Approved \_\_\_\_\_ DATE \_\_\_\_\_  
Supervisor, United States Geological Survey

Approved  DATE December 21, 1961  
Commissioner of Public Lands


Approved \_\_\_\_\_ DATE \_\_\_\_\_  
Oil Conservation Commission

In support of this application we are submitting the following exhibits:

1. A structural map showing the Henshaw Deep Unit, the Initial Participating Area for the Lower Wolfcamp formation and the proposed First Enlargement of the Initial Participating Area.
2. Schedule I showing the participating percentage of each lease included or partially included in the enlarged participating area.
3. A cross-section showing correlation of the Lower Wolfcamp producing intervals between the Initial Participating Area and the First Enlargement of the Initial Participating Area and indicating results of drill stem tests run in existing wells.
4. Electrical logs indicating formation tops.
5. Summary of production and reservoir pressure data.

The Unit operator respectfully requests your approval of this application for First Enlargement of the Initial Participating Area of the Henshaw Deep Unit to be effective June 1, 1961, the first day of the month in which Unit Well No. 1 was successfully completed in the Lower Wolfcamp formation.

SHELL OIL COMPANY

By:   
Division Production Superintendent

Attachments

Approved \_\_\_\_\_ DATE \_\_\_\_\_  
Supervisor, United States Geological Survey

Approved \_\_\_\_\_ DATE \_\_\_\_\_  
Commissioner of Public Lands

Approved  DATE 12-21-61  
Oil Conservation Commission

Schedule I (Revised)  
First Enlargement of the Initial Lower Wolfcamp Participating Area  
Henshaw Deep Unit, Eddy County, New Mexico  
Schedule Showing the Percentage of Participation  
and Ownership of Leases in the Participating Area

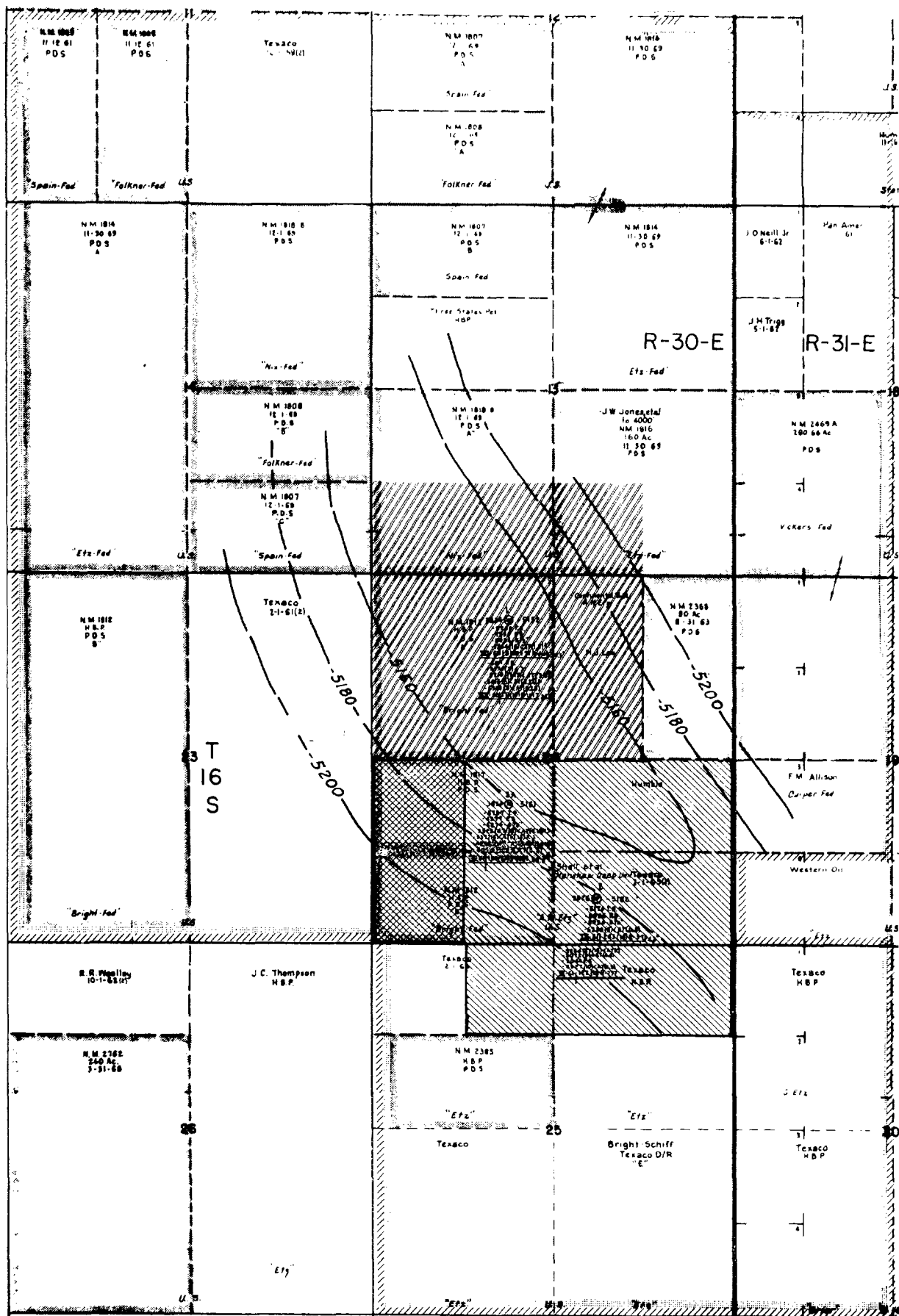
Lease:	Bright, Schiff & Kennedy
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	LC-029424 (Tract 3)
Participating Acreage:	200.00 Acres
Percent of Participation:	<u>27.7777%</u>
Description:	Sec. 24: NW/4 and SE/4 SW/4 T-16-S, R-30-E, N.M.P.M.
Lease:	Texaco Inc.
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	LC-063925 (Tract 11)
Participating Acreage:	40.00 Acres
Percent of Participation:	<u>5.5556%</u>
Description:	Sec. 24: NE/4 SW/4 T-16-S, R-30-E, N.M.P.M.
Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	LC-063928-B (Tract 14)
Participating Acreage:	80.00 Acres
Percent of Participation:	<u>11.1111%</u>
Description:	Sec. 13: S/2 SW/4 T-16-S, R-30-E, N.M.P.M.
Lease:	J. W. Jones et al
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	LC-063932 (Tract 15)
Participating Acreage:	40.00 Acres
Percent of Participation:	<u>5.5556%</u>
Description:	Sec. 13: SW/4 SE/4 T-16-S, R-30-E, N.M.P.M.
Lease:	H. J. Loe
Working Interest Owner:	Texaco Inc.
Serial Number and Tract Number:	LC-064637 (Tract 18)
Participating Acreage:	80.00 Acres
Percent of Participation:	<u>11.1111%</u>
Description:	Sec. 24: W/2 NE/4 T-16-S, R-30-E, N.M.P.M.
Lease:	Texaco Inc.
Working Interest Owner:	Texaco Inc.
Serial Number and Tract Number:	NM-074951 (Tract 20)
Participating Acreage:	120.00 Acres
Percent of Participation:	<u>16.6667%</u>
Description:	Sec. 24: S/2 SE/4 Sec. 25: NE/4 NW/4 T-16-S, R-30-E, N.M.P.M.

Lease: Humble Oil & Refining Company  
Working Interest Owner: Humble Oil & Refining Company  
Serial Number and Tract Number: NM-029137 (Tract 23)  
Participating Acreage: 80.00 Acres  
Percent of Participation: 11.1111%  
Description: Sec. 24: N/2 SE/4  
T-16-S, R-30-E, N.M.P.M.

Lease: Texaco Inc.  
Working Interest Owner: Texaco Inc.  
Serial Number and Tract Number: NM-07781 (Tract 26)  
Participating Acreage: 80.00 Acres  
Percent of Participation: 11.1111%  
Description: Sec. 25: N/2 NE/4  
T-16-S, R-30-E, N.M.P.M.

## Summary:

	<u>Acres</u>	<u>Per Cent</u>
Total Federal lands	720.00	100.0000
Total Indian lands	-	-
Total State lands	-	-
Total fee or other lands	-	-
Sub-total	720.00	100.0000
Uncommitted acreage	-	-
Total Productive Acreage	720.00	100.0000



# LEGEND

- Unit Boundary
- Working Interest Boundary
- Initial Participating Area
- First Enlargement
- Second Enlargement

## HENSHAW DEEP UNIT Eddy County, New Mexico

Contours on Top of Penn. Log Marker

SCALE: 1" = 2000'





IN REPLY REFER TO:

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

Drawer 1857  
Roswell, New Mexico

March 9, 1962

Shell Oil Company  
P. O. Box 1858  
Roswell, New Mexico

Gentlemen:

Your undated applications requesting a change in designation of the initial participating area under the Henshaw Deep unit agreement, Eddy County, New Mexico, from Pennsylvanian to Lower Wolfcamp, and approval of the first and second revisions thereof, effective as of June 1 and November 1, 1961, respectively, were approved February 28, 1962, by the Acting Director of the Geological Survey.

Two approved copies of each application are enclosed. It is assumed that you will furnish the State of New Mexico and any other interested party with appropriate evidence of this approval.

Very truly yours,

*Carl C. Traywick*

CARL C. TRAYWICK  
Acting Regional Oil and Gas Supervisor

SHELL	
RECEIVED	
MAR 12 1962	
ROSWELL PROD.	
Down	
Surf.	
EE Eng.	✓
NM Eng.	
GPS Supv.	
Chief E.	
Chief Supv.	
Discuss	Well File
Reply	Is. File
CEMIDpp	Field File
Distr	Gen. Cor.

# State of New Mexico



## Commissioner of Public Lands

E. S. JOHNNY WALKER  
COMMISSIONER



P. O. BOX 791  
SANTA FE, NEW MEXICO

December 21, 1961

Shell Oil Company  
P. O. Box 1858  
Roswell, New Mexico

Re: First Enlargement to  
Initial Participating  
Area Lower Wolfcamp  
Formation, Henshaw Deep  
Unit, Eddy County, New  
Mexico

Attention: Mr. S. B. Deal

Gentlemen:

The Commissioner of Public Lands approves as of this date the First Enlargement to the Initial Participating Area, Wolfcamp formation for the Henshaw Deep Unit Area, Eddy County, New Mexico.

We are retaining one complete copy and returning to you two approved sets of this enlargement together with two approved copies of the application.

Please furnish us another complete set when this application has been fully approved.

Very truly yours,

A handwritten signature in cursive script, reading "E. S. Walker".

E. S. JOHNNY WALKER  
COMMISSIONER OF PUBLIC LANDS

ESW/mmr/v

encl:

cc: Oil Conservation Commission  
Santa Fe, New Mexico

U. S. Geological Survey  
Roswell, New Mexico



MAIL SERVICE DIVISION SHELL OIL COMPANY

P. O. Box 1858  
Roswell, New Mexico

1962 APR 2 AM 8 25 March 27, 1962

1729

Subject: Henshaw Deep Unit  
Eddy County, New Mexico  
1962 Plan of Development

Oil and Gas Supervisor  
United States Geological Survey  
P. O. Drawer 1857  
Roswell, New Mexico

Commissioner of Public Lands  
State of New Mexico  
State Land Building  
Santa Fe, New Mexico

Oil Conservation Commission  
State of New Mexico  
State Land Building  
Santa Fe, New Mexico

Gentlemen:

For your files and information we attach hereto three fully executed copies of the 1962 Plan of Development for the Henshaw Deep Unit, Eddy County, New Mexico.

Yours very truly,

*R. L. Rankin*

R. L. Rankin  
Division Production Manager

Attachments

PLAN OF DEVELOPMENT  
FOR THE CALENDAR YEAR 1962  
HENSHAW DEEP UNIT (NO. 14-08-001-6453)  
EDDY COUNTY, NEW MEXICO

---

OIL AND GAS SUPERVISOR (6)  
UNITED STATES GEOLOGICAL SURVEY  
P. O. DRAWER 1857  
ROSWELL, NEW MEXICO

COMMISSIONER OF PUBLIC LANDS (5)  
STATE OF NEW MEXICO  
STATE LAND BUILDING  
SANTA FE, NEW MEXICO

OIL CONSERVATION COMMISSION (5)  
STATE OF NEW MEXICO  
STATE LAND BUILDING  
SANTA FE, NEW MEXICO

Gentlemen:

In compliance with Section 10 of the Henshaw Deep Unit Agreement, Shell Oil Company, as Unit Operator, hereby submits for your approval a Plan of Development for the year 1962.

The initial test, Henshaw Deep Unit 1 located in NE/4 NW/4 Section 24-16S-30E, was originally completed as a non-commercial well in the Devonian. The well was recompleted on December 2, 1960, flowing 171 barrels of oil per day from Wolfcamp (originally designated Pennsylvanian) perforations 8822 to 8830 feet. By letter dated January 27, 1961, the Regional Oil and Gas Supervisor for the USGS concurred with the determination that the latter completion constitutes the discovery of a unitized substance in paying quantities in accordance with the terms of the Henshaw Deep Unit Agreement. A 360-acre initial participating area for the discovery well was approved by the Acting Director of the United States Geological Survey on March 31, 1961. The producing formation in this initial participating area was originally listed as Pennsylvanian. However, based on fusulinid control recently obtained from cores in Henshaw Deep Unit 3A, it was determined that all existing wells are now producing from the lower Wolfcamp formation.

Henshaw Deep Unit 2, a 10,000-foot test, located in the SW/4 SE/4 of Section 24-16S-30E was completed April 9, 1961, flowing 263 barrels of oil per day from Pennsylvanian perforations 9124 to 9132 feet. This pay interval proved to be a limited reservoir. Henshaw Deep Unit 2 was subsequently plugged

back to 8870 feet and is currently producing from lower Wolfcamp perforations 8753 to 8763 feet.

Henshaw Deep Unit 3A, located in the NE/4 SW/4 of Section 24-168-30E, was completed November 4, 1961, flowing 136 barrels of oil per day from lower Wolfcamp perforations 8711 to 8740 feet. The Operator proposes to continue exploitation of the lower Wolfcamp pay on 160-acre density until reservoir conditions indicate closer spacing is advisable. It is planned to initiate drilling operations on Henshaw Deep Unit 4 in the SW/4 SW/4 of Section 13-168-30E by December 31, 1961.

During the year 1962, the Unit Operator proposes to drill one additional Pennsylvanian test which will be the 5th well in the Henshaw Deep Unit.

This plan of development shall constitute the drilling obligations of the Unit Operator under the terms of the Henshaw Deep Unit for the period ending December 31, 1962. Before this plan expires, another plan for further development of the Unit Area will be submitted.

It is understood that portions of the Plan of Development herein outlined are dependent upon certain information to be gained prior and subsequent to drilling and, therefore, this Plan of Development may be modified from time to time, with like approval, to meet changing conditions.

SHELL OIL COMPANY  
Unit Operator

By R. L. Rankin  
R. L. Rankin

Approved \_\_\_\_\_ DATE \_\_\_\_\_  
Supervisor, United States Geological Survey

Approved \_\_\_\_\_ DATE \_\_\_\_\_  
Commissioner of Public Lands

Approved R. L. Rankin DATE March 21, 1962  
Oil Conservation Commission

back to 8870 feet and is currently producing from lower Wolfcamp perforations 8753 to 8763 feet.

Henshaw Deep Unit 3A, located in the NE/4 SW/4 of Section 24-16S-30E, was completed November 4, 1961, flowing 136 barrels of oil per day from lower Wolfcamp perforations 8711 to 8740 feet. The Operator proposes to continue exploitation of the lower Wolfcamp pay on 160-acre density until reservoir conditions indicate closer spacing is advisable. It is planned to initiate drilling operations on Henshaw Deep Unit 4 in the SW/4 SW/4 of Section 13-16S-30E by December 31, 1961.

During the year 1962, the Unit Operator proposes to drill one additional Pennsylvanian test which will be the 5th well in the Henshaw Deep Unit.

This plan of development shall constitute the drilling obligations of the Unit Operator under the terms of the Henshaw Deep Unit for the period ending December 31, 1962. Before this plan expires, another plan for further development of the Unit Area will be submitted.

It is understood that portions of the Plan of Development herein outlined are dependent upon certain information to be gained prior and subsequent to drilling and, therefore, this Plan of Development may be modified from time to time, with like approval, to meet changing conditions.

SHELL OIL COMPANY  
Unit Operator

By *R. L. Rankin*  
R. L. Rankin

Approved \_\_\_\_\_ DATE \_\_\_\_\_  
Supervisor, United States Geological Survey

Approved *E. Smalcher* DATE March 12, 1962  
Commissioner of Public Lands

Approved \_\_\_\_\_ DATE \_\_\_\_\_  
Oil Conservation Commission

back to 8870 feet and is currently producing from lower Wolfcamp perforations 8753 to 8763 feet.

Henshaw Deep Unit 3A, located in the NE/4 SW/4 of Section 24-16S-30E, was completed November 4, 1961, flowing 136 barrels of oil per day from lower Wolfcamp perforations 8711 to 8740 feet. The Operator proposes to continue exploitation of the lower Wolfcamp pay on 160-acre density until reservoir conditions indicate closer spacing is advisable. It is planned to initiate drilling operations on Henshaw Deep Unit 4 in the SW/4 SW/4 of Section 13-16S-30E by December 31, 1961.

During the year 1962, the Unit Operator proposes to drill one additional Pennsylvanian test which will be the 5th well in the Henshaw Deep Unit.

This plan of development shall constitute the drilling obligations of the Unit Operator under the terms of the Henshaw Deep Unit for the period ending December 31, 1962. Before this plan expires, another plan for further development of the Unit Area will be submitted.

It is understood that portions of the Plan of Development herein outlined are dependent upon certain information to be gained prior and subsequent to drilling and, therefore, this Plan of Development may be modified from time to time, with like approval, to meet changing conditions.

SHELL OIL COMPANY  
Unit Operator

By *R. L. Rankin*  
R. L. Rankin

Approved *Carl C. Trapp*  
Acting Supervisor, United States Geological Survey  
Subject to later approval by the  
appropriate State officials.

DATE MAR 9 1962

Approved \_\_\_\_\_  
Commissioner of Public Lands

DATE \_\_\_\_\_

Approved \_\_\_\_\_  
Oil Conservation Commission

DATE \_\_\_\_\_

OIL CONSERVATION COMMISSION

P. O. BOX 871  
SANTA FE, NEW MEXICO

129

March 21, 1962

Shell Oil Company  
P. O. Box 1858  
Roswell, New Mexico

Attention: Mr. R. L. Rankin

Re: 1962 Plan of Development  
Henshaw Deep Unit, Eddy  
County, New Mexico

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the 1962 Plan of Development for the Henshaw Deep Unit, Eddy County, New Mexico, subject to like approval by the United States Geological Survey and the Commissioner of Public Lands of the State of New Mexico.

Two approved copies of the plan are returned herewith.

Very truly yours,

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

ALP/JEK/ig

cc: U. S. Geological Survey - Roswell  
State Land Office - Santa Fe

ILLEGIBLE



March 12, 1962

Shell Oil Company  
P. O. Box 1858  
Roswell, New Mexico

Re: Proposed Plan of  
Development, 1962,  
Henshaw Deep Unit  
Eddy County, New Mexico

Attention: Mr. R. L. Rankin

Gentlemen:

The Commissioner of Public Lands has of this  
date approved the 1962 Plan of Development for the  
Henshaw Deep Unit Area, Eddy County, New Mexico.

We are enclosing three approved copies.

Very truly yours,

E. S. JOHNNY WALKER  
COMMISSIONER OF PUBLIC LANDS

BY:

MARIAN M. RHEA, SUPERVISOR  
UNIT DIVISION

ESW/

cc: Oil Conservation Commission  
Santa Fe, New Mexico

U. S. Geological Survey  
Roswell, New Mexico

ILLEGIBLE



# SHELL OIL COMPANY

P. O. Box 1858  
Roswell, New Mexico

December 14, 1961

Subject: Proposed Plan of Development, 1962  
Henshaw Deep Unit  
Eddy County, New Mexico

Oil and Gas Supervisor  
United State Geological Survey  
P. O. Drawer 1857  
Roswell, New Mexico

Commissioner of Public Lands  
State of New Mexico  
State Land Building  
Santa Fe, New Mexico

Oil Conservation Commission  
State of New Mexico  
State Land Building  
Santa Fe, New Mexico

Gentlemen:

Attached are copies of a proposed Plan of Development on the Henshaw Deep Unit, Eddy County, New Mexico, for the calendar year 1962.

If this Plan of Development meets with your approval, please return two copies for our file.

Yours very truly,

A handwritten signature in dark ink, appearing to read 'R. L. Rankin'. The script is fluid and cursive, with a prominent initial 'R'.

R. L. Rankin  
Division Production Manager

Attachment

PLAN OF DEVELOPMENT  
FOR THE CALENDAR YEAR 1962  
HENSHAW DEEP UNIT (NO. 14-08-001-6453)  
EDDY COUNTY, NEW MEXICO

---

OIL AND GAS SUPERVISOR (6)  
UNITED STATES GEOLOGICAL SURVEY  
P. O. DRAWER 1857  
ROSWELL, NEW MEXICO

COMMISSIONER OF PUBLIC LANDS (5)  
STATE OF NEW MEXICO  
STATE LAND BUILDING  
SANTA FE, NEW MEXICO

OIL CONSERVATION COMMISSION (5)  
STATE OF NEW MEXICO  
STATE LAND BUILDING  
SANTA FE, NEW MEXICO

Gentlemen:

In compliance with Section 10 of the Henshaw Deep Unit Agreement, Shell Oil Company, as Unit Operator, hereby submits for your approval a Plan of Development for the year 1962.

The initial test, Henshaw Deep Unit 1 located in NE/4 NW/4 Section 24-16S-30E, was originally completed as a non-commercial well in the Devonian. The well was recompleted on December 2, 1960, flowing 171 barrels of oil per day from Wolfcamp (originally designated Pennsylvanian) perforations 8822 to 8830 feet. By letter dated January 27, 1961, the Regional Oil and Gas Supervisor for the USGS concurred with the determination that the latter completion constitutes the discovery of a unitized substance in paying quantities in accordance with the terms of the Henshaw Deep Unit Agreement. A 360-acre initial participating area for the discovery well was approved by the Acting Director of the United States Geological Survey on March 31, 1961. The producing formation in this initial participating area was originally listed as Pennsylvanian. However, based on fusulinid control recently obtained from cores in Henshaw Deep Unit 3A, it was determined that all existing wells are now producing from the lower Wolfcamp formation.

Henshaw Deep Unit 2, a 10,000-foot test, located in the SW/4 SE/4 of Section 24-16S-30E was completed April 9, 1961, flowing 263 barrels of oil per day from Pennsylvanian perforations 9124 to 9132 feet. This pay interval proved to be a limited reservoir. Henshaw Deep Unit 2 was subsequently plugged

back to 8870 feet and is currently producing from lower Wolfcamp perforations 8753 to 8763 feet.

Henshaw Deep Unit 3A, located in the NE/4 SW/4 of Section 24-16S-30E, was completed November 4, 1961, flowing 136 barrels of oil per day from lower Wolfcamp perforations 8711 to 8740 feet. The Operator proposes to continue exploitation of the lower Wolfcamp pay on 160-acre density until reservoir conditions indicate closer spacing is advisable. It is planned to initiate drilling operations on Henshaw Deep Unit 4 in the SW/4 SW/4 of Section 13-16S-30E by December 31, 1961.

During the year 1962, the Unit Operator proposes to drill one additional Pennsylvanian test which will be the 5th well in the Henshaw Deep Unit.

This plan of development shall constitute the drilling obligations of the Unit Operator under the terms of the Henshaw Deep Unit for the period ending December 31, 1962. Before this plan expires, another plan for further development of the Unit Area will be submitted.

It is understood that portions of the Plan of Development herein outlined are dependent upon certain information to be gained prior and subsequent to drilling and, therefore, this Plan of Development may be modified from time to time, with like approval, to meet changing conditions.

SHELL OIL COMPANY  
Unit Operator

By *R. L. Rankin*  
R. L. Rankin

Approved \_\_\_\_\_ DATE \_\_\_\_\_  
Supervisor, United States Geological Survey

Approved \_\_\_\_\_ DATE \_\_\_\_\_  
Commissioner of Public Lands

Approved *[Signature]* DATE March 21, 1962  
Oil Conservation Commission



# SHELL OIL COMPANY

P. O. Box 1858  
Roswell, New Mexico

Re: Henshaw Deep Unit No. 14-08-001-6453  
Eddy County, New Mexico  
First Enlargement to Initial  
Participating Area

Director  
United States Geological Survey  
Department of the Interior  
Washington 25, D. C.

Through:

Regional Director  
United States Geological Survey  
P. O. Drawer 1857  
Roswell, New Mexico

Commissioner of Public Lands  
State of New Mexico  
State Land Building  
Santa Fe, New Mexico

Oil Conservation Commission  
State of New Mexico  
State Land Building  
Santa Fe, New Mexico

Gentlemen:

In compliance with the requirements of Section 11 of the Henshaw Deep Unit Agreement, No. 14-08-001-6453, approved December 3, 1959, Shell Oil Company, as Unit Operator, submits Schedule I, attached hereto, and requests that the land described therein be approved as constituting the Initial Participating Area and the First Enlargement of the Initial Participating Area. It is further requested that the geological formation from which oil production is obtained in the Initial Participating Area, as herein enlarged, be redesignated Lower Wolfcamp on the basis of new paleontological information from Well No. 3A.

The Initial Participating Area, effective December 2, 1960, was approved March 31, 1961, and encompassed the following area:

The NW/4 and W/2 NE/4 of Section 24 and the SW/4 SE/4  
and S/2 SW/4 of Section 13, All in T-16-S, R-30-E, N.M.P.M.

The land described, containing an aggregate 360 acres consists of the 40-acre subdivision upon which Unit Well No. 1 is located together with eight 40-acre subdivisions surrounding the well. Unit Well No. 1 was recompleted December 2, 1960, from a non-commercial Devonian gas reservoir to the Lower Wolfcamp (previously designated Upper Pennsylvanian) formation and was officially determined to constitute a discovery of unitized substances in paying quantities.

Unit Well No. 2, located in the SW/4 SE/4 of Section 24, T-16-S, R-30-E, N.M.P.M., was initially completed on April 9, 1961, flowing at a daily rate of 263 barrels of oil from a Pennsylvanian interval, 9124 to 9132 feet. When this reservoir proved to be of limited extent, the well was recompleted on June 21, 1961, from the Lower Wolfcamp interval, 8753 to 8763 feet. On initial test Unit Well No. 2 flowed at a daily rate of 127 barrels of oil and 34 barrels of water with a gas-oil ratio of 1770 cubic feet per barrel and a flowing tubing pressure of 875 pounds per square inch.

During a recent test the well flowed at a daily rate of 123 barrels of oil and 2 barrels of water on a 10/64-inch choke with flowing tubing pressure 1000 pounds per square inch and gas-oil ratio of 1624 cubic feet per barrel. As of November 1, 1961, the well had produced a total of some 15,310 barrels of oil from the Lower Wolfcamp reservoir accompanied by a pressure decline of 270 pounds per square inch.

On the attached cross section it will be noted that while the porous intervals producing from Unit Wells Nos. 1 and 2 are not correlative in precise detail, they obviously are closely related within a single rock unit and can be considered a common reservoir or source of supply. The oil pay thickness in each of the two wells is relatively thin; however, well production performance as compared to subsurface pressure decline is indicative of a reservoir with excellent lateral communication. Unit Well No. 1 has suffered no measurable change in reservoir pressure since completion and after the production of approximately 33,300 barrels of oil. Thus, it is predicted that the existing wells will effectively drain relatively large reservoir areas (in excess of 160 acres) and should be considered commercial completions on the basis of anticipated ultimate recovery.

The attached plat reflects the most recent structural interpretation based on seismos and subsurface data from the existing wells. Insufficient structural relief, however, has been noted in these wells to permit a firm delineation of the productive area. Therefore, until additional geological information is acquired through further development, it is proposed that the First Enlargement of the Initial Participating Area be made by adding an aggregate 360-acres consisting of the 40-acre subdivision upon which Unit Well No. 2 is located and the eight 40-acre subdivisions surrounding the well. This will create a participating area of 720 acres described as follows:

The NW/4, SE/4, W/2 NE/4 and E/2 SW/4 of Section 24,  
the S/2 SW/4 and SW/4 SE/4 of Section 13 and the N/2  
NE/4 and NE/4 NW/4 of Section 25, all in T-16-S,  
R-30-E, N.M.P.M.

The land described above is unitized and is all the land that can presently be regarded as being reasonably proved or indicated to be productive of unitized substances in paying quantities.


Designation of the reservoir producing in Unit Well No. 1 as Upper Pennsylvanian was based originally on wide regional correlation of electrical logs and represented the best available estimate as to the Pennsylvanian-Wolfcamp contact. Subsequent coring in Unit Well No. 3A has not permitted the fixing of the formational contact; however, it has proved beyond question that within Well No. 3A the Wolfcamp formation extends at least to a depth of 8974 feet, based on excellent fusilinid control. In order to provide more accurate and consistent reservoir nomenclature, it is suggested that the name Lower Wolfcamp be applied to the productive zone of Initial Participating Area as well as the first enlargement.

In support of this application we are submitting the following exhibits:

1. A structural map showing the Henshaw Deep Unit, the Initial Participating Area for the Lower Wolfcamp formation and the proposed First Enlargement of the Initial Participating Area.
2. Schedule I showing the participating percentage of each lease included or partially included in the enlarged participating area.
3. A cross-section showing correlation of the Lower Wolfcamp producing intervals between the Initial Participating Area and the First Enlargement of the Initial Participating Area and indicating results of drill stem tests run in existing wells.
4. Electrical logs indicating formation tops.
5. Summary of production and reservoir pressure data.

The Unit operator respectfully requests your approval of this application for First Enlargement of the Initial Participating Area of the Henshaw Deep Unit to be effective June 1, 1961, the first day of the month in which Unit Well No. 1 was successfully completed in the Lower Wolfcamp formation.


SHELL OIL COMPANY

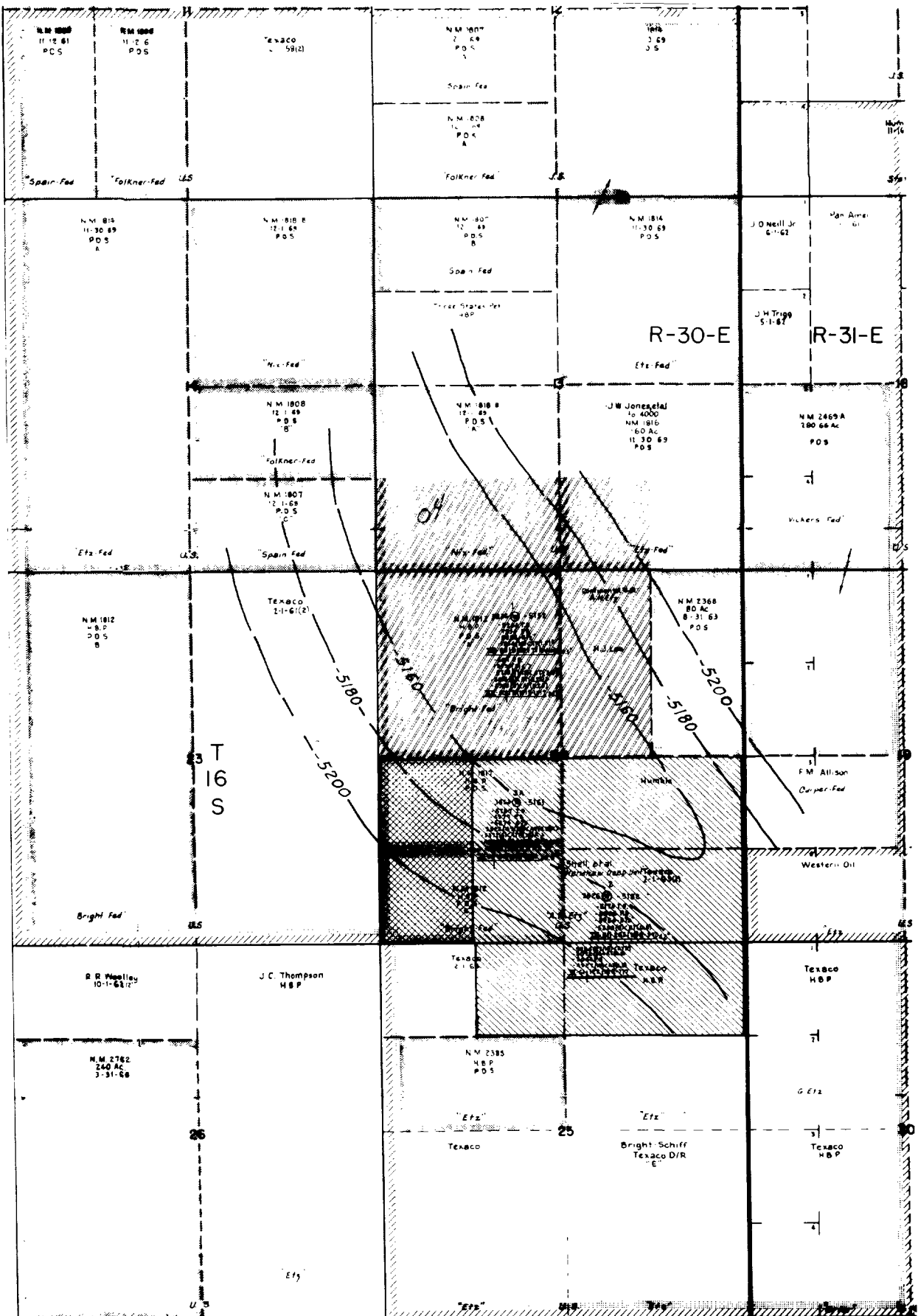
By:   
Division Production Superintendent

Attachments

Approved \_\_\_\_\_ DATE \_\_\_\_\_  
Supervisor, United States Geological Survey

Approved \_\_\_\_\_ DATE \_\_\_\_\_  
Commissioner of Public Lands

Approved  DATE 12  
Oil Conservation Commission



# LEGEND

- Unit Boundary
- Working Interest Boundary
- Initial Participating Area
- First Enlargement
- Second Enlargement

## HENSHAW DEEP UNIT Eddy County, New Mexico

Contours on Top of Penn. Log Marker

SCALE: 1" = 300'



Schedule I

First Enlargement of the Initial Lower Wolfcamp Participating Area  
Henshaw Deep Unit, Eddy County, New Mexico  
Schedule Showing the Percentage and Kind of Ownership  
of Oil and Gas Interests in the Participating Area

Tract No.	Description of Land	No. of Acres	Federal Serial No.	Lessee of Record	Ownership	Percentage	Percentage Committed	Percentage Participation
3	Sec. 24: NW/4, SE/4 SW/4 T-16-S, R-30-E, N.M.P.M.	200	LC-029424	Bright, Schiff & Kennedy	Royalty: USA Working Interest: Shell Oil Company Overriding Royalty Interest:	12.50000 81.25000 6.25000	12.50000 81.25000 <u>4.66667</u> <u>98.41667</u>	27.77777
11	Sec. 24: NE/4 SW/4 T-16-S, R-30-E, N.M.P.M.	40	LC-063925	Texaco Inc.	Royalty: USA Working Interest Shell Oil Company Overriding Royalty Interest	12.50000 82.50000 5.00000	12.50000 82.50000 <u>1.87500</u> <u>96.87500</u>	5.55556
14	Sec. 13: S/2 SW/4 T-16-S, R-30-E, N.M.P.M.	80	LC-063928-B	Shell Oil Company	Royalty: USA Working Interest: Shell Oil Company Overriding Royalty Interest:	12.50000 82.50000 5.00000	12.50000 82.50000 <u>5.00000</u> <u>100.00000</u>	11.11111
15	Sec. 13: SW/4 SE/4 T-16-S, R-30-E, N.M.P.M.	40	LC-063932	J. W. Jones et al	Royalty: USA Working Interest: Shell Oil Company Overriding Royalty Interest	12.50000 82.50000 5.00000	12.50000 82.50000 <u>3.00000</u> <u>98.00000</u>	5.55556

<u>Tract No.</u>	<u>Description of Land</u>	<u>No. of Acres</u>	<u>Federal Serial No.</u>	<u>Lessee of Record</u>	<u>Ownership</u>	<u>Percentage</u>	<u>Percentage Committed</u>	<u>Percentage Participation</u>
18	Sec. 24: W/2 NE/4 T-16-S, R-30-E, N.M.P.M.	80	LC-064637	H. J. Loe	Royalty: USA Working Interest: Texaco Inc. Overriding Royalty Interest:	12.50000  84.50000 3.00000	12.50000  84.50000 <u>3.00000</u> <u>100.00000</u>	11.11111
20	Sec. 24: S/2 SE/4 Sec. 25: NE/4 NW/4 T-16-S, R-30-E, N.M.P.M.	120	NM-016802	Texaco Inc.	Royalty: USA Working Interest: Texaco Inc. Overriding Royalty Interest:	12.50000  87.50000 None	12.50000  87.50000 <u>100.00000</u>	16.66667
23	Sec. 24: N/2 SE/4 T-16-S, R-30-E, N.M.P.M.	80	LC-029137	Humble O. & R. Co.	Royalty: USA Working Interest: Humble O. & R. Co. Overriding Royalty Interest:	12.50000  87.50000 None	12.50000  87.50000 <u>100.00000</u>	11.11111
26	Sec. 25: N/2 NE/4 T-16-S, R-30-E, N.M.P.M.	80	NM-07781	Texaco Inc.	Royalty: USA Working Interest: Texaco Inc. Overriding Royalty Interest:	12.50000  87.50000 None	12.50000  87.50000 <u>100.00000</u>	11.11111