

September 5, 1961

Humble Oil & Refining Company
Southwest Region
P. O. Box 1597
Roswell, New Mexico

Re: Ninth Expansion Abo
Participating Area,
Chalk Bluff Draw Unit,
Eddy County, New Mexico

Attention: Mr. Robert J. Walker, Jr.

Gentlemen:

The Commissioner of Public Lands approved as of September 5, 1961, the Ninth Participating Area for the ABO Formation, Chalk Bluff Draw Unit, Eddy County, New Mexico.

This approval is subject to like approval by the United States Geological Survey only as the Oil Conservation approved this Expansion as of September 1, 1961.

We are returning ten approved copies, please furnish us another fully approved copy.

Very truly yours,

E. S. JOHNNY WALKER
COMMISSIONER OF PUBLIC LANDS

ESW/mmr/v

Encl: 10

cc: U.S. Geological Survey, Roswell
Oil Conservation Commission, Santa Fe

OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

Handwritten initials

September 1, 1961

Humble Oil & Refining Company
Southwest Region
P. O. Box 1597
Roswell, New Mexico

Attention: Mr. Robert J. Walker, Jr.

Re: Ninth Expansion Abo
Participating Area,
Chalk Bluff Draw Unit,
Eddy County, New Mexico

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Ninth Expansion of the Abo Participating Area for the Chalk Bluff Draw 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.

Eleven approved copies of the application are being forwarded to the Commissioner of Public Lands.

Very truly yours,

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

ALP/JEK/ig

cc: United States Geological Survey - Roswell

Commissioner of Public Lands - Santa Fe

In re: Chalk Bluff Draw Unit Area
Eddy County, New Mexico

TO: Director
United States Geological Survey

Commissioner of Public Lands
State of New Mexico

New Mexico
Oil Conservation Commission

APPLICATION FOR APPROVAL OF NINTH
EXPANSION OF INITIAL PARTICIPATING AREA
CHALK BLUFF DRAW UNIT AREA FOR THE ABO REEF FORMATION

Comes the Humble Oil & Refining Company, as Unit Operator for the Chalk Bluff Draw Unit Agreement approved by the New Mexico Oil Conservation Commission on October 13, 1955, by the Commissioner of Public Lands of the State of New Mexico on November 10, 1955, and by the Director of the United States Geological Survey on December 29, 1955, and pursuant to the provisions of said Unit Agreement respectfully submits for the approval of the Director, Commissioner and Commission the ninth revision of the initial participating area for the Abo Reef formation as hereinafter set forth.

1. The initial participating area, together with the first through the seventh expansions and the application heretofore made for the eighth expansion include the following described lands within the unit area:

Township 18 South, Range 27 East, N.M.P.M.

Section 4: Lot 18
Section 8: $E\frac{1}{2}SE\frac{1}{4}$
Section 9: $E\frac{1}{2}W\frac{1}{2}$, $W\frac{1}{2}SW\frac{1}{4}$, $SW\frac{1}{4}NW\frac{1}{4}$
Section 16: $NW\frac{1}{4}$, $N\frac{1}{2}SW\frac{1}{4}$, $SE\frac{1}{4}SW\frac{1}{4}$
Section 17: $S\frac{1}{2}NE\frac{1}{4}$

Containing 758.43 acres, more or less.

2. That during the month of June, 1961, two additional wells were completed capable of producing oil and gas from the Abo Reef formation offsetting the participating area as heretofore approved and proposed to be expanded by application for the eighth expansion now pending. The two additional wells are located upon the $N\frac{1}{2}SE\frac{1}{4}$ Section 17, Township 18 South, Range 27 East, N.M.P.M. and are more particularly described as follows:

Abo Chalk Bluff Draw Unit No. 24

Location: 2310' FSL & 1650' FEL, Section 17, T-18-S, R-27-E
Total Depth: 5600'
Perforated Intervals: 5478-5490', 5514-5524'
Net Pay: 86'
Initial Potential: 120 BO (7 hr. Pot. Test)
Completed Date: June 30, 1961

Abo Chalk Bluff Draw Unit No. 25

Location: 2314' FSL & 330' FEL, Section 17, T-18-S, R-27-E
Total Depth: 5602'
Perforated Intervals: 5316-5322', 5382-5402', 5446-5458'
Net Pay: 135'
Initial Potential: 81 BO / 21 BW (12 hr. Pot. Test)
Completed Date: June 21, 1961

It is proposed that on account of the above well that the $N\frac{1}{2}SE\frac{1}{4}$ Section 17, Township 18 South, Range 27 East, N.M.P.M., be added to the participating area as heretofore approved, effective June 1, 1961, being the first of the month during which said wells were completed.

That there is attached hereto, made a part hereof and for purposes of identification marked Exhibit "B" - 9, a schedule of participation for the ninth expanded participating area effective as of June 1, 1961, and which shows the percentages of participation by the owners of royalty, overriding royalties and working interests.

3. That there is attached hereto, made a part hereof and for purposes of identification marked Exhibit "A", a map of the Chalk Bluff Draw Unit Area showing the character of the lands, the ownership of the oil and gas leases within the unit area, and the participating area as expanded and proposed to be expanded and also the location of the wells which have been drilled within the unit area.

4. That there is also attached hereto, made a part hereof and for purposes of identification marked Exhibit "C", a geological report prepared by C. V. Roberts, Area Geologist, together with an Isopachous Map of the Western portion of the Empire Abo Field which shows the relationship of the additional land to be included in the participating area by reason of the proposed expansion to the development of the Empire Abo Field to date and which indicates that said lands are reasonably proven to be productive of oil and gas in paying quantities from the Abo Reef Formation.

WHEREFORE, applicant respectfully requests that the ninth proposed expansion of the initial participating area as outlined hereinabove be approved by the Commissioner of Public Lands of the State of New Mexico, the New Mexico Oil Conservation Commission and the Director of the United States Geological Survey.

Respectfully submitted,

Attest:

Margaret W. Hatch
Assistant Secretary

HUMBLE OIL & REFINING COMPANY

By J. H. Galloway
J. H. Galloway
General Manager
Southwest Region
Operator

APPROVED	
Desc.	
Acreage	
Int.	
Form	CEK
Asst.	
Prod.	
Trade	HW

HERVEY, DOW & HINKLE
By [Signature]
Attorneys for
Humble Oil & Refining Company

APPROVED this the 1st day of September, 1961

A. L. Patten, Jr.
Secretary-Director
New Mexico Oil Conservation Commission

APPROVED this the _____ day of _____, 1961

Commissioner of Public Lands

APPROVED this the _____ day of _____, 1961

Director
United States Geological Survey

Drawer 1857
Roswell, New Mexico

August 24, 1961

Humble Oil and Refining Company
P. O. Box 1287
Roswell, New Mexico

Attention: Mr. Robert J. Walker, Jr.

Gentlemen:

Your undated application for the eighth revision of the Abo Reef participating area for the Chalk Bluff Draw unit agreement, Eddy County, New Mexico, was approved August 15, 1961, by the Acting Director of the Geological Survey, effective as of May 1, 1961.

Five approved copies of the 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,

(Sgd.) CARL C. TRAYWICK

CARL C. TRAYWICK
Acting Oil and Gas Supervisor

Copy to: Washington (ltr only)
Artesia (w/cy of appln.)
BLM-Santa Fe (w/cy of appln.)
— NMCCC, Santa Fe (ltr only)
Comm. Pub. Lands, Santa Fe (ltr only)

**In Reply Refer
to Unit Division**

August 11, 1961

**Humble Oil & Refining Company
P. O. Box 1597
Roswell, New Mexico**

**Re: 1961 Plan of Development
Pennsylvanian Bend
Participating Area,
Chalk Bluff Draw Unit,
Eddy County, New Mexico**

Attention: Mr. Robert J. Walker, Jr.

Gentlemen:

The Commissioner of Public Lands has approved, as of August 11, 1961, your 1961 Plan of Development dated April 12, 1961, for the Pennsylvanian Bend formation, Chalk Bluff Draw Unit Area, Eddy County, New Mexico.

We are retaining only one copy as we are using a copy we had in our file.

Very truly yours,

**E. S. JOHNNY WALKER
COMMISSIONER OF PUBLIC LANDS**

ESW/mmr/v

**cc: Oil & Gas Supervisor
U. S. Geological Survey
Roswell, New Mexico**

**Oil Conservation Commission
Santa Fe, N. M.**

Drawer 1857
Roswell, New Mexico

August 7, 1961

Humble Oil and Refining Company
P. O. Box 1597
Roswell, New Mexico

Gentlemen:

Your 1961 plan of development dated April 12, 1961, for the Pennsylvanian Bend formation, Chalk Bluff Draw unit area, Eddy County, New Mexico, which proposes no additional wells, has been approved on this date subject to like approval by the appropriate State official.

Two copies of the approved plan are enclosed.

Very truly yours,

(Orig. Sgd.) JOHN A. ANDERSON

JOHN A. ANDERSON
Regional Oil and Gas Supervisor

Enclosures

Copy to: Washington (w/cy of plan)
Artesia (w/cy of plan)
NMOCC, Santa Fe (ltr only) ✓
Com. of Pub. Lands, Santa Fe (ltr only)

HUMBLE OIL & REFINING COMPANY

SOUTHWEST REGION

P. O. BOX 1597

ROSWELL, NEW MEXICO

July 27, 1961

Case # 960

In re: Application for Approval of Ninth
Enlargement Abo Participating Area
Chalk Bluff Draw Unit
Eddy County, New Mexico

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

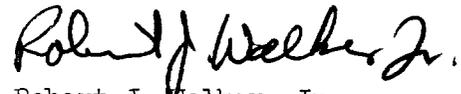
Gentlemen:

Enclosed we are forwarding to you 12 copies of our Application for Approval of Ninth Expansion of Initial Participating Area, Chalk Bluff Draw Unit Area for the Abo Reef Formation for your consideration and approval.

Upon your approval, we would appreciate your forwarding all 12 copies to the Commissioner of Public Lands for his consideration and approval. We are by copy of this letter forwarding the Commissioner our draft No. 6F-4291 in the amount of \$12.00 for the filing fees. Upon the Commissioner's approval of this enlargement, we request that at least 11 copies be returned to us for filing with the U.S.G.S. Upon final approval by the U.S.G.S. we will return a fully approved copy to the Commissioner for his permanent file and record.

If you should have any further question or if we can be of any further assistance in this regard, please advise.

Yours very truly,



Robert J. Walker, Jr.

RJW:fd

Encls.

cc: Commissioner of Public Lands, w/encl.
P. O. Box 791, Santa Fe, New Mexico



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

July 6, 1961

Humble Oil and Refining Company
P.O. Box 1397
Roswell, New Mexico

Gentlemen:

Your plan of development for 1961, dated April 12, 1961, for the Abo Formation Chalk Bluff Draw unit area, Eddy County, New Mexico, which proposes the drilling of eight Abo formation wells, has been approved on this date. The New Mexico Oil Conservation Commission and the Commissioner of Public Lands approved the plan on April 21 and April 24, 1961, respectively.

Eight copies of the approved plan are enclosed.

Very truly yours,

(Orig. Sgd.) JOHN A. ANDERSON

JOHN A. ANDERSON
Regional Oil and Gas Supervisor

Copy to: ~~Washington~~ (w/cy of plan)
Artesia (w/cy of plan)
NMOCC, Santa Fe (ltr. only)

**In Reply: Refer
to Unit Division**

July 6, 1961

**Humble Oil & Refining Company
P. O. Box 1597
Roswell, New Mexico**

**Re: Eighth Expansion Abo
Participating Area,
Chalk Bluff Draw Unit,
Eddy County, New Mexico**

Attention: Mr. Robert J. Walker, Jr.

Gentlemen:

The Commissioner of Public Lands has approved as of July 6, 1961, the Eighth Expansion of the Abo Participating Area for the Chalk Bluff Draw Unit, Eddy County, New Mexico. This approval is subject to like approval by the United States Geological Survey and the Oil Conservation Commission.

Nine approved copies of this application are enclosed.

Very truly yours,

**E. S. JOHNNY WALKER
COMMISSIONER OF PUBLIC LANDS**

**By:
Ted Bilberry, Supervisor
Oil & Gas Division**

ESW/amr/v

enc: 9

**cc: U. S. Geological Survey
Oil Conservation Commission**

OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

July 3, 1961

Humble Oil & Refining Company
P. O. Box 1597
Roswell, New Mexico

Attention: Mr. Robert J. Walker, Jr.

Re: Eighth Expansion Abo
Participating Area Chalk
Bluff Draw Unit Eddy
County, New Mexico

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Eighth Expansion of the Abo Participating Area for the Chalk Bluff Draw 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.

Eleven approved copies of the application are being forwarded to the Commissioner of Public Lands.

Very truly yours,

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

ALP/JEK/ig

cc: US Geological Survey - Roswell
Commissioner of Public Lands - Santa Fe

HUMBLE OIL & REFINING COMPANY

SOUTHWEST REGION

P. O. BOX 1597

ROSWELL, NEW MEXICO

June 29, 1961

In re: Application for Approval of Eighth
Expansion of Initial Participating
Area, Chalk Bluff Draw Unit Area
for the Abo Reef Formation

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

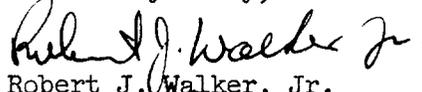
Gentlemen:

Enclosed herewith we are forwarding to you 12 copies of application for approval of eighth expansion of initial participating area, Chalk Bluff Draw Unit area, for the Abo reef formation, for your approval and further handling. You will note that the Chalk Bluff Draw Unit No. 4-P, previously called Chalk Bluff Draw Unit "C" No. 1, completed in the Pennsylvanian Bend formation, has now been dually completed to produce from the Abo formation also. The participating area is being enlarged to include the SW $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 17, Township 18 South, Range 27 East, on which the aforementioned well is located.

Upon your approval of the application, we would appreciate your forwarding all copies to the Commissioner of Public Lands for his approval. By copy of this letter we are forwarding the Commissioner our Draft No. 6F-4576 in the amount of \$12.00 to cover the filing fees. Upon the Commissioner's approval, we will appreciate his returning to this office at least 11 copies of the application in order that we might file it with the U.S.G.S.

If you should have any further question, or if we can be of any further assistance in this regard, please advise.

Yours very truly,



Robert J. Walker, Jr.

RJW/dm
Encls.

cc: Commissioner of Public Lands
Santa Fe, New Mexico

United States Geological Survey
Roswell, New Mexico

In re: Chalk Bluff Draw Unit Area
Eddy County, New Mexico

TO: Director
United States Geological Survey

Commissioner of Public Lands
State of New Mexico

New Mexico
Oil Conservation Commission

M
C
J

APPLICATION FOR APPROVAL OF EIGHTH
EXPANSION OF INITIAL PARTICIPATING AREA
CHALK BLUFF DRAW UNIT AREA FOR THE ABO REEF FORMATION

Comes the Humble Oil & Refining Company, as Unit Operator for the Chalk Bluff Draw Unit Agreement approved by the New Mexico Oil Conservation Commission on October 13, 1955, by the Commissioner of Public Lands of the State of New Mexico on November 10, 1955, and by the Director of the United States Geological Survey on December 29, 1955, and pursuant to the provisions of said Unit Agreement respectfully submits for the approval of the Director, Commissioner and Commission the eighth revision of the initial participating area for the Abo Reef formation as hereinafter set forth.

1. The initial participating area, together with the first through the seventh expansions include the following described lands within the unit area:

Township 18 South, Range 27 East, N.M.P.M.

Section 4: Lot 18

Section 8: E $\frac{1}{2}$ SE $\frac{1}{4}$

Section 9: E $\frac{1}{2}$ W $\frac{1}{2}$, W $\frac{1}{2}$ SW $\frac{1}{4}$, SW $\frac{1}{4}$ NW $\frac{1}{4}$

Section 16: NW $\frac{1}{4}$, N $\frac{1}{2}$ SW $\frac{1}{4}$, SE $\frac{1}{4}$ SW $\frac{1}{4}$

Section 17: SE $\frac{1}{4}$ NE $\frac{1}{4}$

Containing 718.43 acres, more or less.

2. That during the month of May, 1961, the Chalk Bluff Draw Unit No. 4-P, previously called Chalk Bluff Draw Unit "C" No. 1, was dually completed, capable of producing oil and gas from the Abo Reef formation offsetting the participating area as heretofore approved. The well is located upon the SW $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 17, Township 18 South, Range 27 East, N.M.P.M., and is more particularly described as follows:

Abo Chalk Bluff Draw Unit No. 4-P

Location: 1980' FNL & EL, Section 17, T-18-S, R-27-E
Total Depth: 9850'
Perforated Intervals: 5393-5400', 5408-5426', 5446-5459'
Net Pay: 72'
Initial Potential: 103 BOPD / 93 BWPD (13-hr. Pot. Test)
Completed Date: May 14, 1961

It is proposed that on account of the above well that the SW $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 17, Township 18 South, Range 27 East, N.M.P.M., be added to the participating area as heretofore approved, effective May 1, 1961, being the first of the month during which said well was dually completed.

That there is attached hereto, made a part hereof and for purposes of identification marked Exhibit "B" - 8, a schedule of participation for the eighth expanded participating area effective as of May 1, 1961, and which shows the percentages of participation by the owners of royalty, overriding royalties and working interests.

3. That there is attached hereto, made a part hereof and for purposes of identification marked Exhibit "A", a map of the Chalk Bluff Draw Unit Area showing the character of the lands, the ownership of the oil and gas leases within the unit area, and the participating area as expanded and proposed to be expanded and also the location of the wells which have been drilled within the unit area.

4. That there is also attached hereto, made a part hereof and for purposes of identification marked Exhibit "C", a geological report prepared by C. V. Roberts, Area Geologist, together with an Isopachous Map of the Western portion of the Empire Abo Field which shows the relationship of the additional land to be included in the participating area by reason of the proposed expansion to the development of the Empire Abo Field to date and which indicates that said lands are reasonably proven to be productive of oil and gas in paying quantities from the Abo Reef Formation.

WHEREFORE, applicant respectfully requests that the eighth proposed expansion of the initial participating area as outlined hereinabove be approved

by the Commissioner of Public Lands of the State of New Mexico, the New Mexico Oil Conservation Commission and the Director of the United States Geological Survey.

Attest:-

Margaret W. Hatch
Assistant Secretary

Respectfully submitted,

HUMBLE OIL & REFINING COMPANY

By *J. H. Galloway*
J. H. Galloway
General Manager
Southwest Region
Operator

APPROVED	
Desc.	
Acres	
Int.	
Form	<i>CPK</i>
Trade	<i>RW</i>

TRADE O.K.

[Signature]

HERVES, DOW & HINKLE

By *[Signature]*
Attorneys for
Humble Oil & Refining Company

APPROVED this the 3rd day of July, 1961
[Signature]
Secretary-Director
New Mexico Oil Conservation Commission

APPROVED this the ____ day of _____, 1961

Commissioner of Public Lands

APPROVED this the ____ day of _____, 1961

Director
United States Geological Survey

May 19, 1961

Humble Oil and Refining Company
P. O. Box 1597
Roswell, New Mexico

Re: 1961 Plan of Development
Pennsylvanian Bend Partici-
pating Area, Chalk Bluff
Draw Unit, Eddy County,
New Mexico

Attention: Mr. Robert J. Walker, Jr.

Gentlemen:

We are returning to you twelve copies of the above designated Plan of Development.

We believe that there should be further exploration within the unit in the Pennsylvanian Bend or an enlargement of the present participating area.

The Plan of Development is being returned to you unapproved. Another 1961 Plan of Development providing for further development of the Pennsylvanian Bend should be submitted at your earliest convenience.

Very truly yours,

E. S. JOHNNY WALKER
COMMISSIONER OF PUBLIC LANDS

ESW/mmc/s
cc:

John A. Anderson
Regional Oil & Gas Supervisor
U. S. Geological Survey
Roswell, New Mexico

**Humble Oil and Refining Company
P. O. Box 1597
Roswell, New Mexico**

**May 19, 1961
Page (2).**

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



IN REPLY REFER TO:

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

May 16, 1961

Humble Oil and Refining Company
P.O. Box 1287
Roswell, New Mexico

Gentlemen:

Your undated application for the seventh revision of the Abo Reef participating area for the Chalk Bluff Draw Unit agreement, Eddy County, New Mexico, was approved May 2, 1961, by the Acting Director of the Geological Survey, effective as of January 1, 1961.

Five approved copies of the 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,

EDWIN M. THOMASSON
Acting Regional Oil and Gas Supervisor

Copy to: Washington (ltr. only)
Artesia (w.cy of appln)
BLM, Santa Fe (w/cy of appln)
7 NMOCC, Santa Fe (ltr. only)

April 24, 1961

Humble Oil and Refining Company
P. O. Box 1597
Roswell, New Mexico

Re: 1961 Plan of Development
Abo Participating Area
Chalk Bluff Draw Unit
Eddy County, New Mexico

Attention: Mr. Robert J. Walker, Jr.

Gentlemen:

The Commissioner of Public Lands has approved the 1961 Plan of Development, Abo Participating Area for the Chalk Bluff Draw Unit, Eddy County, New Mexico.

Eleven approved copies of the application are being enclosed.

Please remit \$13.00 for the filing and handling of this documents.

Very truly yours,
E. S. JOHNNY WALKER
COMMISSIONER OF PUBLIC LANDS

BY:
Ted Bilberry, Supervisor
Oil and Gas Division

ESW/mar/s

cc: USGS- Roswell
OCC- Santa Fe

OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

Case #

April 21, 1961

Humble Oil & Refining Company
P. O. Box 1597
Roswell, New Mexico

ATTENTION: Mr. Robert J. Walker, Jr.

Re: 1961 Plan of Development,
Pennsylvanian Bend Participating Area, Chalk Bluff
Draw Unit Eddy County, New
Mexico.

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the 1961 Plan of Development, Pennsylvanian Bend Participating Area for the Chalk Bluff Draw 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.

Thirteen approved copies of the application are being forwarded to the Commissioner of Public Lands.

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

C. CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

Case # 150

April 21, 1961

C
O
D
Y
Humble Oil & Refining Company
P. O. Box 1597
Roswell, New Mexico

ATTENTION: Mr. Robert J. Walker, Jr.

Re: 1961 Plan of Development,
Abo Participating Area
Chalk Bluff Draw Unit
Eddy County, New Mexico.

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the 1961 Plan of Development, Abo Participating Area for the Chalk Bluff Draw 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.

Thirteen approved copies of the application are being forwarded to the Commissioner of Public Lands.

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

CHALK BLUFF DRAW UNIT AREA

EDDY COUNTY, NEW MEXICO

TO: Director
New Mexico Oil Conservation Commission
Santa Fe, New Mexico

Commissioner of Public Lands of the
State of New Mexico
Santa Fe, New Mexico

Director
United States Geological Survey
Roswell, New Mexico

APPLICATION FOR APPROVAL OF PLAN OF
DEVELOPMENT FOR CHALK BLUFF DRAW UNIT AREA
ABO PARTICIPATING AREA FOR 1961

Comes the undersigned, Humble Oil & Refining Company, the Unit Operator under the Chalk Bluff Draw Unit Agreement heretofore approved by the New Mexico Oil Conservation Commission, the Commissioner of Public Lands of the State of New Mexico, and the Director of the United States Geological Survey, and submits for approval of the New Mexico Oil Conservation Commission, Commissioner of Public Lands, and the Director of the United States Geological Survey, the plan hereinafter set forth for the further development and operation of the Chalk Bluff Draw Unit Area as to the Abo participating area for the calendar year 1961.

Abo Participating Area

That during the year 1960, fifteen wells were completed as capable of producing from the Abo formation and were either included in approved expansions of the initial participating area for the Abo formation or are included in pending application for expansion of said participating area, said wells being Well Nos. 1 and 2 completed in February; Well Nos. 3 and 4 completed in March; Well Nos. 5 and 6 completed in April; Well Nos. 7 and 8 completed in May; Well Nos. 9 and 10 completed in June; Well No. 14 completed in July; Well No. 13 completed in September, and Well Nos. 15, 16 and 17 completed in November. There were two additional wells drilled and attempted to be completed in the Abo formation during 1960 but which

proved to be wells not capable of producing in paying quantities and which were plugged and abandoned. These wells were Well No. 12, located in Section 17, and Well No. 18, located in the SW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 16. In addition, Well No. 19, located in the SE $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 16, was completed in January, 1961.

In addition, Well No. 11, located in the NE $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 17; Well No. 19, located in the SE $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 16, and Well No. 22, located in the NE $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 8, were completed as Abo producers in January, 1961, and are included in the application filed for the seventh revision of the participating area. Well No. 20, located in the NE $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 17 was also completed as a dry hole in January, 1961.

Applicant is now engaged in drilling Well No. 21, located in the NE $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 4, and, in addition, proposes to drill three additional wells in Section 17, the exact locations of which have not yet been determined.

Due to the fact that Well Nos. 11, 19, 20 and 22 have been completed in 1961 and Well No. 21 is now in the process of being drilled, upon the drilling of the three additional wells in Section 17, it will result in the completion of eight wells in the Abo formation during 1961.

WHEREFORE, it is respectfully submitted that the plans outlined above for the further development of the Abo participating area be approved.

DATED this the 12th day of April, 1961.

Respectfully submitted,

HUMBEL OIL & REFINING COMPANY

By C. P. Lindgren

By R. K. Meentz

Unit Operator

APPROVED 4-21-61
A. L. Patten
Director
New Mexico Oil Conservation Commission

APPROVED _____

Commissioner of Public Lands

APPROVED _____

Director
United States Geological Survey

HUMBLE OIL & REFINING COMPANY
SOUTHWEST REGION
P. O. BOX 1597
ROSWELL, NEW MEXICO

April 13, 1961

In re: Application for Approval of Plan
of Development for Chalk Bluff Draw
Unit Area for 1961 as to the Abo
and Pennsylvanian Bend Participating
Areas

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

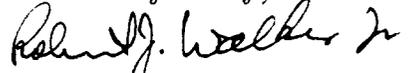
Gentlemen:

Enclosed herewith we are forwarding to you 14 copies of both the application for approval of plan of development for further operation of Chalk Bluff Draw Unit area as to Pennsylvanian Bend participating area for 1961, and application for approval of plan of development for Chalk Bluff Draw Unit area as to Abo participating area for 1961.

We would appreciate your examination and approval of each of the above mentioned applications and forwarding same to the Commissioner of Public Lands for his approval, and upon final approval, returning to us in order that the plans may be filed with the U.S.G.S.

If you should have any further question, or if we can be of any further assistance in this regard, please advise.

Yours very truly,



Robert J. Walker, Jr.

cc: Pan American Petroleum Corporation
Hondo Oil & Gas Company
Gulf Oil Corporation
Continental Oil Company
United States Geological Survey
Commissioner of Public Lands

CHALK BLUFF DRAW UNIT AREA

EDDY COUNTY, NEW MEXICO

TO: Director
New Mexico Oil Conservation Commission
Santa Fe, New Mexico

Commissioner of Public Lands of the
State of New Mexico
Santa Fe, New Mexico

Director
United States Geological Survey
Roswell, New Mexico

APPLICATION FOR APPROVAL OF PLAN FOR
FURTHER OPERATION OF CHALK BLUFF DRAW UNIT AREA
AS TO PENNSYLVANIAN BEND PARTICIPATING AREA FOR 1961

Comes the undersigned, Humble Oil & Refining Company, Unit Operator under the Chalk Bluff Draw Unit Agreement heretofore approved by the New Mexico Oil Conservation Commission, the Commissioner of Public Lands of the State of New Mexico and the Director of the United States Geological Survey, and submits for approval of the New Mexico Oil Conservation Commission, Commissioner of Public Lands and the Director of the United States Geological Survey the following plan for the further operation of the Chalk Bluff Draw Unit Area as to the Pennsylvanian Bend participating area for the remainder of the calendar year 1961.

Unit Operator has drilled and completed the following wells on the Chalk Bluff Draw Unit Area to a depth sufficient to test the Pennsylvanian Bend formation, which said wells are more particularly described as follows:

1. The Chalk Bluff Draw No. 1 well, located 1980 feet from the South and West lines of Section 5, Township 18 South, Range 27 East, N.M.P.M., which was completed April 13, 1956, as a discovery well capable of producing gas and condensate from the Pennsylvanian Bend sand at a depth of from 9,390 feet to 9,515 feet, which well had an initial potential of 8,482 mcf of gas per day.

2. Chalk Bluff Draw No. 2 well, located 1930 feet from the South and 1,880 feet from the West lines of Section 32, Township 17 South, Range 27 East, N.M.P.M., which was drilled to a total depth of 9,425 feet and plugged and abandoned as a dry hole on February 27, 1957.

3. Chalk Bluff Draw No. 3 well, located 2,310 feet from the North line and 330 feet from the East line of Section 8, Township 18 South, Range 27 East, N.M.P.M., which was completed on July 8, 1957, at a depth of approximately 9,505 feet to 9,555 feet, with an initial potential of 2,107 mcf of gas per day. After the well was worked over and fractured, the productivity was increased to 4,580 mcf of gas per day.

4. Chalk Bluff Draw No. 1 "C" well, located 1,980 feet from the North and East lines of Section 17, Township 18 South, Range 27 East, N.M.P.M. This well was drilled to a depth of 9,850 feet and completed as a well capable of producing gas from the Pennsylvanian Bend formation as of July 23, 1959, with an initial potential of 14,000 mcf of gas per day. No gas has been produced from this well due to the lack of a market; however, it is anticipated that a contract for the sale of gas to the Transwestern Pipeline Company will be negotiated in the near future.

In addition to the above wells drilled to the Pennsylvanian Bend formation upon the unit area, the Pan American Petroleum Corporation drilled a well outside the unit area located 330 feet from the North and West lines of Section 15, Township 18 South, Range 27 East, N.M.P.M., during 1960 for the purpose of testing the Pennsylvanian Bend formation and which resulted in a dry hole as far as the Pennsylvanian Bend formation is concerned. Applicant also drilled a well outside the unit area to test the Pennsylvanian Bend formation 660 feet from the North line and 1,980 feet from the South line in Section 19, Township 18 South, Range 27 East, N.M.P.M., which penetrated the Pennsylvanian Bend zone and was completed as a dry hole the latter part of 1960.

The working interest owners within the Chalk Bluff Draw Unit Area have been unable to agree upon the drilling of any additional wells for the purpose of further testing or extending the participating area for the Pennsylvanian Bend gas zone, and so far none of the working interest owners have evidenced any intention or willingness to drill any extension wells at their own risk, cost and expense, as provided by Section 13 of the Unit Agreement.

The Chalk Bluff Draw Unit No. 1 well, when completed in April, 1956, had a pressure of 3,719 Psig. When tested on October 4, 1960, the pressure had dropped

to 3,079 Psig., showing a loss of 645 Psig. Unit Well No. 3 had an original pressure on August 1, 1957, of 3,774 Psig., and when tested on August 29, 1960, the pressure had dropped to 1,315 Psig., showing a loss of 2,459 Psig. Chalk Bluff Draw Well 1 "C" showed a pressure on March 31, 1960, of 3,851 Psig. and, as indicated above, there has been no gas produced from this well. This drop in pressure, together with the information obtained from wells drilled in the area and all the geological information available, indicates rather conclusively that "structural location" is not a critical factor in the entrapment of the gas but that the gas accumulation is due principally to a stratigraphic trap in which sand development, porosity and permeability are the governing factors and that the reservoirs in this area are of small volume and quite limited in areal extent.

The four Pennsylvanian Bend test wells which have been drilled on the unit have cost approximately \$938,000.00, which does not include lease acquisition costs. The gross income from the sale of gas to February 1, 1961, has amounted to approximately \$460,000.00, from which would have to be deducted royalty, overriding royalties, taxes, costs of operation, and a reasonable rate of interest to determine the net proceeds. Due to the factors above mentioned indicating a low volume reservoir and the estimated reserves in connection therewith, the economic situation does not justify the drilling of additional wells at this time without further ^{knowledge on} reservoir performance. Consequently, Applicant does not believe it prudent to propose at this time that any additional wells be drilled during 1961 for the purpose of further testing the Pennsylvanian Bend formation.

DATED this the 12th day of April, 1961.

Respectfully submitted,

HUMBLE OIL & REFINING COMPANY

By C. J. Blighman

By R. K. Moore
Unit Operator

APPROVED 4-21-61
A. L. Porter, Jr.
Director
New Mexico Oil Conservation Commission

APPROVED _____

Commissioner of Public Lands

APPROVED _____

Director
United States Geological Survey



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

April 11, 1961

Humble Oil and Refining Company
P.O. Box 1287
Roswell, New Mexico

Attention: Mr. Robert J. Walker, Jr.

Gentlemen:

Your undated application for the sixth revision of the Abo Reef participating area for the Chalk Bluff Draw unit agreement, Eddy County, New Mexico, was approved April 6, 1961, by the Acting Director of the Geological Survey, effective as of November 1, 1960.

Seven approved copies of the 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,

(Signature)

JOHN A. ANDERSON
Regional Oil and Gas Supervisor

Cop. to Washington (ltr. only)
Artesia (w/cy appln.)
BLM-Santa Fe (w/cy appln.)
NMOCC, Santa Fe (ltr. only)

7



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

April 11, 1961

Humble Oil and Refining Company
P.O. Box 1207
Roswell, New Mexico

Gentlemen:

Your undated application for the second revision of the Pennsylvania Bend participating area for the Chalk Bluff Draw unit agreement, Eddy County, New Mexico, was approved March 17, 1961, by the Acting Director of the Geological Survey, effective as of July 1, 1959.

One approved copy of the application is 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,

(Orig. Sgd.) JOHN A. ANDERSON

JOHN A. ANDERSON
Regional Oil and Gas Supervisor

Cop. to: Washington (ltr. only)

Artesia (w/cy of appln.)
BLM, Santa Fe (w/cy of appln.)
NMOCC, Santa Fe (ltr. only)

March 8, 1961

**Humble Oil and Refining Company
P. O. Box 1287
Roswell, New Mexico**

**Re: Seventh Expansion
Abo Participating Area
Chalk Bluff Draw Unit
Eddy County, New Mexico**

Attention: Mr. Robert J. Walker, Jr.

Gentlemen:

The Commissioner of Public Lands has this date approved the Seventh Expansion Abo Participating Area for the Chalk Bluff Draw Unit, Eddy County, New Mexico, Subject to like approval by the US Geological Survey, the Oil Conservation Commission having approved as of March 2, 1961.

We are returning to you nine approved copies and request you furnish us one fully approved copy.

Your Official Receipt No. 59707 in the amount of \$12.00, which covered the filing fee, was forwarded to you March 7, 1961.

**Very truly yours,
E. S. JOHNNY WALKER
COMMISSIONER OF PUBLIC LANDS**

**BY:
Ted Bilberry, Supervisor
Oil and Gas Division**

ESW/nmr/s

**cc: USGS- Roswell, New Mexico
OCC- Santa Fe, New Mexico**

C
O
P
Y

OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

Case # 49

March 2, 1961

Humble Oil & Refining Company
P. O. Box 1287
Roswell, New Mexico

Attention: Mr. Robert J. Walker, Jr.

Re: Seventh Expansion Abo
Participating Area
Chalk Bluff Draw Unit
Eddy County, New Mexico.

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Seventh Expansion Abo Participating Area for the Chalk Bluff Draw 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.

Eleven approved copies of the application are being forwarded to the Commissioner of Public Lands.

Very truly yours,

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

ALP/JEK/ig

cc: U. S. Geological Survey
Roswell, New Mexico

Commissioner of Public Lands
Santa Fe, New Mexico

COPY

HUMBLE OIL & REFINING COMPANY

HUMBLE DIVISION

P. O. BOX 1287

ROSWELL, NEW MEXICO

February 28, 1961

In re: Seventh Expansion
Abo Participating Area
Chalk Bluff Draw Unit
Eddy County, New Mexico

New Mexico Oil Conservation Commission
P. O. Box 891
Santa Fe, New Mexico

Gentlemen:

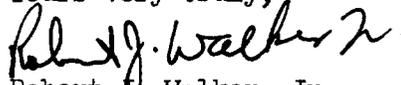
We are enclosing 12 copies of application for the seventh expansion of the Abo participating area, Chalk Bluff Draw Unit, Eddy County, New Mexico. We will sincerely appreciate your examination of the enclosed application and if it is in proper order, please approve and forward to the Commissioner of Public Lands for his approval.

After approval of the application by the Commissioner, we are, by copy of this letter, respectfully requesting that all copies of the application be returned to us here in Roswell for filing with the U.S.G.S. Upon final approval by the U.S.G.S., we will return a fully approved copy to the Commissioner for his permanent files and record.

By copy of this letter we are also forwarding to the Commissioner, our Draft No. 6F-3856 in the amount of \$12.00 for filing fees, being \$1.00 per copy.

In the event you need any additional information, or if we can be of further service, please advise.

Yours very truly,



Robert J. Walker, Jr.

RJW/dm
Encls.

cc: Commissioner of Public Lands
P. O. Box 791
Santa Fe, New Mexico

United States Geological Survey
P. O. Box 6721
Roswell, New Mexico

In re: Chalk Bluff Draw Unit Area
Eddy County, New Mexico

TO: Director
United States Geological Survey

Commissioner of Public Lands
State of New Mexico

New Mexico
Oil Conservation Commission

APPLICATION FOR APPROVAL OF SEVENTH
EXPANSION OF INITIAL PARTICIPATING AREA
CHALK BLUFF DRAW UNIT AREA FOR THE ABO REEF FORMATION

Comes the Humble Oil & Refining Company, as Unit Operator for the Chalk Bluff Draw Unit Agreement approved by the New Mexico Oil Conservation Commission on October 13, 1955, by the Commissioner of Public Lands of the State of New Mexico on November 10, 1955, and by the Director of the United States Geological Survey on December 29, 1955, and pursuant to the provisions of said Unit Agreement respectfully submits for the approval of the Director, Commissioner and Commission the seventh revision of the initial participating area for the Abo Reef formation as hereinafter set forth.

1. The initial participating area, together with the first, second, third, fourth and fifth expansions and the application heretofore made for the sixth expansion include the following described lands within the unit area:

Township 18 South, Range 27 East, N.M.P.M.

Section 4: Lot 18
Section 8: $SE\frac{1}{4}SE\frac{1}{4}$
Section 9: $E\frac{1}{2}W\frac{1}{2}$, $W\frac{1}{2}SW\frac{1}{4}$, $SW\frac{1}{4}NW\frac{1}{4}$
Section 16: $NW\frac{1}{4}$, $N\frac{1}{2}SW\frac{1}{4}$

Containing 598.43 acres, more or less.

2. That during the month of January, 1961, three additional wells were completed capable of producing oil and gas from the Abo Reef formation offsetting the participating area as heretofore approved and proposed to be expanded by the application for the sixth expansion which is now pending. The three additional wells are located upon the $NE\frac{1}{4}SE\frac{1}{4}$ of Section 8 and the $SE\frac{1}{4}SW\frac{1}{4}$ of Section 16 and the $SE\frac{1}{4}NE\frac{1}{4}$ of

Section 17, Township 18 South, Range 27 East, N.M.P.M., and are more particularly described as follows:

Abo Chalk Bluff Draw Unit No. 11

Location: 2310' FNL, 330' FEL, Section 17, T-18-S, R-27-E
Total Depth: 5638'
Perforated Intervals: 5456-5470'
Net Pay: 124'
Initial Potential: 240 BOPD
Completed Date: January 21, 1961

Abo Chalk Bluff Draw Unit No. 19

Location: 990' FSL, 1650' FWL, Section 16, T-18-S, R-27-E
Total Depth: 5985'
Perforated Intervals: 5670-5680'
Net Pay: 60'
Initial Potential: 106 BOPD
Completed Date: January 19, 1961

Abo Chalk Bluff Draw Unit No. 22

Location: 1650' FSL, 330' FEL, Section 8, T-18-S, R-27-E
Total Depth: 5576'
Perforated Intervals: 5370-5400'
Net Pay: 54'
Initial Potential: 165 BOPD
Completed Date: January 21, 1961

It is proposed that on account of the above wells that the NE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 8 and the SE $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 16 and the SE $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 17, Township 18 South, Range 27 East, N.M.P.M., be added to the participating area as heretofore approved and as heretofore proposed to be expanded effective as of January 1, 1961, being the first of the month in which production was obtained on said land.

That there is attached hereto, made a part hereof and for purposes of identification marked Exhibit "B" - 7, a schedule of participation for the seventh expanded participating area effective as of January 1, 1961, and which shows the percentages of participation by the owners of royalty, overriding royalties and working interests.

3. That there is attached hereto, made a part hereof and for purposes of identification marked Exhibit "A", a map of the Chalk Bluff Draw Unit Area showing the character of the lands, the ownership of the oil and gas leases within the unit area, and the participating area as expanded and proposed to be expanded and also the location of the wells which have been drilled within the unit area.

4. That there is also attached hereto, made a part hereof and for purposes of identification marked Exhibit "C", a geological report prepared by C. V. Roberts, Area Geologist, together with an Isopachous Map of the Western portion of the Empire Abo Field which shows the relationship of the additional lands to be included in the participating area by reason of the proposed expansion to the development of the Empire Abo Field to date and which indicates that said lands are reasonably proven to be productive of oil and gas in paying quantities from the Abo Reef formation.

WHEREFORE, Applicant respectfully requests that the seventh proposed expansion of the initial participating area as outlined hereinabove be approved by the Commissioner of Public Lands of the State of New Mexico, the New Mexico Oil Conservation Commission and the Director of the United States Geological Survey.

Respectfully submitted,

HUMBLE OIL & REFINING COMPANY

By J. H. Galloway
 J. H. GALLOWAY
 Member, Board of Management
 Humble Division
 Operator

TRADE OIL

By Del

Attest:

Elizabeth H. Kenney
 Assistant Secretary

APPROVED	
Desc.	
Acres	
Int.	
Perm.	<input checked="" type="checkbox"/>
Accts.	
Prod.	
Trade	<u>RJA</u>

HERVEY, DOW & HINKLE

By Samuel Hinkle
 Attorneys for
 HUMBLE OIL & REFINING COMPANY

APPROVED this the 7 day of March, 1961

A. H. Porter
 Secretary-Director
 New Mexico Oil Conservation Commission

APPROVED this the ___ day of _____, 1961

 Commissioner of Public Lands

APPROVED this the ___ day of _____, 1961

 Director
 United States Geological Survey



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. Box 6721
Roswell, New Mexico

January 31, 1961

Handwritten: 100 # 100

Humble Oil and Refining Company
P. O. Box 1287
Roswell, New Mexico

Gentlemen:

Your undated application for the fifth revision of the Abo Reef participating area for the Chalk Bluff Draw unit agreement, Eddy County, New Mexico, was approved January 18, 1961, by the Acting Director of the Geological Survey, effective as of September 1, 1960.

Four approved copies of the 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,

[Orig. Sgd.] JOHN A. ANDERSON

JOHN A. ANDERSON
Regional Oil and Gas Supervisor

Copy to: Washington (ltr. only)

Artesia (w/cy of appln.)
BLM, Santa Fe (w/cy of appln.)
7 NMOCC, Santa Fe (ltr. only)

In reply refer to:
Unit Division

January 27, 1961

C
O
P
Y
Humble Oil & Refining Company
P. O. Box 1287
Roswell, New Mexico

Re: Application for Sixth
Expansion Abo Participating Area
Chalk Bluff Draw Unit
Eddy County, New Mexico

Attention: Mr. Robert J. Walker, Jr.

Gentlemen:

The Commissioner of Public Lands has of January 27, approved the Sixth Expansion of the Abo Participating Area, for the Chalk Bluff Draw Unit Area, Eddy County, New Mexico, this Participating Area being effective as of November 1, 1960. Our approval being subject to like approval by the Director of the Oil Conservation Commission and the Director of the US Geological Survey.

We are enclosing eleven approved copies. Please send us one fully approved copy.

Also enclosed is Official Receipt No. 56672 in the amount of \$12.00 covering the filing fee.

Very truly yours,
E.S. JOHNNY WALKER
Commissioner of Public Lands
BY:
Marian M. Rhea, Supervisor
Unit Division

ESW:mnr/s

cc: OCC-Santa Fe
USGS-Roswell

CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

Call 11960

January 17, 1961

Humble Oil & Refining Company
P. O. Box 1287
Roswell, New Mexico

ATTENTION: Mr. Robert J. Walker, Jr.

RE: Sixth Expansion Abo
Participating Area
Chalk Bluff Draw Eddy
County, New Mexico

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Sixth Expansion of the Abo Participating Area for the Chalk Bluff Draw 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.

Twelve approved copies of the application have been forwarded to the Commissioner of Public Lands.

Upon approval by the Commissioner of Public Lands and the Director of the United States Geological Survey, please supply this office with a fully approved copy.

Very truly yours,

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

ALP/JEK/ig

cc: US Geological Survey --Roswell
Commissioner of Public Lands - Santa Fe

HUMBLE OIL & REFINING COMPANY

HUMBLE DIVISION

P. O. BOX 1287

ROSWELL, NEW MEXICO

January 12, 1961

In re: Sixth Expansion
Abo Participating Area
Chalk Bluff Draw Unit
Eddy County, New Mexico

New Mexico Oil Conservation Commission
P. O. Box 891
Santa Fe, New Mexico

Gentlemen:

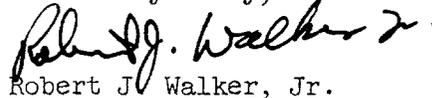
We are enclosing twelve copies of application for the sixth expansion of the Abo participating area, Chalk Bluff Draw Unit, Eddy County, New Mexico. We will sincerely appreciate your examination of the enclosed application and if it is in proper order, please approve and forward to the Commissioner of Public Lands for his approval.

After approval of the application by the Commissioner, we are, by copy of this letter, respectfully requesting that all copies of the application be returned to us here in Roswell for filing with the U.S.G.S. Upon final approval by the U.S.G.S., we will return a fully approved copy to the Commissioner for his permanent files and record.

By copy of this letter, we are also forwarding to the Commissioner, our draft in the amount of \$12.00 for filing fees, being \$1.00 per copy.

In the event you need any additional information, or if we may be of further service, please advise.

Yours very truly,



Robert J. Walker, Jr.

RJW/dm
Encls.

cc: Commissioner of Public Lands
P. O. Box 791
Santa Fe, New Mexico

United States Geological Survey
P. O. Box 6721
Roswell, New Mexico

Mr. M. L. McMillan
Humble Oil & Refining Company
Midland, Texas

In reply refer to:
Unit Division

December 8, 1960

Case #960

Humble Oil & Refining Company
P. O. Box 1287
Roswell, New Mexico

Re: Fifth Expansion Abo
Participating Area
Chalk Bluff Draw Unit
Eddy County, New Mexico

ATTENTION: Mr. Robert J. Walker, Jr.

Gentlemen:

The Commissioner of Public Lands has approved the Fifth Expansion of the Abo Participating Area for the Chalk Bluff Draw Unit Area as of December 7, 1960, subject to like approval by the United States Geological Survey and the Oil Conservation Commission.

We are forwarding eight copies to you together with our Official Receipt in the amount of \$10.00 which covers the filing fee.

Please notify this office at such time as this Participating Area has been fully approved.

Very truly yours,
MURRAY E. MORGAN
Commissioner of Public Lands

BY:
Marian M. Shea, Supervisor
Unit Division

MEM/umr/s

cc:

OCC-Santa Fe
OCCS-Roswell, New Mexico

C
O
P
Y

C . CONSERVATION COMMISSIC

P. O. BOX 871

SANTA FE, NEW MEXICO

November 7, 1960

Humble Oil & Refining Company
P.O. Box 1267
Roswell, New Mexico

Attention: Mr. Robert J. Walker, Jr.

Re: Fifth Expansion Abo
Participating Area
Chalk Bluff Draw Unit
Eddy County, New Mexico.

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Fifth Expansion of the Abo Participating Area for the Chalk Bluff Draw 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.

Ten approved copies of the application are being forwarded to the office of Commissioner of Public Lands.

Very truly yours,

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

ALP/JEK/ig

cc: Commissioner of Public Lands - Santa Fe, New Mexico
US Geological Survey - Roswell, New Mexico

HUMBLE OIL & REFINING COMPANY

HUMBLE DIVISION

P. O. BOX 1287

ROSWELL, NEW MEXICO

November 4, 1960

In re: Chalk Bluff Draw Unit
Eddy County, New Mexico
Abo Participating Area File

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

Gentlemen:

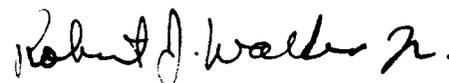
We are enclosing ten (10) copies of Application for the Fifth Expansion of the Abo Participating Area, Chalk Bluff Draw Unit, Eddy County, New Mexico. We would sincerely appreciate your examination of the enclosed Application and, if such is in proper order, please approve and forward to the Commissioner of Public Lands for his approval.

After approval of the Application by the Commissioner, we are by copy of this letter, respectfully requesting that the Application be forwarded to us here in Roswell for filing with the U.S.G.S.

By copy of this letter we are also forwarding to the Commissioner our draft in the amount of \$10.00 as filing fees, being \$1.00 per copy.

In the event you need any additional information or if we may be of further service, please advise.

Yours very truly,



Robert J. Walker, Jr.

RJW:fd

Encls.

cc: Commissioner of Public Lands, w/encl.
P. O. Box 791
Santa Fe, New Mexico

U.S. Geological Survey
P. O. Box 6721
Roswell, New Mexico

Mr. M. L. McMillan
Humble Oil & Refining Company
Box 1600
Midland, Texas

In reply refer to:
Unit Division

Case # 760

October 6, 1960

1960 OCT 7 AM 10 57
MAIL DIVISION OCC

C
O
P
Y

Humble Oil & Refining Company
P. O. Box 1282
Roswell, New Mexico

Re: Fourth Expansion of Initial
Participating Abo Reef Formation
Chalk Bluff Draw Unit
Eddy County, New Mexico

Attention: Mr. R. M. Richardson

Gentlemen:

The Commissioner of Public Lands is of this date approving the Fourth Expansion of the Initial Participating Area, Chalk Bluff Draw Unit Area for the Abo Reef Formation. Our approval is subject to like approval from the United States Geological Survey and the Oil Conservation Commission.

We are forwarding seven copies, under copy of this letter, to the United States Geological Survey.

Very truly yours,
MURRAY E. MORGAN
Commissioner of Public Lands

BY:
Marian M. Rhea, Supervisor
Unit Division

MEM/mmr/s

cc: OCC- Santa Fe
USGS- Roswell

OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

September 27, 1960

C
Humble Oil & Refining Company
P. O. Box 1287
Roswell, New Mexico

O
Attention: Mr. R. M. Richardson

RE: Fourth Expansion of Initial
Participating Area Abo Reef
Formation Chalk Bluff Draw
Unit Eddy County, New Mexico.

P
Gentlemen:

Y
This is to advise that the New Mexico Oil Conservation Commission has this date approved the Fourth Expansion of Initial Participating Area Abo Reef Formation for the Chalk Bluff Draw 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.

Nine approved copies of the application are being forwarded to the Commissioner of Public Lands.

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

HUMBLE OIL & REFINING COMPANY

HEAD OFFICE OCC HUMBLE DIVISION
P. O. BOX 1287

ROSWELL, NEW MEXICO

RECEIVED IN 1 SEP 22 1960

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

Gentlemen:

We are enclosing ten copies of application for the fourth expansion of the Abo participating area, Chalk Bluff Draw Unit, Eddy County, New Mexico. We would be sincerely appreciative if you would examine the enclosed application and if such is in proper order, please approve and forward to the Commissioner of Public Lands for his approval.

After approval of the application by the Commissioner, we are, by copy of this letter, respectfully requesting that the application be forwarded to us here in Roswell for filing with the U.S.G.S.

By copy of this letter we are also forwarding to the Commissioner our draft in the amount of \$10.00 as filing fees, being \$1.00 per copy.

In the event you need any additional information, or if we may be of further service, please advise.

Yours very truly,



R. M. Richardson

RMR/dm
Encls.

cc: Commissioner of Public Lands
P. O. Box 791
Santa Fe, New Mexico

United States Geological Survey
P. O. Box 6721
Roswell, New Mexico

Mr. M. L. McMillan
Humble Oil & Refining Company
Midland, Texas

In re: Chalk Bluff Draw Unit Area
Eddy County, New Mexico

TO: Director,
United States Geological Survey

Commissioner of Public Lands
State of New Mexico

New Mexico
Oil Conservation Commission

APPLICATION FOR APPROVAL OF FOURTH EXPANSION OF INITIAL
PARTICIPATING AREA
CHALK BLUFF DRAW UNIT AREA FOR THE ABO REEF FORMATION

Comes the Humble Oil & Refining Company, as Unit Operator for the Chalk Bluff Draw Unit Agreement approved by the New Mexico Oil Conservation Commission on October 13, 1955, by the Commissioner of Public Lands of the State of New Mexico on November 10, 1955, and by the Director of the United States Geological Survey on December 29, 1955, and pursuant to the provisions of said unit agreement respectfully submits for the approval of the Director, Commissioner and Commission the fourth revision of the initial participating area for the Abo Reef Formation as hereinafter set forth.

1. That there has been heretofore submitted for approval of the Director, Commissioner and Commission application for the first, second, and third expansions of the initial participating area for the Abo Reef Formation. The initial participating area together with the proposed first, second and third expansions include the following described lands within the unit area:

Township 18 South, Range 27 East, N.M.P.M.

Section 4: Lot 18
Section 9: $E\frac{1}{2}W\frac{1}{2}$
Section 9: $SW\frac{1}{4}NW\frac{1}{4}$
Section 9: $W\frac{1}{2}SW\frac{1}{4}$
Section 16: $N\frac{1}{2}NW\frac{1}{4}$

Containing 398.43 acres

2. During the month of July, 1960 an additional well was completed capable of producing oil and gas from the Abo Reef Formation, offsetting the participating area as heretofore submitted for approval, said well being more particularly described as follows:

Abo Chalk Bluff Draw Unit Well No. 14

Location: 1650' FNL, 1650' FWL Section 16, T-18-S,
R-27-E
Total Depth: 5700'
Perforated Intervals: 5582'-5600'
Net Pay: 285'
Initial Potential: Flowing 250 BPL0D thru 1/4" choke,
GOR 1398
Completed Date: July 23, 1960

It is proposed that on account of the above well that the SE $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 16 containing 40 acres more or less, be added to the participating area as the fourth expansion thereof effective as of July 1, 1960, being the first of the month in which production was obtained on said land:

That there is attached hereto, made a part hereof, and for purposes of identification marked Exhibit "B-4" a schedule of participation for the fourth expanded participating area effective as of July 1, 1960 and which shows the percentages of participation by the owners of royalty, overriding royalties and working interests.

3. That there is attached hereto, made a part hereof and for purposes of identification marked Exhibit "C" a geological report prepared by Crandall D. Jones, Area Geologist for the Humble Oil & Refining Company, covering the fourth revision of the participating area as above set forth. That there is attached to said geological report an isopachous map of the western portion of the Empire Abo Field which shows the relationship of the additional lands to be included in the participating area by reason of the proposed expansion to the development of the Empire Abo Field to date and which indicates that said lands are reasonably proven to be productive of oil and gas in paying quantities from the Abo Reef Formation.

WHEREFORE, applicant respectfully requests that the fourth proposed expansion of the initial participating area as outlined hereinabove be

approved by the Director of the United States Geological Survey, the
 Commissioner of Public Lands of the State of New Mexico and the New
 Mexico Oil Conservation Commission as provided by the unit agreement.

Respectfully submitted,

HUMBLE OIL & REFINING COMPANY

BY *E. J. Hammer*
 MEMBER - BOARD OF MANAGEMENT,
 HUMBLE DIVISION
 Operator

TRADE O. K.
 W. A. MALEY

By *W. A. Maley*

APPROVED	
Desc.	<i>WAM</i>
Acreage	<i>WAM</i>
Int.	<i>WAM</i>
Form	<i>WAM</i>
Acctg.	<i>BFH</i>
Prod.	<i>WAM</i>
Trade	<i>WAM</i>

HERVEY, DOW & HINKLE

BY _____
 Attorneys for
 HUMBLE OIL & REFINING COMPANY

APPROVED this the 27th day of September, 1960
A. L. Carter, Jr.
 Secretary-Director
 New Mexico Oil Conservation Commission

APPROVED this the 27th day of September, 1960

 Commissioner of Public Lands

APPROVED this the _____ day of _____, 1960

 Director,
 United States Geological Survey

MAIN OFFICE OCC

In reply refer to:
Unit Division

1960 AUG 25 AM 6:54

August 25, 1960

Case # 960

C
O
P
Y

Humble Oil and Refining Company
Exploration Department
P.O. Box 1287
Roswell, New Mexico

Re: Second Revision of Pennsylvania
Bend Participating Area, Chalk
Bluff Draw Unit, Eddy County,
New Mexico

Attention: Mr. R.M. Richardson

Gentlemen:

The Commissioner of Public Lands has of this date approved the Second Revision of the Pennsylvania Bend Participating Area for the Chalk Bluff Draw Unit, Eddy County, New Mexico, subject to like approval by the United States Geological Survey and the Oil Conservation Commission.

We are enclosing five copies of the approved application. Please furnish us another copy when fully executed.

Very truly yours,
Murray E. Morgan
Commissioner of Public Lands

By:
Ted Bilberry, Supervisor
Oil and Gas Division

MEM/MR/1

cc: USGS-Roswell
OCC-Santa Fe

STATE LAND OFFICE

In reply refer to
Unit Division

RECEIVED
Santa Fe, New Mexico



August 24, 1960

Humble Oil and Refining Company
P.O. Box 1283
Roswell, New Mexico

Re: First, Second and Third
Expansions' Abo Particip-
ating Area, Chalk Bluff
Draw Unit, Eddy County,
New Mexico

Attention: Mr. R.M. Richardson

Gentlemen:

This is to advise you that the Commissioner of Public Lands has approved the First, Second and Third Expansions' Abo Participating Area for the Chalk Bluff Draw Unit Area as of August 23, 1960, subject to like approval by the United States Geological Survey and the Oil Conservation Commission.

We are returning eight approved copies to you for further processing. Please furnish us one fully executed copy.

Also enclosed is Official Receipt No. 43600 in the amount of \$10.00.

Very truly yours,
Murray E. Morgan
Commissioner of Public Lands

By:
Ted Bilberry, Supervisor
Oil and Gas Division

MEM/AMR/1
cc: OCC-Santa Fe
USGS-Roswell

ILLEGIBLE

NEW MEXICO CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

August 9, 1960

Humble Oil & Refining Company
P. O. Box 1287
Roswell, New Mexico

ATTENTION: R. M. Richardson

RE: First Second and Third
Expansions Abo Participating
Area
Chalk Bluff Draw Unit
Eddy
County, New Mexico

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the First, Second and Third Expansions Abo Participating Area for the Chalk Bluff Draw - 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.

Nine approved copies of the application are being forwarded to the Commissioner of Public Lands.

Very truly yours,

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

mz

cc: Commissioner of Public Lands
Santa Fe, New Mexico

United States Geological Survey
P. O. Box 6721
Roswell, New Mexico Attn: Mr. John Anderson

HUMBLE OIL & REFINING COMPANY

HUMBLE DIVISION

P. O. BOX 1287

ROSWELL, NEW MEXICO

August 5, 1960

In re: First Second and Third Expansions
Abo Reef Participating Area
Chalk Bluff Draw Unit
Eddy County, New Mexico

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

Attention: Mr. Pete Porter

Gentlemen:

We are filing herewith ten copies of our application for the approval of the first, second and third expansions of the initial Abo reef participating area in the Chalk Bluff Draw Unit, Eddy County, New Mexico.

The application is self-explanatory and should reveal such facts as are needed by you. If you should, however, need additional information, please call us here in Roswell.

We are, by copy of this letter, forwarding our check in the amount of \$10.00 as filing fees to the Commissioner of Public Lands. We respectfully request that you examine the enclosed application and if such meets with your approval, please approve and forward to the Commissioner, Unit Division, for his necessary approval. After the application has been approved by the Commissioner, please return to us here in Roswell for our filing with the U.S.G.S.

Yours very truly,



R. M. Richardson

RMR/dm
Encls.

cc: Commissioner of Public Lands
P. O. Box 871
Santa Fe, New Mexico - Attention: Unit Division

United States Geological Survey
P. O. Box 6721
Roswell, New Mexico - Attention: Mr. John Anderson

Re: Chalk Bluff Draw Unit Area
Eddy County, New Mexico

TO: Director,
United States Geological Survey

Commissioner of Public Lands
State of New Mexico

New Mexico
Oil Conservation Commission

APPLICATION FOR APPROVAL OF FIRST, SECOND AND THIRD
EXPANSIONS OF INITIAL PARTICIPATING AREA,
CHALK BLUFF DRAW UNIT AREA FOR THE ABO REEF FORMATION

Comes the Humble Oil & Refining Company, as Unit Operator for the Chalk Bluff Draw Unit Agreement approved by the New Mexico Oil Conservation Commission on October 13, 1955, by the Commissioner of Public Lands of the State of New Mexico on November 10, 1955, and by the Director of the United States Geological Survey on December 29, 1955, and pursuant to the provisions of said unit agreement respectfully submits for the approval of the Director, Commissioner and Commission the first, second and third revisions of the initial participating area as hereinafter set forth. Said initial participating area was approved by the New Mexico Oil Conservation Commission on April 25, 1960, by the Commissioner of Public Lands of the State of New Mexico on April 27, 1960, and by the Director of the United States Geological Survey on June 22, 1960, and is effective as of February 3, 1960.

1. That there is attached hereto, made a part hereof and for purposes of identification marked Exhibit "A" a plat showing the Chalk Bluff Draw Unit Area together with the ownership of the respective oil and gas leases committed thereto and the tract numbers thereof, as shown by Exhibit "B" attached to the unit agreement, and the wells which have been completed upon and in the vicinity of the unit area.

2. First Proposed Expansion of Initial Participating Area:

That during the month of April 1960 two wells were completed capable of producing oil and gas in paying quantities from the Abo Reef formation, said wells being more particularly described as follows:

Abo Chalk Bluff Draw Unit Well No. 5:

Location: 2310' FWL, 330' FSL Section 4, T-18-S, R-27-E
Total Depth: 5635'
Perforated Intervals: 5560'-5584'
Net Pay: 100'
Initial Potential: Flowing 145 BPLD thru 3/16" choke, 43°
gravity, GOR 1113
Completed Date: April 15, 1960

Abo Chalk Bluff Draw Unit Well No. 6:

Location: 1980' FWL, 660' FNL Section 16, T-18-S, R-27-E
Total Depth: 5681'
Perforated Intervals: 5568'-5582' and 5602'-5616'
Net Pay: 102'
Initial Potential: Flowing 586 BPLD thru 3/16" choke, 44°
gravity, GOR 871, based on 6½ hour test
of 159 BPLD
Completed Date: April 16, 1960

It is proposed that on account of the above wells that Lot 18 in Section 4, Township 18 South, Range 27 East, containing 38.43 acres, and the NE¼NW¼ Section 16, Township 18 South, Range 27 East, containing 40 acres, be added to the initial participating area as the first expansion thereof effective as of April 1, 1960, being the first of the month in which production was obtained on said land.

That there is attached hereto, made a part hereof and for purposes of identification marked Exhibit "B-1" a schedule of participation for the first expanded participating area effective from April 1, 1960, to May 1, 1960, and which shows the percentages of participation by the royalties, overriding royalties and working interest owners.

3. Second Proposed Expansion of Initial Participating Area:

That during the month of May 1960 two wells were completed as wells capable of producing oil and gas in paying quantities from the Abo Reef formation, said wells being more particularly described as follows:

Abo Chalk Bluff Draw Unit Well No. 7:

Location: 330' FSL, 990' FWL Section 9, T-18-S, R-27-E
Total Depth: 5768'
Perforated Intervals: 5630'-5656'
Net Pay: 112'
Initial Potential: Flowing 120 BPLD thru 5/32" choke, GOR 1005
Completed Date: May 15, 1960

Abo Chalk Bluff Draw Unit Well No. 8:

Location: 2310' FNL, 990' FWL Section 9, T-18-S, R-27-E
Total Depth: 5666'
Perforated Intervals: 5548'-5556' and 5564'-5572'
Net Pay: 40'
Initial Potential: Flowing 175 BPLD thru 3/16" choke, GOR 1367,
based on 11 hour test of 80 BO
Completed Date: May 7, 1960

It is proposed that on account of the above wells that the SW $\frac{1}{4}$ NW $\frac{1}{4}$ and SW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 9, Township 18 South, Range 27 East, containing 80 acres, be added to the initial participating area as the second expansion thereof effective as of May 1, 1960, being the first of the month in which production was obtained on said land.

That there is attached hereto, made a part hereof and for purposes of identification marked Exhibit "B-2" a schedule of participation for the second expanded participating area effective from May 1, 1960, to June 1, 1960, and which shows the percentages of participation by the royalties, overriding royalties and working interest owners.

4. Third Proposed Expansion of Initial Participating Area:

That during the month of June 1960 two additional wells were completed as wells capable of producing oil and gas in paying quantities from the Abo Reef formation, said wells being more particularly described as follows:

Abo Chalk Bluff Draw Unit Well No. 9:

Location: 660' FNL, 990' FWL Section 16, T-18-S, R-27-E
Total Depth: 5700'
Perforated Intervals: 5590'-5610'
Net Pay: 44'
Initial Potential: Flowing 206 BPL0D thru 7/32" choke, GOR 1063,
based on 7 $\frac{1}{2}$ hour test of 62 BPL0
Completed Date: June 24, 1960

Abo Chalk Bluff Draw Unit Well No. 10:

Location: 1650' FSL, 990' FWL Section 9, T-18-S, R-27-E
Total Depth: 5700'
Perforated Intervals: 5569'-5584' and 5589'-5597'
Net Pay: 47'
Initial Potential: Flowing 231 BPL0D thru 14/64" choke, GOR 1033,
based on 8 hour test of 77 B0
Completed Date: June 9, 1960

It is proposed that on account of the above wells that the NW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 9 and NW $\frac{1}{4}$ NW $\frac{1}{4}$ Section 16, Township 18 South, Range 27 East, containing 80 acres, be added to the initial participating area as the third expansion thereof effective as of June 1, 1960, being the first of the month in which production was obtained on said land.

That there is attached hereto, made a part hereof and for purposes of identification marked Exhibit "B-3" a schedule of participation for the third expanded participating area effective from June 1, 1960, to July 1, 1960, and which shows the percentages of participation by the royalties, overriding royalties and working interest owners.

5. That there is attached hereto, made a part hereof and for purposes of identification marked Exhibit "C" a geological report prepared by Crandall D. Jones, Area Geologist for the Humble Oil & Refining Company, covering each of the proposed revisions of the initial participating area above set forth and that there is attached to said geological report an isopachous map of the Western Portion of the Empire Abo Field which shows the relationship of the lands to be included in the participating area by reason of the proposed expansion set forth above to the development of the Empire Abo Field to date and that said lands are reasonably proven to be productive of oil and gas in paying quantities from the Abo Reef formation.

WHEREFORE, applicant respectfully requests that the first, second and third proposed expansions of the initial participating area as outlined hereinabove be approved by the Director of the United States Geological Survey, the Commissioner of Public Lands and the New Mexico Oil Conservation Commission as provided by the unit agreement.

TRADE O. K.
W. A. MALEY
By: *W*

Respectfully submitted,

HUMBLE OIL & REFINING COMPANY

By: *E. J. Hammer*

MEMBER - BOARD OF MANAGEMENT,
HUMBLE DIVISION

APPROVED	
Desc.	<i>RFH</i>
Acreage	<i>RFH</i>
Int.	<i>RFH</i>
Form	<i>H/D</i>
Acctg.	RFH
Prod.	<i>RFH</i>
Trade	<i>RFH</i>

Attest:-

Margaret W. Hatch
Assistant Secretary

HERVEY, DOW & HINKLE

By _____
Attorneys for
Humble Oil & Refining Company

APPROVED this the 9th day of Aug., 1960,
A. J. Porter, Jr.
Secretary-Director
New Mexico Oil Conservation Commission

APPROVED this the _____ day of _____, 1960.

Commissioner of Public Lands

APPROVED this the _____ day of _____, 1960.

Director
United States Geological Survey

In reply refer to:
Unit Division

OFFICE OCC

AUG 13 AM 7:13

August 4, 1960

C
Humble Oil and Refining Company
Exploration Department
P.O. Box 1287
Roswell, New Mexico

O
Re; Second Revision of Pennsylvania
Bend Participating Area, Chalk
Bluff Draw Unit, Lady County,
New Mexico

P
Attention: Mr. F.M. Richardson

Gentlemen:

Y
We have again reviewed the information contained in your Exhibits attached to your Second Revision of the Pennsylvanian Bend Sands Participating Area for the Chalk Bluff Draw Unit.

Basing our conclusions on your structure map which is contoured on the Pennsylvanian Bend Sands on intervals of 100 feet, it is our belief considering the inclusion of the West half of Section nine in your previous Participating Area that we are justified in requesting the NW/4 of Section 16-T18S-R27E be included in the Pennsylvanian Bend Sands Participating Area.

Very truly yours,
MURRAY E. MORGAN
Commissioner of Public Lands

By:
Ted Bilberry, Supervisor
Oil and Gas Division

MEM/AMR/1

cc: USGS, Roswell
Attention: Mr. Thomason

OCC, Santa Fe

MAIN OFFICE OCC

In reply refer to:
Unit Division

1960 JUL 29 AM 8:34

Case # 960

July 27, 1960

C
O
P
Y

Humble Oil and Refining Company
Exploration Department
P. O. Box 1287
Roswell, New Mexico

ATTENTION: Mr. R. M. Richardson

Re: Second Revision of the Pennsylvania
Bend Participating Area, Chalk Bluff
Draw Unit, Eddy County, New Mexico

Gentlemen:

In regard to our telephone conversation with you concerning the above designated Participating Area, we are awaiting for a report from you on the well which is drilling in Section 15 on Federal Land.

We believe we should have further information in order to evaluate State land in the west half of Section 16 before we approve your present Second Revision for the Pennsylvania Bend Participating Area.

Very truly yours,
MURRAY E. MORGAN
Commissioner of Public Lands

BY:
Ted Bilberry, Supervisor
Oil and Gas Division

NEM/MSR/s
cc:

OCC- Santa Fe
WGSB- Roswell

STATE LAND OFFICE

STATE LAND OFFICE CCC Santa Fe, New Mexico
1960 JUL 22 AM 8:14

In reply refer to:
Unit Division



July 21, 1960

MURRAY E. MORGAN
COMMISSIONER

Humble Oil and Refining Company
P. O. Box 1287
Roswell, New Mexico

Re: Plan of Development
Abo Formation-Chalk Bluff
Draw Unit, Eddy County,
New Mexico

ATTENTION: Mr. R. M. Richardson

Gentlemen:

We are enclosing two copies of the Plan of Development for the Abo Formation covering the period of July 1, 1960 thru December 31, 1960, for the Chalk Bluff Draw Unit Area, which was approved by the Commissioner of Public Lands July 21, 1960, subject to like approval by the United States Geological Survey and the Oil Conservation Commission.

We also enclose Official Receipt in the amount of \$4.00 which covers the filing fee.

Very truly yours,
MURRAY E. MORGAN
Commissioner of Public Lands

BY:
Ted Bilberry, Supervisor
Oil and Gas Division

MEM/MER/s

cc: United States Geological Survey
Roswell, New Mexico

Oil Conservation Commission
Santa Fe, New Mexico

MAIN OFFICE OCC
1960 JUN 24 AM 10:24

Re: Chalk Bluff Draw Unit Area,
Eddy County, New Mexico

To: Director,
United States Geological Survey

Commissioner of Public Lands
State of New Mexico

New Mexico
Oil Conservation Commission

APPLICATION FOR APPROVAL OF SECOND REVISION
OF THE PARTICIPATING AREA FOR THE PENNSYLVANIAN BEND FORMATION

Comes the undersigned, the Humble Oil & Refining Company, as unit operator for the Chalk Bluff Draw Unit Agreement approved by the New Mexico Oil Conservation Commission, the Commissioner of Public Lands of the State of New Mexico and the Director of the United States Geological Survey, and which became effective December 29, 1955, and pursuant to the provisions of Section 11 thereof respectfully submits for the approval of the New Mexico Oil Conservation Commission, the Commissioner of Public Lands of the State of New Mexico and the Director of the United States Geological Survey, the selection of the following described lands to constitute the second revision of the participating area for the Pennsylvanian Bend producing zone or formation heretofore established in connection with said unit agreement, to-wit:

Township 18 South, Range 27 East, N.M.P.M.

Section 17: All

containing 640 acres, more or less

In support of the selection of the above addition to the Pennsylvanian Bend participating area, applicant submits the following:

1. That there is attached hereto, made a part hereof, and for purposes of identification marked Exhibit "A", a plat showing the boundaries of the unit area, the character of the lands embraced therein and the ownership thereof, including the tract

numbers referred to on Exhibit "B" attached to the unit agreement, the initial Pennsylvanian Bend participating area, the first expansion thereof and the proposed second expansion.

2. There is also submitted herewith, as Exhibits "B", "B-1" and "B-2", schedules showing the participation by tract numbers and owners of leases within the initial participating area, the first expansion thereof and the proposed second expansion thereof, respectively.

3. There is also submitted herewith as Exhibit "C", a geological report covering the proposed expansion prepared by Crandall D. Jones, Area Geologist for the Humble Oil & Refining Company, together with revised structure map contoured on the top of the Bend Sand zone and a North-South Cross Section of said zone based on the following wells: Humble Oil & Refining Company No. 2 Chalk Bluff Draw Unit well located 1930' FSL and 1880' FWL, Sec. 32, Twp. 17 S., Rge. 27 E.; Humble Oil & Refining Company No. 1 Chalk Bluff Draw Unit well located 2055' FSL and 1980' FWL, Sec. 5, Twp. 18 S., Rge. 27 E.; Humble Oil & Refining Company No. 3 Chalk Bluff Draw Unit well located 2260' FNL and 400' FEL, Sec. 8, Twp. 18 S., Rge. 27 E.; and Humble Oil & Refining Company No. 1 Chalk Bluff Draw Unit "C" well located 1980' FNL and 1980' FEL, Sec. 17, Twp 18 S., Rge. 27 E.

4. There is also submitted herewith, as Exhibit "D", a preliminary reservoir evaluation of the Chalk Bluff Draw Unit, which evaluation was prepared by Unit Operator.

5. That the proposed second revision or expansion of the Pennsylvanian Bend participating area is predicated upon the knowledge and information obtained from the completion of the Chalk Bluff Draw No. 1 "C" well located 1980' from the north and east lines Section 17, Twp. 18 S., Rge. 27 E. This well was drilled to a total depth of 9850' and completed as a well capable of producing gas in paying quantities from the Bend formation as of July 23, 1959, with an initial production of 14,000 MCFGPD. It is, therefore, requested that the second expansion of the participating area be effective as of July 1, 1959.

THE STATE OF TEXAS,
COUNTY OF HARRIS

Ray H. Horton

Before me, the undersigned authority, on this day personally appeared.....
....., known to me to be the person whose name is subscribed to
the foregoing instrument, as..... PRESIDENT,
HUMBLE DIVISION..... of Humble Oil & Refining Company,
and acknowledged to me that he executed the same for the purposes and consideration therein expressed, in
the capacity stated, and as the act and deed of said Humble Oil & Refining Company.

Given under my hand and seal of office, this the 20th day of June

A. D., 1960

Wavie Kallander
Wavie Kallander
Notary Public in and for
HARRIS
.....County, Texas

My commission expires:
June 1, 1961



EXHIBIT "C"

THIRD GEOLOGIC REPORT
for the
CHALK BLUFF DRAW AREA
EDDY COUNTY, NEW MEXICO

The Chalk Bluff Draw Unit, located in north-central Eddy County, New Mexico, was approved December, 1955. Since approval, four exploratory Bend sand wells have been drilled within the Unit area, resulting in three small Pennsylvanian gas producers and one dry hole. (See Exhibit "A")

Participating areas for the No. 1 and No. 3 Chalk Bluff wells were approved August 8, 1958. (See Exhibit "A") Since the first revision of the participating area was approved, an additional well, the Chalk Bluff Draw Unit No. 1-C, (located 1980 feet from the north and east lines of Section 17, T-18-S, R-27-E), has been drilled. The well was drilled to a TD of 9850 feet in the Bend formation and was completed July 23, 1959, as a Bend sand gas producer with an initial potential of 14,000 MCFGPD. It has been shut-in since completion due to lack of a gas contract.

This report has been prepared to enlarge the participating area to include the Chalk Bluff Unit No. 1-C well within the limits of the Chalk Bluff Unit Area, and should be regarded as a supplement to the second geologic report which is found in the report for initial and first revision of the participating area.

A revised structure map, contoured on the top of the Bend sand zone, is attached. This map, similar to the map in the old report, reflects regional southeast dips of 75 to 150 feet per mile. The Bend sand may be a terrace deposit. All geologic information indicates stratigraphic accumulation instead of structural closure (See cross-section attached). Recent development in the Atoka Pennsylvanian field has established productive limits to the northwest and southeast. Where the productive sand occurs within a distance of about a

mile, production could continue to the northeast and southwest. In the Chalk Bluff Draw Unit productive limits have been established to the northwest by the Chalk Bluff No. 2. The sand thickness is decreasing to the southeast.

Basic data from the three Chalk Bluff wells still indicates a small reservoir of marginal nature, even though it is larger in areal extent than other Bend sand reservoirs in the area. Reservoir analysis based on both geologic and pressure-production data now indicates the reservoir to have an estimated recoverable gas volume of 25,245 MM cubic feet.

Humble Oil & Refining Company as Unit Operator, with the approval of other working interest owners involved, requests the approval of an additional 640 acres participating area around the Chalk Bluff Draw Unit, Well No. 1-C (as defined in Exhibit "A") for the following reasons:

- (1) Geology of the area indicates gas accumulation is due to a stratigraphic trap in which sand development, porosity, and permeability are the governing factors.
- (2) Geologic and reservoir data now available indicates 640 acres surrounding each producer is reasonably proved to be productive of unitized substances.
- (3) Economics (See Exhibit 12) suggests drilling on a spacing pattern of less than 640 acres to be unfavorable.
- (4) After the Chalk Bluff Draw reservoir has been produced for a longer period of time, more reservoir data will be obtained which will influence a future development program.

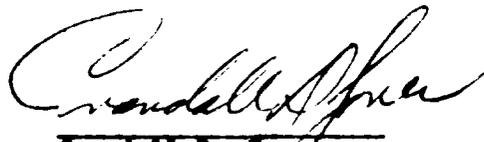

Crandall D. Jones
Area Geologist

EXHIBIT "D"

**PRELIMINARY RESERVOIR EVALUATION
CHALK BLUFF DRAW UNIT**

I. PRODUCTION

Period	Well No. 1				Well No. 3			
	Monthly		Cumulative		Monthly		Cumulative	
	Gas Mcf	Cond. Bbls.	Gas Mcf	Cond. Bbls.	Gas Mcf	Cond. Bbls.	Gas Mcf	Cond. Bbls.
July 1956	17,116	99	17,116	99				
Aug.	56,697	216	73,813	315				
Sept.	43,163	219	116,976	534				
Oct.	1,095	0	118,071	534				
Nov.	5,753	57	123,824	591				
Dec.	13,822	111	137,646	702				
Jan. 1957	5,442	5	143,088	707				
Feb.	2,419	6	145,507	713				
Mar.	0	0	145,507	713				
Apr.	3,016	5	148,523	718				
May	4,428	34	152,951	752				
June	2,257	7	155,208	759				
July	0	0	155,208	759				
Jan. 1959	59,561	333	214,769	1,092	120,140	185	120,140	185
Feb.	56,796	297	271,565	1,389	59,818	106	179,958	291
Mar.	74,027	371	345,592	1,760	56,603	64	236,561	355
Apr.	79,350	392	424,942	2,152	38,749	74	275,310	429
May	73,491	330	498,433	2,482	25,745	22	301,055	451
June	83,442	494	581,875	2,976	50,148	85	351,203	536
July	100,303	510	682,178	3,486	49,383	84	400,586	620
Aug.	101,550	530	783,728	4,016	43,067	45	443,653	665
Sept.	108,870	558	892,598	4,574	38,589	39	482,242	704
Oct.	112,145	557	1,004,743	5,131	32,678	37	514,920	741
Nov.	103,340	494	1,108,083	5,625	35,599	42	550,519	783
Dec.	81,566	374	1,189,649	5,999	30,514	35	581,033	818
Jan. 1960	103,734	513	1,293,383	6,512	40,225	33	621,258	851
Feb.	105,024	467	1,398,407	6,979	42,634	38	663,892	889

II. RECOVERABLE GAS

Based on reservoir temperature of 153°F, gas gravity of 0.598, original reservoir pressure of 3732 psia, base pressure of 15,025 psia and base temperature of 60°F, calculated volume equivalent of 0.75 barrels reservoir void is 1 Mcf of gas. Assuming average net pay of 22.3 feet, average porosity of 8%, average connate water content of 25% and 95% recovery of gas in place,

Recoverable gas per 640-acre area=

$$22.3 \times 0.08 \times (1-0.25) \times 7758 \times 0.95 \times 640 \times 1/0.75 = 8,415,000 \text{ Mcf,}$$

Recoverable gas per 1920-acre area=

$$8,415,000 \times 3 = 25,245,000 \text{ Mcf.}$$

III. APPROXIMATE ECONOMICS FOR 1920-ACRE PARTICIPATING AREA

Recoverable gas	25,245,000 Mcf
Revenue*	\$ 2,633,000
Development Costs	
Drilling and Lease Facilities**	898,000
Lease Bonuses**	324,500
Lease Rentals and Cost of Forming Unit	<u>38,800</u>
	\$ 1,261,300
Ultimate Profit (Before Federal Income Tax)	\$ 1,642,000
Ratio of Profit to Investment (Before Federal Income Tax)	1.09
Estimated Life of Project	14 Years

*Net of \$0.1043 per Mcf, including value of liquids produced, after royalty, state taxes and operating expenses.

**Investment costs.

EXHIBIT D

PRELIMINARY RESERVOIR EVALUATION
CHALK BLUFF DRAW UNIT

I. PRODUCTION - PRESSURE DATA: Well No. 1

Period	Production		Cumulative Production		Bottom-Hole Pressure		
	Gas: MCF	Dist: Bbls	Gas: Mcf	Dist: Bbls	Date	Hours Shut-In	Pressure Psi
July 1956	17,116	99	17,116	99	4-16-56	48	3,719
(Est to Aug 20)	(36,600)		(53,716)		8-20-56	49	3,712
August	56,697	226	73,813	325	9-24-56	68	3,702
(Est to Sept 24)	(34,500)		(108,300)				
September	43,163	219	116,976	544			
October	1,095	0	118,071	544			
November	5,753	57	123,824	601			
December	13,822	111	137,646	712			
January 1957	5,442	5	143,088	717			
February	2,419	6	145,507	723			
March	0	0	145,507	723			
April	3,016	5	148,523	728			
May	4,428	34	152,951	762			
June	2,257	7	155,208	769	7-1-57	147	3,691

II. RECOVERABLE GAS RESERVE

A. From pressure decline, assuming 95% ultimate pressure depletion

(1) Based on overall decline:

$$\text{Gas produced per unit of pressure decline} = \frac{155,208}{(3,719 - 3,691)} = 5,543 \text{ MCF/Psi}$$

$$\text{Recoverable gas} = 5543 \times 3719 \times .95 = 19,583,700 \text{ Mcf}$$

(2)* Based on decline below 3,712 psi:

$$\text{Gas produced per unit of pressure decline} = \frac{155,208 - 53,716}{3,712 - 3,691} = 4,833 \text{ MCF/Psi}$$

$$\text{Available pressure decline below 3,691 psi} = (3,691 - .05 \times 3,719) = 3,505 \text{ psi}$$

$$\text{Recoverable gas} = 155,208 + (4,833 \times 3,505) = 17,094,900 \text{ MCF}$$

* Considered the more representative

B. From geologic data with reservoir temperature 153° F, Gas Gravity .598, calculated volume equivalent of 0.75 bbls reservoir void per MCF at Standard Conditions, assumed connate water content of 25%, 22.5 feet of net pay, 8% porosity, and assuming recovery of 95% of gas in place.

$$\text{Recoverable gas per 640-acre area} = 22.5 \times .08 \times .75 \times 7758 \times 640 \times .95 \times 1/.75 = 8,490,000 \text{ MCF}$$

$$\text{Recoverable gas per 1280-acre area} = 16,980,000 \text{ MCF}$$

C. Reasonable agreement observed between recoverable gas as determined from pressure decline at Well No. 1 and from geologic data for 1280-acre productive area

III. APPROXIMATE ECONOMICS: ASSUMING A 1280-ACRE PARTICIPATING AREA

	<u>Pressure Decline</u>	<u>Geologic Data</u>
Recoverable gas:	17,094,900 MCF	16,980,000 MCF
Revenue (Net of \$0.10/MCF After royalty, taxes, and other operating expenses)	\$ 1,709,490	\$ 1,698,000
Less Development Costs:		
Drilling Costs *	\$ 706,600	\$ 706,600
Lease Bonuses *	324,500	324,500
Lease Rentals and Cost of Forming Unit	38,800	38,800
Ultimate Profit	\$ 639,590	\$ 628,100
Ratio Profit to Investment	0.62	0.61

* Investment Costs

Western Division
Petroleum Engineering Section
JLC/va 4-21-58

Prepared by:

J. I. C. L. S. L. S.

C CONSERVATION COMMISSIC
P. O. BOX 871
SANTA FE, NEW MEXICO

960

July 20, 1960

Humble Oil & Refining Company
P. O. Box 1287
Roswell, New Mexico

Attention: Mr. R. M. Richardson

Re: Plan of Development,
Abo Formation, Last Half 1960,
Chalk Bluff Draw Unit, Eddy
County, New Mexico

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Plan of Development for the last half of 1960 for the Abo formation, Chalk Bluff Draw 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.

Three approved copies of the Plan are being forwarded to the Commissioner of Public Lands for his consideration.

Very truly yours,

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

ALP/DSN/jr

cc: Commissioner of Public Lands
Santa Fe, New Mexico

United States Geological Survey
Roswell, New Mexico

C
O
P
Y

HUMBLE OIL & REFINING COMPANY

HUMBLE DIVISION

P. O. BOX 1287

ROSWELL, NEW MEXICO

July 13, 1960

In re: Plan of Development
Abo Formation
Chalk Bluff Draw Unit
Last Half 1960

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

Gentlemen:

We are enclosing four copies of our plan of development for the Chalk Bluff Draw Unit, Eddy County, New Mexico, covering the period of time from July 1, 1960 to December 31, 1960.

The plan actually covers only the Abo formation since the Pennsylvanian (Bend) formation was covered for a full year in our plan filed and effective January 1, 1960 through December 31, 1960.

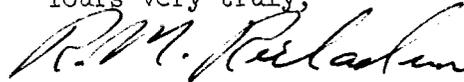
We have filed six copies of the enclosed plan with the U.S.G.S. for their simultaneous approval.

We would be sincerely appreciative if you would approve the enclosed plan, forwarding to the Commissioner for his approval.

By copy of this letter we are enclosing our personal check in the amount of \$4.00 to the Commissioner for filing fees required by Mrs. Rhea, and requesting that after the plan is approved by the Commissioner that it be returned to us here in Roswell.

We will forward evidence of approval by the U.S.G.S. after it has been received by us. If there are any questions, or you need additional information, please contact us here in Roswell.

Yours very truly,



R. M. Richardson

RMR/dm
Encls.

cc: Commissioner of Public Lands
Santa Fe, New Mexico - Attention: Unit Division

1960 JUL 13 PM 1 03
MAIL OFFICE 0000

CHALK BLUFF DRAW UNIT AREA

EDDY COUNTY, NEW MEXICO

TO: Executive Secretary
New Mexico Oil Conservation Commission
Santa Fe, New Mexico

Commissioner of Public Lands of the
State of New Mexico
Santa Fe, New Mexico

Supervisor
United States Geological Survey
Roswell, New Mexico

APPLICATION FOR APPROVAL OF PLAN OF DEVELOPMENT FOR
CHALK BLUFF DRAW UNIT AREA FOR PERIOD FROM
JULY 1, 1960 TO DECEMBER 31, 1960

Comes the undersigned, Humble Oil & Refining Company, the unit operator under the Chalk Bluff Draw Unit Agreement heretofore approved by the New Mexico Oil Conservation Commission, the Commissioner of Public Lands of the State of New Mexico, and the Director of the United States Geological Survey, and submits for approval of the New Mexico Oil Conservation Commission, the Commissioner of Public Lands and the Supervisor of the United States Geological Survey the plan hereinafter set forth for the further development and operation of the Chalk Bluff Draw Unit Area as to the Abo formation for the period of time July 1, 1960, through December 31, 1960.

1. That a plan of development covering the period from January 1, 1960, to July 1, 1960, has heretofore been approved by the New Mexico Oil Conservation Commission, Commissioner of Public Lands and by the Regional Supervisor of the United States Geological Survey. This plan called for the drilling of nine Abo wells within the unit area, the locations of which were set forth in the plan, all of which have been drilled and completed as producing Abo oil wells.

2. That in addition to the nine wells which were to be drilled under the plan heretofore approved, two additional wells are in the process of being drilled to the Abo formation. One of these wells is located in approximately the center of the NW $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 16, T-18-S, R-27-E, N.M.P.M., and it is anticipated that this well will be completed on or before July 1, 1960. The other well which is located in approximately the center of the NE $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 17, T-18-S, R-27-E, N.M.P.M., will be substantially completed by July 1, 1960.

3. In addition to the two wells above mentioned which are presently being drilled, the unit operator proposes to drill eight additional wells to the Abo formation by December 31, 1960, a well to be located upon each of the following 40-acre legal sub-divisions:

Township 18 South, Range 27 East

Section 16: SE $\frac{1}{4}$ NW $\frac{1}{4}$,
SW $\frac{1}{4}$ NW $\frac{1}{4}$

Section 17: SE $\frac{1}{4}$ NE $\frac{1}{4}$,
NE $\frac{1}{4}$ SE $\frac{1}{4}$,
NW $\frac{1}{4}$ SE $\frac{1}{4}$,
SW $\frac{1}{4}$ SE $\frac{1}{4}$,
NE $\frac{1}{4}$ SW $\frac{1}{4}$,
SE $\frac{1}{4}$ SW $\frac{1}{4}$

It is contemplated that in carrying out the development program as set forth above that two rigs will be kept in continuous operation moving from one location to another as soon as each well is completed so that the wells will be drilled with due diligence and with as little delay as possible.

Dated as of the first day of July, 1960.

Respectfully submitted,

HUMBLE OIL & REFINING COMPANY

By A. J. Steinmann
Unit Operator

Assistant Exploration Manager — Western Area
Humble Division

APPROVED	
Desc.	<i>[Handwritten]</i>
Acreage	<i>[Handwritten]</i>
Int.	<i>[Handwritten]</i>
Form	<i>[Handwritten]</i>
Acctg.	<i>[Handwritten]</i>
Prod.	<i>[Handwritten]</i>
Trade	<i>[Handwritten]</i>

Approved 7-20-60
A. L. Porter
Secretary-Director
New Mexico Oil Conservation Commission

Approved _____

Commissioner of Public Lands

Approved _____

Director
United States Geological Survey

NEW MEXICO OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

June 29, 1960

C
O
P
Y

Humble Oil & Refining Company
Exploration Department
P. O. Box 1287
Roswell, New Mexico

Attention: Mr. R. M. Richardson

Re: Second Revision of the
Pennsylvania Bend Part-
icipating Area, Chalk
Bluff Draw Unit, Eddy
County, New Mexico.

Gentlemen:

This is to advise that the New Mexico Oil Conservation Com-
mission has this date approved the Second Revision of the Pennsylvania
Bend Participating Area for the Chalk Bluff Draw 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.

Six approved copies of the application are being forwarded to
the Commissioner of Public Lands.

Very truly yours,

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

ALP/JEK/jar

cc: United States Geological Survey - Roswell

State Land Office - Santa Fe

1624N OFFICE Box 5721
Roswell, New Mexico

1960 JUN 22 PM 1 12

June 28, 1960

Humble Oil & Refining Company
P. O. Box 1287
Roswell, New Mexico

Attention: Mr. R. W. Richardson

Gentlemen:

Your undated application for approval of the initial Abo Reef participating area (160 acres) for the Chalk Bluff Draw unit agreement (No. 14-08-001-2447) Eddy County, New Mexico was approved by the Acting Director, U. S. Geological Survey on June 22, 1960.

Two approved copies of the application are enclosed. Please furnish all other interested parties with appropriate evidence of this approval.

Very truly yours,

(Orig. Sgd.) JOHN A. ANDERSON

JOHN A. ANDERSON
Regional Oil and Gas Supervisor

Enclosure

Copy to: Washington (ltr only)
Artesia (w/cy approved application)
ELM-Santa Fe " "
NM Comm. Pub. Lands (ltr. only) (Attn: Mrs. Rhea)
EMOCC, Santa Fe (ltr. only)

In reply refer to:
Unit Division

April 28, 1960

Case 1960

Humble Oil and Refining Company
P. O. Box 1287
Roswell, New Mexico

Re: Chalk Bluff Draw Unit
Eddy County, New Mexico

ATTENTION: Mr. R. M. Richardson

Gentlemen:

The Commissioner of Public Lands, has approved as of April 27, 1960 your application for the Initial Participating Area, for the Abo Reef Formation, Chalk Bluff Draw Unit Area.

We are enclosing six approved copies of the aforementioned application.

Our official receipt No. 36064 in the amount of \$8.00 covering the handling of this application was mailed prior to this date.

Please notify this office when this application has been fully approved.

Very truly yours,
MURRAY E. MORGAN
Commissioner of Public Lands

BY:
Ted Bilberry, Supervisor
Oil and Gas Division

MEM/MER/s
cc:

Oil Conservation Commission-Santa Fe
United States Geological Survey-Roswell

NEW MEXICO CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

Just read

April 26, 1960

C
O
P
Y

Humble Oil & Refining Company
Exploration Department
P. O. Box 1287
Roswell, New Mexico

Attention: Mr. R. M. Richardson

Re: Initial Abo Participating
Area, Chalk Bluff Draw
Unit, Eddy County, New
Mexico.

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Initial Participating Area, Abo Reef Formation, for the Chalk Bluff Draw 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.

Seven approved copies of the Participating Area are being forwarded to the Commissioner of Public Lands for his consideration.

Very truly yours,

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

ALP/DSN/pj

cc: United States Geological Survey - Roswell

Commissioner of Public Lands - Santa Fe

HUMBLE OIL & REFINING COMPANY

EXPLORATION DEPARTMENT

P. O. BOX 1287

ROSWELL, NEW MEXICO

April 14, 1960

In re: Chalk Bluff Draw Unit
Abo Participating Area
Eddy County, New Mexico

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

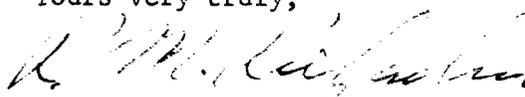
ATTENTION: Mr. Pete Porter

Dear Sir:

We are enclosing 8 copies of our Application for Approval of the Initial Abo Participating Area, Chalk Bluff Draw Unit, Eddy County, New Mexico. The application is self-explanatory and contains all of the information on which you may base your approval. We will be sincerely appreciative if you will approve the enclosed application, forwarding all copies to the Commissioner of Public Lands for his approval.

In the event all is not in order or you need additional information, please call on us collect here in Roswell, Box 1287.

Yours very truly,



R. M. Richardson

RMR:fd

Encl.

cc: Commissioner of Public Lands
P. O. Box 791
Santa Fe, N. M.
U. S. G. S.
P. O. Box 6721
Roswell, N. M.

Re: Unit Agreement for the
Development and Operation
of the Chalk Bluff Draw
Unit Area, Eddy County,
New Mexico

APPLICATION FOR APPROVAL OF INITIAL PARTICIPATING AREA
CHALK BLUFF DRAW UNIT AREA
FOR THE ABO REEF FORMATION

To: Director,
United States Geological Survey

Commissioner of Public Lands
State of New Mexico

New Mexico
Oil Conservation Commission

Comes the Humble Oil & Refining Company, as Unit Operator for the Chalk Bluff Draw Unit Agreement approved by the New Mexico Oil Conservation Commission on October 13, 1955, by the Commissioner of Public Lands on November 10, 1955, and by the Director of the United States Geological Survey on December 29, 1955, and pursuant to the provisions of Section 11 of said unit agreement respectfully submits for the approval of the Director, Commissioner and Commission the selection of the following described lands to constitute the initial participating area for the Abo Reef producing zone or formation, effective as of the date of the first production, to-wit:

Township 18 South, Range 27 East, N.M.P.M.

Section 9: $E\frac{1}{2}W\frac{1}{2}$

containing 160 acres, more or less

The following is submitted in support of this application:

(1) There is attached hereto, made a part hereof and for purposes of identification marked Exhibit "A", an ownership map showing the boundaries of the unit area; the character of the lands involved, i. e. federal, state and fee lands; the ownership of the oil and gas leases committed to the unit area; the producing wells which have been completed

in the Abo formation on lands adjacent to the unit area and upon lands embraced in the unit; and the location of the wells which are being drilled upon the unit at the present time. Said Exhibit "A" also shows by distinctive "dot symbols" the proposed initial participating area.

(2) There is also attached hereto, made a part hereof and for purposes of identification marked Exhibit "B", a schedule showing the lands entitled to participation in the unitized substances which may be produced from the Abo formation within the initial participating area with the percentage of participation of each lease or tract indicated thereon.

(3) There is also submitted herewith a geological report marked Exhibit "C", prepared by Crandall D. Jones, Area Geologist for the Humble Oil & Refining Company. Attached to, and made a part of, the geological report is a structural map prepared in March 1960, showing contours on top of the Abo Reef Formation, and an isopachous map showing effective pay thickness, prepared in April 1960.

(4) There is also attached hereto a schedule of wells, marked Exhibit "D", showing the locations, depths, producing zones, potential, etc., of the completed producing wells offsetting the Chalk Bluff Draw Unit.

The geological report, Exhibit "C", shows the locations, potentials, dates of completion, etc., on the four wells completed to date inside the Chalk Bluff Draw Unit Area.

Under the plan of development heretofore filed by applicant and duly approved in accordance with the unit agreement, Humble, as unit operator, plans to drill five additional wells, the same to be drilled upon the following 40-acre legal subdivisions:

Township 18 South, Range 27 East, N.M.P.M.

Section 4: SE $\frac{1}{4}$ SW $\frac{1}{4}$
Section 9: SW $\frac{1}{4}$ NW $\frac{1}{4}$
Section 9: NW $\frac{1}{4}$ SW $\frac{1}{4}$
Section 9: SW $\frac{1}{4}$ SW $\frac{1}{4}$
Section 16: NE $\frac{1}{4}$ NW $\frac{1}{4}$

The proposed initial participating area, consisting of the E $\frac{1}{2}$ W $\frac{1}{2}$ Section 9, Township 18 South, Range 27 East, N.M.P.M., containing 160 acres, is offset to the east by four producing wells outside of the unit area and which are more particularly described on the schedule attached hereto as Exhibit "D". There has also been completed a well upon each of the 40-acre legal subdivisions making up the proposed initial participating area and each of said wells is considered as being capable of producing unitized substances in paying quantities and it is believed that all of the entire 160 acres may be considered as reasonably proved to be productive of unitized substances in paying quantities. The first production obtained upon the proposed participating area was on February 3, 1960, and it is, therefore, proposed that the initial participating area be effective as of that date.

Although there are a total of six completed wells offsetting the Unit area, it is felt that the two northernmost wells, the Pan American Windfohr Federal #3 and #4, do not at this time indicate that the offsetting acreage in the unit area is productive of unitized substances. As shown by the attached geological report and geological maps the Abo Reef Formation is extremely erratic and to the west of these two wells the effective pay, based on porosity, is extremely thin and tight and probably of a marginal nature. The offset to the Pan American Windfohr Federal #3 is presently drilling, (The Humble Chalk Bluff Draw Unit Abo #5), however, it cannot be said that the acreage on which #5 well is located is productive and applicant strongly feels that such acreage should not be included in the initial participating area.

Applicant cannot at this time state with any degree of certainty that the W $\frac{1}{2}$ W $\frac{1}{2}$ Section 9, T-18-S, R-27-E is reasonably proven to be productive of unitized substances in paying quantities and it is believed that such acreage should not be included in the initial participating area. The Chalk Bluff Draw Unit well #3, located 1310' FNL and 330" FEL of Section 8, T-18-S, R-27-E, now completed as a Pennsylvanian (Bend) gas producer, penetrated the Abo Reef Formation; however, there were no indications that the Abo

Reef would produce unitized substances in such well; consequently, it is strongly felt that the undrilled acreage lying between the present Abo production and this #3 well is not proven productive and should not be included in the initial participating area.

Two of the additional five wells to be drilled and previously mentioned herein, located in the $SE\frac{1}{4}SW\frac{1}{4}$ Section 4 and the $NE\frac{1}{4}NW\frac{1}{4}$ Section 16, are presently drilling and should be completed within the next few weeks. In the event these wells result in the production of oil or gas from the Abo Reef Formation in sufficient quantities to justify their inclusion in the participating area, it is proposed that the initial participating area will be enlarged to embrace the same, effective the first of the month in which is obtained the knowledge on which the enlargement is predicated.

The additional three wells covered by the present plan of development will be completed as rapidly as the same can be drilled with the two rigs which are now being used by Operator in connection with operations upon the unit area. It is further contemplated that as soon as these three wells are completed, and if they result in the production of oil or gas from the Abo formation in sufficient quantities to justify their inclusion in the participating area, that application will promptly be made for an additional revision of the participating area to include the 40-acre legal subdivisions upon which such producing wells may be located, the same to be effective the first of the month in which knowledge is obtained. It is further contemplated that a supplemental plan of development will be filed for approval upon the completion of the wells included in the present plan which will provide for the drilling of such additional wells as may be reasonably necessary to establish the producing limits of the Abo Reef Formation as to the lands embraced in the unit area and that as rapidly as producing wells are completed applications will be made for additional revisions of the participating area to include all lands which are proved to be productive from the Abo Reef Formation.

As indicated by the geological report submitted herewith, the structural relief in the area is not a controlling factor in the oil entrapment within the Empire-Abo Reef and inasmuch as the entrapment is mainly stratographic it is difficult to determine the extent of the lands which are reasonably proven by the drilling of any well and it would be extremely hazardous to include more than the 40-acre legal subdivision upon which each producing well is located in the participating area. Because of this situation, and with the drilling program being carried on by Unit Operator, it is believed to be for the best interest of all concerned that the initial participating area and the successive revisions of the same to include additional lands be limited to the 40-acre legal subdivisions upon which have been completed wells producing from the Abo Reef formation. Such a procedure will eliminate the inclusion within the participating area of lands which are not productive from the Abo formation and will tend to create a more equitable situation among the working interest and royalty owners involved as to participation from the time of actual production upon the respective tracts in which they are interested.

WHEREFORE, applicant respectfully requests that the initial participating area as outlined hereinabove be approved by the Director of the United States Geological Survey, the Commissioner of Public Lands and the New Mexico Oil Conservation Commission as provided by the unit agreement.

Respectfully submitted,

HUMBLE OIL & REFINING COMPANY

By 

UNIT OPERATOR

HERVEY, DOW & HINKLE

By _____
Roswell, New Mexico
Attorneys for Applicant

INITIAL PARTICIPATING AREA

ABO REEF FORMATION

CHALK BLUFF DRAW UNIT

EDDY COUNTY, NEW MEXICO

Approved 4/25/60

A. L. Porter Jr

Secretary-Director
New Mexico Oil Conservation Commission

Approved _____

Commissioner of Public Lands

Approved _____

Director
United States Geological Survey

COPY

HUMBLE OIL & REFINING COMPANY

April 7, 1960

In re: Plan of Development
Chalk Bluff Draw Unit
Eddy County, New Mexico

United States Geological Survey
P. O. Box 6721
Roswell, New Mexico

ATTENTION: Mr. Edwin M. Thomasson

Dear Sir:

We are enclosing one copy of our Plan of Development for your files, which copy has been executed by the Oil Conservation Commission and the Commissioner of Public Lands. We are also enclosing two copies of the Plan of Development which have been conformed as to signatures and date of execution by the OCC and Commissioner.

We respectfully request that you execute both copies of the conformed plan of development and forward to the OCC and Commissioner in the envelopes provided.

If all is not in order or if you need additional information, please advise.

Yours very truly,

R. M. Richardson

RMR:fd

Encs.

cc: Commissioner of Public Lands
P. O. Box 791
Santa Fe, New Mexico
Attn: Unit Division
Oil Conservation Commission ✓
P. O. Box 871
Santa Fe, New Mexico

In reply refer to:
Unit Division

March 31, 1960

C
O
P
Y

Humble Oil & Refining Company
Exploration Department
P. O. Box 1287
Roswell, New Mexico

ATTENTION: Mr. R. M. Richardson

Re: 3rd Plan of Development
for 1960, Chalk Bluff Draw Unit,
Eddy County, New Mexico

Gentlemen:

We are enclosing three copies of the above designated Plan of Development, which was approved by the Commissioner of Public Lands, March 30, 1960.

There will be a fee of three dollars for the approval of these forms.

Please furnish this office another copy of this application when fully executed.

Very truly yours,
MURRAY E. MORGAN
Commissioner of Public Lands

BY:
Ted Bilberry, Supervisor
Oil and Gas Division

MEM/MMR/s

cc: OCC-Santa Fe
USGS-Roswell

In reply refer to:
Unit Division

March 31, 1960

C
O
Humble Oil & Refining Company
Exploration Department
P. O. Box 1287
Roswell, New Mexico

P
ATTENTION: Mr. R. M. Richardson

Re: 2nd. Plan of Development for
1960, Chalk Bluff Draw Unit,
Eddy County, New Mexico

Y
Gentlemen:

We are enclosing six copies of the above designated Plan of Development, which was approved by the Commissioner of Public Lands March 30, 1960.

There will be a fee of six dollars for the approval of these forms.

Please furnish this office another copy of this application when fully executed.

Very truly yours,
MURRAY E. MORGAN
Commissioner of Public Lands
BY:
Ted Bilberry, Supervisor
Oil and Gas Division

MEM/MMR/m

cc:

OCC-Santa Fe
USGS-Roswell

NEW MEXICO OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

Handwritten initials and date: JEP 3/23/60

March 23, 1960

C
O
P
Y

Humble Oil & Refining Company
Exploration Department
P. O. Box 1287
Roswell, New Mexico

Attention: Mr. H. M. Richardson

Re: Third Plan of Development
for 1960, Chalk Bluff Draw
Unit, Eddy County, New Mexico.

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Third Plan of Development for 1960 for the Chalk Bluff Draw 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.

Four approved copies of the Third Plan of Development are forwarded to the Commissioner of Public Lands.

Very truly yours,

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

ALP/JEK/pj

cc: State Land Office - Santa Fe

United States Geological Survey - Roswell

HUMBLE OIL & REFINING COMPANY

EXPLORATION DEPARTMENT

P. O. BOX 1287

ROSWELL, NEW MEXICO

March 8, 1960

In re: Chalk Bluff Draw Unit Plan of
Development 1960

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

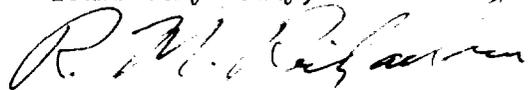
ATTENTION: Mr. A. L. Porter, Jr.

Gentlemen:

We have previously furnished two sets of two Plan of Developments of the Chalk Bluff Draw Unit for the calendar year of 1960. The first Plan of Development specified two Abo wells with continuous drilling. The second Plan provided for eight Abo wells to be completed prior to July 1, 1960. We are now enclosing five copies of still a new third Plan of Development calling for nine wells. This change was occasioned by our decision, in combination with Gulf Oil Corporation, to drill their State Lease covering the NE $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 16, T-18-S, R-27-E. This is Gulf's State Lease E-3635.

We would be sincerely appreciative if you would approve the enclosed new Plan of Development, handing four copies to the Commissioner of Public Lands for his approval requesting that same be approved by him, and returning to us here in Roswell.

Yours very truly,



R. M. Richardson

RMR:lm
Enclosure

cc: Commissioner of Public Lands
P. O. Box 791
Santa Fe, New Mexico

Attention: Unit Division

U. S. G. S.
P. O. Box 6721
Roswell, New Mexico

COPY

HUMBLE OIL & REFINING COMPANY

March 8, 1960

In re: Chalk Bluff Draw Unit Plan of
Development 1960

Commissioner of Public Lands
P. O. Box 791
Santa Fe, New Mexico

ATTENTION: Unit Division

Dear Sir:

We are enclosing copy of letter to the New Mexico Oil Conservation Commission requesting that they approve a new Plan of Development for the Chalk Bluff Draw Unit. This new Plan should take place of the previously furnished Plan forwarded to you by the Conservation Commission on February 23, 1960.

We felt that it would be easier to file a completely new Plan calling for nine Abo wells than to amend the Plan now in your possession for your approval.

We would be sincerely appreciative if you would approve the 1960 Plan of Development forwarded to the Oil Conservation Commission by letter of even date.

Thank you very much.

Yours very truly,

R. M. Richardson

RMR:lm
Enclosure

cc: New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico Attention: Mr. A. L. Porter, Jr.

U. S. G. S.
P. O. Box 6721
Roswell, New Mexico

COPY

HUMBLE OIL & REFINING COMPANY

March 8, 1960

In re: Chalk Bluff Draw Unit
Plan of Development 1960

U. S. G. S.
P. O. Box 6721
Roswell, New Mexico

ATTENTION: Mr. John Anderson

Dear Sir:

We are attaching hereto copy of letter to the Oil Conservation Commission, copy of letter to the Commissioner of Public Lands, and six copies of a new Plan of Development for the Chalk Bluff Draw Unit for the calendar year of 1960. This new Plan covers nine Abo wells to be drilled as a further development of the Chalk Bluff Draw Unit Abo production.

We would be sincerely appreciative if you would approve the enclosed Plan of Development, returning approved copies to us here in Roswell, subject to like approval of the Oil Conservation Commission and the Commissioner of Public Lands.

Yours very truly,

R. M. Richardson

RMR:lm
Enclosures

cc: Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico Attention: Mr. A. L. Porter, Jr.

Commissioner of Public Lands
P. O. Box 791
Santa Fe, New Mexico Attention: Unit Division

In reply refer to:
Unit Division

March 11, 1960

Case #490

C
O
Humble Oil and Refining Company
P. O. Box 1287
Roswell, New Mexico

Re: Various Plans of Development
Chalk Bluff Draw Unit
Eddy County, New Mexico

P
ATTENTION: Mr. R. M. Richardson

Gentlemen:

Y In regard to your second Plan of Development covering the drilling of eight wells to the Abo Formation and your letter dated March 8, 1960, stating there is still a third Plan of Development being sent for our consideration, which in addition to the eight wells called for prior to July 1, 1960, under the second Plan of Development, also includes a well to be drilled in the NE/4NW/4 of Section 16, Township 18 South, Range 27-East.

This third Plan of Development has not been received by this office, however, in addition to the well to be drilled in the NE/4NW/4 of Section 16, Township 18-South, Range 27-East, we are also requesting a well be drilled in the NW/4NW/4 of Section 16, Township 18-South, Range 27-East, during the 1960 Calendar Year.

This office will require a fee of \$1.00 for each additional copy of this application, which we approve.

Very truly yours,
MURRAY E. MORGAN
Commissioner of Public Lands

BY:
Ted Bilberry, Supervisor
Oil and Gas Division

MEM/MMR/m

Humble Oil and Refining Co.
P. O. Box 1287
Roswell, New Mexico

3-11-60
(Page 2.)

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

United States Geological Survey
P. O. Box 6721
Roswell, New Mexico

C
O
P
Y

P. O. Box 6721
Roswell, New Mexico

March 9, 1960

Humble Oil & Refining Company
P. O. Box 1287
Roswell, New Mexico

Attention: Mr. R. M. Richardson

Gentlemen:

Your plan of development for 1960, dated January 1, 1960, and filed March 9, 1960, for the Chalk Bluff Draw unit area, No. 14-08-001-2447, Eddy County, New Mexico, which proposes the drilling of nine Abo formation wells, has been approved on this date subject to like approval by the appropriate State Officials. The plan of development is approved with the understanding that a supplemental plan of development will be submitted for approval upon completion of the nine aforementioned wells, but no later than July 1, 1960. Please furnish this office appropriate evidence of approval by the Commissioner of Public Lands, State of New Mexico and the New Mexico Oil Conservation Commission.

Three approved copies of the plan are enclosed.

Very truly yours,

ERWIN M. TEGHAISON
Acting Oil and Gas Supervisor

Enclosures

Copy to: Washington (w/cy of plan)
Artesia (w/cy of plan)
NMOCC, Santa Fe (ltr only)
Com. of Pub. Lands, Santa Fe (ltr only)

OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

Case #960

February 23, 1960

C
O
P
Y

Humble Oil & Refining Company
Exploration Department
P. O. Box 1287
Roswell, New Mexico

ATTENTION: Mr. R. M. Richardson

Re: Revised Plan of Development
for 1960, Chalk Bluff Draw
Unit, Eddy County, New Mexico.

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Plan of Development for 1960 for the Chalk Bluff Draw 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.

Seven approved copies of the 1960 Plan of Development are forwarded to the Commissioner of Public Lands.

Very truly yours,

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

ALP/JEK/pj

cc: Commissioner of Public Lands
Santa Fe, New Mexico

United States Geological Survey
Roswell, New Mexico

HUMBLE OIL & REFINING COMPANY

EXPLORATION DEPARTMENT

P. O. BOX 1287

ROSWELL, NEW MEXICO

February 16, 1960

Mr. A. L. Porter, Jr.
Secretary-Director
New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Dear Mr. Porter:

Under date of December 10, 1959, Mr. Clarence E. Hinkle forwarded to you eight copies of application of Humble for approval of the Plan of Development for the Chalk Bluff Draw Unit for the calendar year of 1960.

This plan was subsequently approved by you and later approved by the Commissioner. The approved plan was then filed with the U.S.G.S. for their approval.

Due to further speedy development and further drilling, the U.S.G.S. felt that our plan did not provide for enough Abo wells, consequently, such plan was returned to us unapproved. We are now enclosing to you eight copies of our new Plan of Development providing for a two rig, eight well program, with such wells to be completed prior to July 1, 1960.

We respectfully request that you approve the enclosed plan and thereafter hand seven copies to Mr. Murray Morgan for his approval, requesting that Mr. Morgan approve and forward to us here in Roswell, P. O. Box 1287, for our filing with the U.S.G.S.

Yours very truly,



R. M. Richardson

RMR/dm
Encis.

cc: Commissioner of Public Lands
P. O. Box 791
Santa Fe, New Mexico - Attention: Unit Division

United States Geological Survey
P. O. Box 6721
Roswell, New Mexico

U.S. CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

December 14, 1959

C
O
P
Y

Hervey, Dow & Hinkle
Hinkle Building
Roswell, New Mexico

ATTENTION: Mr. C. E. Hinkle

RE: Humble Oil & Refining Company
Plan of Development for 1960
Chalk Bluff Draw Unit, Eddy
County, New Mexico.

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Humble Oil & Refining Company Plan of Development for 1960 for the Chalk Bluff Draw 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.

Seven approved copies of the 1960 Plan of Development are forwarded to the Commissioner of Public Lands.

Very truly yours,

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

ALP:JEK:ig

cc: Commissioner of Public Lands - Santa Fe
US Geological Survey - Roswell

HUMBLE OIL & REFINING COMPANY

EXPLORATION DEPARTMENT

P. O. BOX 1287

ROSWELL, NEW MEXICO

December 14, 1959

In re: 1960 Plan of Development
Chalk Bluff Draw Unit
Eddy County, New Mexico

New Mexico Oil Conservation Commission
Santa Fe
New Mexico

Gentlemen:

On December 11, 1959, we forwarded to you a copy of our Plan of Development covering the Chalk Bluff Draw Unit.

In the third line from the bottom of Page 2 of such Plan, the location of the second Abo well is shown to be "the SE $\frac{1}{4}$ SW $\frac{1}{4}$ of said Section 9". This should read "the SE $\frac{1}{4}$ NW $\frac{1}{4}$ of said Section 9".

Please note your copy of the Plan to show the correct location. The first well is to be in the NE $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 9, and the second well is to be in the SE $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 9, Township 18 South, Range 27 East, Eddy County, New Mexico.

Yours very truly,

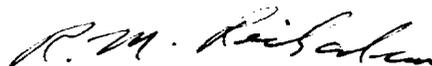


R. M. Richardson

RMR/dm

P.S.

*We called this morning and I understand
you have already made the necessary
correction -*



COPY

HERVEY, DOW & HINKLE, ATTORNEYS
ROSWELL, NEW MEXICO

December 10, 1959

Mr. Murray E. Morgan
Commissioner of Public Lands
State Land Office
P. O. Box 791
Santa Fe, New Mexico

Dear Mr. Morgan:

We enclose for your information copy of our letter to A. L. Porter, Jr., Secretary-Director of the New Mexico Oil Conservation Commission, sending him the Application of the Humble for approval of the plan of development for the Chalk Bluff Draw Unit Area for the calendar year 1960.

You will note that we have requested Mr. Porter to hand you the seven copies upon his approval. We would appreciate your prompt consideration and approval of the plan and returning the original and five approved copies to us to be filed with the United States Geological Survey. Upon approval by the United States Geological Survey, a fully approved copy will be forwarded to you and to the Commission for your files.

You will note that we have had an informal conference with the United States Geological Survey with respect to this plan of development and they have indicated that it will be satisfactory as far as they are concerned.

We would appreciate your returning the approved copies as quickly as possible.

Yours very truly,

HERVEY, DOW & HINKLE

By



CEH/bp
Encl.

cc: Humble Oil & Refining Company
Attn.: Mr. R. M. Richardson

cc: New Mexico Oil Conservation Commission

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

TELEPHONE MAIN 2-6510
POST OFFICE BOX 547

December 10, 1959

Mr. A. L. Porter, Jr.
Secretary-Director
New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Dear Mr. Porter:

We enclose herewith eight copies of Application of Humble Oil & Refining Company for approval of plan of development for the Chalk Bluff Draw Unit Area for the calendar year 1960.

We have had a conference with the United States Geological Survey with respect to the proposed plan and they have informally advised that the plan being presented will be acceptable as far as they are concerned.

You will note that two Obo wells are contemplated in the immediate future and probably additional wells will be drilled during the year 1960 depending upon the results obtained in the two wells drilled.

We would appreciate your approval in the place indicated of all of the copies and the delivery of the original and six copies to Murray Morgan, the Commissioner of Public Lands, for his approval. We are writing Mr. Morgan with respect to this matter.

Your prompt attention will be appreciated.

Yours very truly,

HERVEY, DOW & HINKLE

By Clarence E. Hinkle

CEH/bp
Encl.

cc: Humble Oil & Refining Company
Attn.: Mr. R. M. Richardson

cc: Commissioner of Public Lands

P. O. Box 6721
Roswell, New Mexico

File 760

April 3, 1959

Humble Oil & Refining Company
Box 1287
Roswell, New Mexico

Attention: Mr. R. M. Richardson

Gentlemen:

Your Plan of Development for 1959, dated February 5, 1959, for the Chalk Bluff unit area, Eddy County, New Mexico, which proposes the drilling of one Ahe formation well, has been approved on this date.

Seven approved copies of the plan are enclosed.

Very truly yours,

JOHN A. ANDERSON
Regional Oil and Gas Supervisor

Copy to: Washington (w/cy of plan)
Artesia (w/cy of plan)
Enclosures: NMOCC, Santa Fe (letter only) ✓
Comm. of Pub. Lands, Santa Fe (letter only)

CLARENCE OCC

In reply refer to:
Unit Division

RECEIVED FEB 10 1959

February 3, 1959

File
100

C

Hervey, Dow and Hinkle
Hinkle Building
Roswell, New Mexico

O

Re: Proposed Plan of Development
for calendar year 1959
Chalk Bluff Draw Unit
Eddy County, New Mexico

P

ATTENTION: Mr. Clarence E. Hinkle

Gentlemen:

We are enclosing ten copies of the above designated Plan of Development, which was handed to us by the New Mexico Oil Conservation Commission.

Y

This 1959 Plan of Development for the Chalk Bluff Draw Area, proposes to drill one additional well during the calendar year 1959, was approved by the Commissioner of Public Lands February 3, 1959, subject to like approval by the United States Geological Survey.

Very truly yours,
MURRAY E. MORGAN
Commissioner of Public Lands

BY:
Ted Bilberry, Supervisor
Oil and Gas Division

MEM/MMR/m

cc: OCC- Santa Fe
USGS- Roswell

OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

File
960

January 30, 1959

C
O
P
Y

Hervey Dow & Hinkle
Hinkle Building
Roswell, New Mexico

ATTENTION: Mr. Clarence Hinkle

RE: 1959 Plan of Development
Chalk Bluff Draw Unit
Eddy County, New Mexico.

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the 1959 Plan of Development for the Chalk Bluff Draw 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.

Eleven approved copies of the application were forwarded to the Commissioner of Public Lands of the State of New Mexico.

Very truly yours,

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

ALP/RLS/ig

cc: State Land Office - Santa Fe
US Geological Survey - Roswell

MAIL ROOM 000

1000 UNIT 100 CHALK BLUFF DRAW UNIT AREA

EDDY COUNTY, NEW MEXICO

TO: Executive Secretary,
New Mexico Oil Conservation Commission
Santa Fe, New Mexico

Commissioner of Public Lands of the
State of New Mexico
Santa Fe, New Mexico

Supervisor,
United States Geological Survey
Roswell, New Mexico

APPLICATION FOR APPROVAL OF PLAN OF DEVELOPMENT FOR
CHALK BLUFF DRAW UNIT AREA FOR CALENDAR YEAR 1959

Comes the undersigned, Humble Oil & Refining Company, Unit Operator under the Chalk Bluff Draw Unit Agreement heretofore approved by the New Mexico Oil Conservation Commission, the Commissioner of Public Lands of the State of New Mexico and the Director of the United States Geological Survey and which was effective as of December 29, 1955, and in conformity with the provisions of Section 10 of the unit agreement submits for approval of the New Mexico Oil Conservation Commission, the Commissioner of Public Lands and the Supervisor of the United States Geological Survey the plan hereinafter set forth for the further development and operation of the Chalk Bluff Draw Unit Area and in support thereof respectfully shows:

1. The Chalk Bluff Draw No. 1 well located 1980' from the South and West lines of Section 5, Township 18 South, Range 27 East, N.M.P.M., was completed April 13, 1956, as a well capable of producing gas and condensate from the Pennsylvanian Bend Sand at a depth from 9443' to 9465' with an initial potential of 8,482 MCF of gas per day.

The Chalk Bluff Draw No. 2 well, which was located 1930' from the South line and 1880' from the West line of Section 32, Township 17 South, Range 27 East, N.M.P.M., was drilled to a total depth of 9,425' and was plugged and abandoned as a dry hole on February 27, 1957.

The Chalk Bluff Draw No. 3 well, located 2310' from the North line and 330' from the East line of Section 8, Township 18 South, Range 27 East, N.M.P.M., was completed on July 8, 1957, at a depth of approximately 9,505' to 9,555'

with an initial potential of 2,107 MCF of gas per day. This well was worked over and sandfracked causing an increase in the potential gas production to 4,580 MCF of gas per day.

2. The New Mexico Oil Conservation Commission, the Commissioner of Public Lands and the Director of the United States Geological Survey have heretofore approved an initial participating area consisting of all of Section 5, Township 18 South, Range 27 East, N.M.P.M., containing 643.88 acres, and a revision thereof to also include the E $\frac{1}{2}$ Section 8 and the W $\frac{1}{2}$ Section 9, Township 18 South, Range 27 East, N.M.P.M., containing an additional 640 acres.

A total of 116,341 MCF of gas and 444 barrels of condensate were produced from the No. 1 well from July 23, 1956, to September 21, 1956, and the Unit Operator was unable to obtain a contract for the sale of additional gas until a pipe line connection was obtained as of January 2, 1959, and on account of which gas is now being sold from Wells Nos. 1 and 3.

On account of the lack of pipe line connections, the time for the submission of a plan for the further development and operation of the unit area in accordance with Section 10 of the unit agreement has been extended and the following plan is submitted with the approval of all of the working interest owners of the unit agreement:

PLAN OF DEVELOPMENT

Unit Operator proposes to drill one additional well during the calendar year of 1959, the same to be located 1980' FNL and 1980' FEL Section 17, Township 18 South, Range 27 East, N.M.P.M. It is proposed to commence operations upon said well within ninety days and to drill said well with due diligence to a depth sufficient to test the Abo formation and in the event the Abo, which is expected to be encountered at a depth of approximately 6,400', does not prove to be productive of unitized substances in paying quantities, and if the geological reports obtained in the drilling of said well warrant in the opinion of Unit Operator the deepening of the same, Unit Operator will consider drilling said well to a depth sufficient to test the Pennsylvanian Bend formation.

Due to the fact that only a relatively small amount of gas has been produced from the unit area there is not sufficient productive data to determine

the character of the reservoir from which said wells are producing and whether the drilling of additional wells is economically feasible. After said wells have been produced for a reasonable length of time Unit Operator and the other working interest owners will be in a better position to formulate a plan for the further development of the unit area.

DATED this the 20th day of January, 1959.

Respectfully submitted,

HUMBLE OIL & REFINING COMPANY

By Gene D. Oliver

Approved January 30, 1959
A. J. Peter
Secretary-Treasurer

NEW MEXICO OIL CONSERVATION COMMISSION

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 D. BLEDSOE

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

January 28, 1959

TELEPHONE MAIN 2-6510
POST OFFICE BOX 547

File
900

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

Re: Chalk Bluff Draw Unit Agreement

Dear Mr. Porter:

We enclose herewith twelve copies of Application for Approval of Plan of Development for Chalk Bluff Draw Unit Area for the calendar year 1959. We have discussed this plan with Mr. John Anderson of the U.S.G.S. and he has informally indicated that it is satisfactory with him.

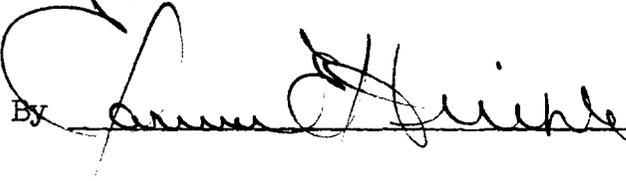
We would appreciate your approving the Plan and handing eleven copies to the Commissioner of Public Lands for his approval.

We are sending a copy of this letter to the Commissioner of Public Lands and request that upon approval of the Application by the Commissioner that ten approved copies be returned to us to be filed with the U.S.G.S. Upon approval by the U.S.G.S. you will be furnished and the Commissioner of Public Lands will be furnished with an approved copy showing approval by the U.S.G.S.

Your prompt attention to this matter will be appreciated.

Yours very truly,

HERVEY, DOW & HINKLE

By 

CEH/bp
Enclosures

cc: Murray E. Morgan
Commissioner of Public Lands
Santa Fe, New Mexico
cc: R. M. Richardson
Humble Oil & Refining Company
Roswell, New Mexico

August 14, 1958

File
Case
960

MAIN
1958 AUG 21

In re: Chalk Bluff Draw Unit
Eddy County, New Mexico

~~Commissioner of Public Lands
State Land Office
Santa Fe, New Mexico~~

Attention: Unit Division

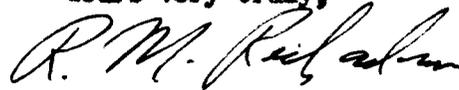
Dear Sir:

We are enclosing for your files one fully executed and approved copy of Humble's Application for Approval of Initial Participating Area and first revision thereof.

We are also, by copy of this letter, furnishing the Oil Conservation Commission with one complete copy and a photostat of page four showing the necessary governmental approvals.

If you need any information, please advise.

Yours very truly,



R. M. Richardson

RMR:ch

Encl.

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



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P. O. Box 6721
Roswell, New Mexico

July 23, 1958

Humble Oil and Refining Company
P. O. Box 1287
Roswell, New Mexico

Attention: R. M. Richardson

Gentlemen:

I have today approved your application for a six-months' extension of time in which to file a plan of development and operation for the Chalk Bluff Draw unit agreement (No. 14-08-001-2447), Eddy County, New Mexico. By virtue of such extension, the plan of development shall be filed for approval on or before January 8, 1959. Two copies of the approved application are enclosed for your records.

By copy of this letter the Commissioner of Public Lands, State of New Mexico, and the New Mexico Oil Conservation Commission are being informed of Geological Survey approval of your application. The application was approved by the Commissioner of Public Lands on July 2, 1958, subject to like approval by the Geological Survey. It is assumed you will inform all interested parties of this action.

Sincerely yours,

(Orig. Sgd.) JOHN A. ANDERSON

JOHN A. ANDERSON
Regional Oil and Gas Supervisor

Copy to: Humble (w/2 app. cys of application)
Wash. (w/app. cy of application)
Artesia (w/app. cy of application)
O.C.C.-Santa Fe
Comm. of Pub. Lands-Santa Fe

OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

July 2, 1958

*File
Case 966*

Harvey, Dow & Hinkle
P. O. Box 547
Roswell, New Mexico

Attention: Mr. Howard C. Bratton

Re: Revised initial and first
revision of the Pennsylvania
Bend participating area
Chalk Bluff Draw Unit
Eddy County, New Mexico

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the revised initial and first revision of the Pennsylvania Bend Participating Area for the Chalk Bluff Draw 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.

Seven approved copies of the application are returned herewith.

Very truly yours,

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

ALP/RLS/ir

Enclosure

cc: U. S. Geological Survey - Roswell, New Mexico
Commissioner of Public Lands - Santa Fe, N.M.

C
O
P
Y

July 1, 1958

Hervey Dow and Hinkle
P. O. Box 547
Roswell, New Mexico

Re: Chalk Bluff Draw Unit,
Eddy County, New Mexico

Attention: Mr. Howard C. Bratton

Gentlemen:

The Commissioner of Public Lands approved as of July 1, 1958, the revised initial and first revised participating area, this replaces the initial participating area as submitted and approved by us as of May 20, 1958.

We are handing eight copies of the above designated to Mr. Pete Porter, Director of the Oil Conservation Commission.

Very truly yours

MURRAY E. MORGAN
Commissioner of Public Lands

BY:
Ted Bilberry, Supervisor
Oil and Gas Division

MEM/MMR/s

cc: OCC - Santa Fe
USGS - Roswell, New Mexico

C
O
P
Y

Re: Chalk Bluff Draw Unit Area,
Eddy County, New Mexico

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

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

Director
United States Geological Survey
Washington 25, D. C.

APPLICATION FOR APPROVAL OF INITIAL PARTICIPATING
AREA FOR THE PENNSYLVANIAN BEND FORMATION AND FOR
APPROVAL OF FIRST REVISION OF THE PARTICIPATING
AREA FOR THE PENNSYLVANIAN BEND FORMATION

Comes the undersigned, Humble Oil & Refining Company, as Unit Operator for the Chalk Bluff Draw Unit Agreement, approved by the Director of the United States Geological Survey, effective December 29, 1955, and pursuant to the provisions of Section 11 thereof, respectfully submits for the approval of the New Mexico Oil Conservation Commission, the Commissioner of Public Lands of the State of New Mexico, and the Director of the United States Geological Survey, the selection of the following described lands regarded as reasonably proved to be productive of unitized substances in paying quantities to constitute the initial participating area and the first revision of the participating area for the Pennsylvanian Bend Producing Zone or formation to-wit:

INITIAL PARTICIPATING AREA:

T. 18 S., R. 27 E., N.M.P.M.
Section 5 - All;
containing 643.88 acres, more or less.

FIRST REVISION OF THE PARTICIPATING AREA:

T. 18 S., R. 27 E., N.M.P.M.
Section 8 - E $\frac{1}{2}$;
9 - W $\frac{1}{2}$;
containing 640 acres, more or less.

Section 5 and said lands in Sections 8 and 9, containing 640 acres, respectively, to constitute spacing units for the allocation of unitized substances produced therefrom on a pro rata acreage basis.

In support of this application, the following numbered items are attached hereto and made a part hereof:

1. An ownership map showing thereon the boundaries of the Unit Area and showing the proposed initial participating area, and the proposed first revision of the participating area, which map is marked Exhibit "A".

2. A schedule showing the lands entitled to participate in the initial participating area in the unitized substances produced from the Pennsylvanian Bend Sand Formation with the percentage of participation of each lease or tract indicated thereon, marked Exhibit "B".

3. A schedule showing the lands entitled to participate in the first revision of the participating area in the unitized substances produced from the Pennsylvanian Bend Sand Formation with the percentage of participation of each lease or tract indicated thereon, marked Exhibit "B-1".

There is also submitted herewith in triplicate a geological report marked Exhibit "C" prepared by Mr. J. B. Waid, Division Unitization Geologist of Applicant, together with accompanying geological maps supporting and justifying the proposed selection of the initial participating area and the first revised participating area; and also a preliminary reservoir evaluation or engineering report, marked Exhibit "D", prepared by Applicant's reservoir engineer.

The proposed initial participating area is predicated upon the knowledge and information obtained from the completion of the following well capable of producing gas in paying quantities under the terms of the unit agreement, to-wit:

The Chalk Bluff Draw No. 1 Well, located 1980 feet from the south and west lines of Section 5, T. 18 S., R. 27 E., N.M.P.M., which was completed April 13, 1956, as the discovery well capable of producing gas and condensate from the Pennsylvanian Bend Sand at a depth from 9,443 feet to 9,465 feet with an initial potential of 8,482 MCF of gas per day. This well is now shut in. After the completion of the initial test well, the drilling of a subsequent well was deferred in order to make a

reasonable test of the initial well. A temporary pipe line connection was obtained and gas produced and sold from the No. 1 Well from July 23, 1956, to September 21, 1956. The total production during said period was approximately 116,341 MCF of gas and 444 barrels of condensate.

The proposed first revision of the participating area is predicated upon the knowledge and information obtained from the completion of the following well capable of producing gas in paying quantities under the terms of the unit agreement to-wit:

The Chalk Bluff Draw No. 3 Well, located 2,310 feet from the north line and 330 feet from the east line of Section 8, T. 18 S., R. 27 E., N.M.P.M., which was completed on July 8, 1957 at a depth of approximately 9,505 feet to 9,555 feet with an initial potential of 2,107 MCF of gas per day. A workover of this well in which the sand was fractured was completed on February 25, 1958, and increased the productivity to 4,580 MCF of gas per day. The well is considered to have been proven capable of producing in commercial quantities as of said date. This well is now shut in.

The Chalk Bluff Draw Unit No. 2 Well, located 1930 feet from the south and 1880 feet from the west lines of Section 32, T. 17 S., R. 27 E., N.M.P.M., was drilled to a total depth of 9,425 feet and was plugged and abandoned as a dry hole on February 27, 1957.

The above three mentioned wells were drilled at a cost of approximately \$706,600.00.

An effort has been made by Applicant to secure a satisfactory contract for the sale of gas. Under date of April 15, 1958, a firm proposal for the purchase of gas from the two wells above referred to capable of producing gas was received from Malco Refineries, Inc. Interest in the purchase of gas has also been evidenced by El Paso Natural Gas Company and Southern Union Gas Company. However, tentative proposals from these two possible purchasers have been contingent on the purchase being able to secure commitments for the purchase of other gas produced in the general area. A fourth possible market outlet may be afforded by the

proposed pipe line of Trans Western Pipe Line Company. It now appears reasonably certain that a satisfactory market outlet can be secured. The date, on which gas sales will be commenced, is dependent on the outcome of final negotiations to sell the gas; however, it is anticipated that satisfactory contracts will be negotiated within the near future.

The preliminary reservoir evaluation of the Chalk Bluff Draw Unit which is attached hereto as Exhibit "D" indicates that the profit which would be obtained under an initial participating area of 640 acres, and a revised participating area adding another 640 acres for the second well would be marginal, and that the inclusion of lesser amounts of acreage in the initial and first revised participating areas would probably be a deterrent to further development in the area under the unit agreement.

Wherefore, Applicant respectfully requests that the New Mexico Oil Conservation Commission, The Commissioner of Public Lands of the State of New Mexico and the Director of the United States Geological Survey:

1. Approve the hereinabove selection of lands to constitute the initial Pennsylvanian Bend Sand participating area to be effective as of the date of first production, July 23, 1956.
2. Approve the hereinabove selection of lands to constitute the first revision of the Pennsylvanian Bend Sand participating area to be effective as of February 1, 1958.

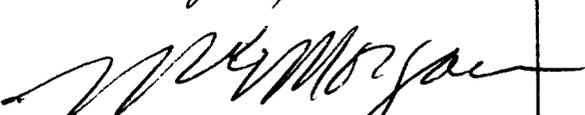
Respectfully submitted,

HUMBLE OIL & REFINING COMPANY

By R. M. Richardson

HERVEY, DOW & HINKLE

By Howard Bralton
Attorneys for Humble Oil &
Refining Company

Approved.....July 1, 1958.....

 COMMISSIONER OF PUBLIC LANDS

Approved.....7-2.....1958

 Secretary-Director

NEW MEXICO OIL CONSERVATION COMMISSION