

**APPLICATION FOR APPROVAL OF TERMINATION OF
BLACK MESA UNIT AGREEMENT
UNION COUNTY, NEW MEXICO**

TO THE HONORABLE SECRETARY OF THE INTERIOR OF THE UNITED STATES
and TO THE HONORABLE COMMISSIONER OF PUBLIC LANDS OF THE STATE
OF NEW MEXICO:

Comes now The Pure Oil Company, an Ohio corporation, and respectfully requests the approval by the Secretary of the Interior of the United States and by the Commissioner of Public Lands of the State of New Mexico of the termination of the Black Mesa Unit Agreement I-Geo. No. 460 covering and affecting certain lands lying and being situate in the County of Union and State of New Mexico therein particularly described and in support thereof would show:

That applicant, The Pure Oil Company, is the owner of in excess of 75% on an acreage basis of the working interest rights in the unitized land described in, covered and embraced by the Black Mesa Unit Agreement; the said applicant being the owner of all of the working interest rights in said unitized land.

That Section 20 of the aforesaid Unit Agreement provides for its termination, with the approval of the Secretary of the Interior of the United States and of the Commissioner of Public Lands of the State of New Mexico, upon the consent of owner of 75% on an acreage basis of the working interest rights in the unitized land and that the requisite consent is evidenced by the execution of this application by the said The Pure Oil Company, owner as aforesaid of in excess of 75% of the working interest rights in unitized land.

Respectfully submitted this 18th day of July, 1947.

THE PURE OIL COMPANY

By: [Signature]
Manager, Southwestern Producing Division

STATE OF OKLAHOMA)
) SS.
COUNTY OF TULSA)

ILLEGIBLE

W. M. Peck, being first duly sworn upon his oath states:

That he is Manager of the Southwestern Producing Division of The Pure Oil Company, and that he has read the above and foregoing Application for Approval of the Termination of the Black Mesa Unit Agreement, and from personal knowledge he knows the matter and things therein stated to be true and correct.

Subscribed and sworn to before me by W. M. Peck, this 18th day of July, 1947.

[Signature]
Notary Public,
Tulsa County, Oklahoma

My commission expires:

**APPLICATION FOR APPROVAL OF TERMINATION OF
BLACK HOLE OIL AGREEMENT
WILSON COUNTY, NEW MEXICO**

CONSERVATION BOARD
JUL 28 1947
RECEIVED
JUL 21 1947
U. S. GEOLOGICAL SURVEY
ROSWELL, NEW MEXICO

TO THE HONORABLE SECRETARY OF THE INTERIOR OF THE UNITED STATES
AND TO THE HONORABLE COMMISSIONER OF PUBLIC LANDS OF THE STATE
OF NEW MEXICO:

Know all men the True Oil Company, in this application, and respectfully requests the approval by the Secretary of the Interior of the United States and by the Commissioner of Public Lands of the State of New Mexico of the termination of the Black Hole Oil Agreement between us, said company and affecting certain lands lying and being situated in the County of Wilson and State of New Mexico therein particularly described and in support thereof would show:

That applicant, The True Oil Company, is the owner of an interest of 75% on an average basis of the working interest rights in the unitized land described in, covered and released by the Black Hole Oil Agreement, the said applicant being the owner of all of the working interest rights in said unitized land.

That Section 22 of the aforesaid Oil Agreement provides for its termination, with the approval of the Secretary of the Interior of the United States and of the Commissioner of Public Lands of the State of New Mexico, upon the consent of owner of 75% on an average basis of the working interest rights in the unitized land and that the requested consent is evidenced by the execution of this application by the said The True Oil Company, owner as aforesaid of an interest of 75% of the working interest rights in unitized land.

Respectfully submitted this 14th day of July, 1947.

APPROVED SEP 2 1947
[Signature]
Director, United States Geological Survey

THE TRUE OIL COMPANY
[Signature]
Manager, Easternmost Petroleum Interest

STATE OF NEW MEXICO }
COUNTY OF WILSON } ss.

W. H. Rank, being first duly sworn upon his oath states:

That he is Manager of the Easternmost Petroleum Interest of The True Oil Company, and that he has read the above and foregoing Application for Approval of the Termination of the Black Hole Oil Agreement, and from personal knowledge he knows the matters and things therein stated to be true and correct.

[Signature]

Subscribed and sworn to before me by W. H. Rank, this 14th day of July, 1947.

[Signature]
Notary Public,
Wilson County, Oklahoma

NEW MEXICO OIL CONSERVATION COMMISSION,

STATE OF NEW MEXICO.

APPLICATION FOR APPROVAL OF)
BLACK MESA UNIT AGREEMENT, (No. _____
UNION COUNTY, NEW MEXICO.)

P E T I T I O N

Comes now the undersigned, The Pure Oil Company, and files two copies of a Unit Agreement for the development and operation of the Black Mesa Unit, Union County, New Mexico, and hereby makes application for the approval of said agreement by the New Mexico Oil Conservation Commission, and in support thereof shows:

1. That the Unit Area designated in said agreement covers 33,030.36 acres, and is situated in the northeast part of Union County, in the State of New Mexico. That of said acreage embraced within said Unit Area, 8,807.69 acres are owned by the United States of America, 8,249.94 acres are owned by the State of New Mexico, and 15,972.73 acres are privately owned; that your petitioner has valid and subsisting oil and gas mining leases, or has agreed to purchase assignments, covering the same, as to all the lands with exception of approximately 520 acres, and that said agreement has been executed by your petitioner and numerous owners of royalty interests in said lands, involving approximately 98.42% of the working interest, and approximately 94.5% of the fee or royalty interest.

2. That the area designated in said unit has heretofore been designated by the Director of the Geological Survey of the Department of the Interior as a logical area for exploration and development as a unit of any oil or gas deposits which may be discovered.

3. Your petitioner, the undersigned, designated Operator and given authority to carry on operations necessary for development and exploration of the unit area for oil and gas, subject to regulations of the Secretary of the Interior, the Commissioner of Public Lands of the State of New Mexico, and the New Mexico Oil Conservation Commission, states that under the terms thereof a test well for oil and gas is to be started within six months after effective date of agreement and drilled upon some part of the unit area to a depth of not

less than six thousand (6000) feet, unless at a lesser depth a full deposit of unitized substance is discovered, or it shall be determined that further drilling would not be warranted.

4. That the proposed agreement follows substantially the same form of Unit Agreement heretofore approved by the Oil and Gas Conservation Commission, the Commissioner of Public Lands of the State of New Mexico, and Secretary of the Interior of the United States. Petitioner has submitted a copy of this agreement to the Department of the Interior of the United States, who has indicated its approval of said agreement, formal approval to be deferred and to be effective only if approved by the State of New Mexico acting through its Oil Conservation Commission and the Commissioner of Public Lands. It is believed that the operation to be carried on under the terms of this unit agreement would promote economical and efficient recovery of oil and gas, and the better utilization of reservoir energy because it provides for well spacing in accordance with such rules as may be prescribed by the Oil Conservation Commission; permits drilling, engineering, development and production practices on federal, state and privately owned lands to be conducted in accordance with the plan which has the joint approval of state and federal authorities and under a unified management, and makes possible the production of wells in the field in such a manner as may be directed by public authority so as to avoid water intrusion, waste of gas, or competitive production practices. That under this agreement the State of New Mexico will receive its share of oil or gas, which will be allocated to it on an acreage basis in any and all participating areas which may be established.

Petitioner further states that this unit area is with all respects to the best interest of the State with respect to State lands, and tends to promote the conservation of oil and gas, and to eliminate waste of these substances.

5. That upon an order being entered by the New Mexico Oil Conservation Commission approving said agreement, and after approval thereof by the Commissioner of Public Lands of New Mexico and the Secretary of the Interior of the United States, an approved copy of said agreement will be filed with the New Mexico

Oil Conservation Commission.

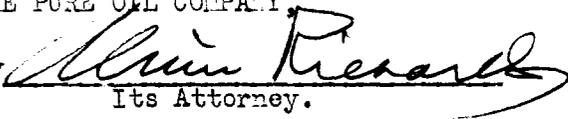
6. A geological report concerning the structure is marked Exhibit "A" and filed herewith. To this geological report is attached a map showing the outlines of the unit area and the structure.

WHEREFORE, the undersigned applicant respectfully requests that a public hearing be held on the matter of the approval of the said Unit Agreement, as provided by Statutes of New Mexico and regulations of New Mexico Oil Conservation Commission, and that upon said hearing said agreement be approved by the New Mexico Oil Conservation Commission.

Respectfully submitted,

THE PURE OIL COMPANY

By


Its Attorney.

NEW MEXICO OIL CONSERVATION COMMISSION,

STATE OF NEW MEXICO.

APPLICATION FOR APPROVAL OF
BLACK MESA UNIT AGREEMENT,
UNION COUNTY, NEW MEXICO.

No. _____

P E T I T I O N

Come now the undersigned, The Pure Oil Company, and files two copies of a Unit Agreement for the development and operation of the Black Mesa Unit, Union County, New Mexico, and hereby makes application for the approval of said agreement by the New Mexico Oil Conservation Commission, and in support thereof shows:

1. That the Unit Area designated in said agreement covers 33,030.35 acres, and is situated in the northeast part of Union County, in the State of New Mexico. That of said acreage embraced within said Unit Area, 8,807.89 acres are owned by the United States of America, 8,249.94 acres are owned by the State of New Mexico, and 15,972.73 acres are privately owned; that your petitioner has valid and subsisting oil and gas mining leases, or has agreed to purchase assignments, covering the same, as to all the lands with exception of approximately 230 acres, and that said agreement has been executed by your petitioner and numerous owners of royalty interests in said lands, involving approximately 98.42% of the working interest, and approximately 94.8% of the fee or royalty interest.

2. That the area designated in said unit has heretofore been designated by the Director of the Geological Survey of the Department of the Interior as a logical area for exploration and development as a unit of any oil or gas deposits which may be discovered.

3. Your petitioner, the undersigned, designated Operator and given authority to carry on operations necessary for development and exploration of the unit area for oil and gas, subject to regulations of the Secretary of the Interior, the Commissioner of Public Lands of the State of New Mexico, and the New Mexico Oil Conservation Commission, states that under the terms thereof a test well for oil and gas is to be started within six months after effective date of agreement and drilled upon some part of the unit area to a depth of not

ILLEGIBLE

less than six thousand (6000) feet, unless at a lesser depth a full deposit of unitized substance is discovered, or it shall be determined that further drilling would not be warranted.

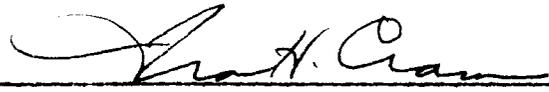
4. That the proposed agreement follows substantially the same form of Unit Agreement heretofore approved by the Oil and Gas Conservation Commission, the Commissioner of Public Lands of the State of New Mexico, and Secretary of the Interior of the United States. Petitioner has submitted a copy of this agreement to the Department of the Interior of the United States, who has indicated its approval of said agreement, formal approval to be deferred and to be effective only if approved by the State of New Mexico acting through its Oil Conservation Commission and the Commissioner of Public Lands. It is believed that the operation to be carried on under the terms of this unit agreement would promote economical and efficient recovery of oil and gas, and the better utilization of reservoir energy because it provides for well spacing in accordance with such rules as may be prescribed by the Oil Conservation Commission; permits drilling, engineering, development and production practices on federal, state and privately owned lands to be conducted in accordance with the plan which has the joint approval of state and federal authorities and under a unified management, and makes possible the production of wells in the field in such a manner as may be directed by public authority so as to avoid water intrusion, waste of gas, or competitive production practices. That under this agreement the State of New Mexico will receive its share of oil or gas, which will be allocated to it on an acreage basis in any and all participating areas which may be established.

Petitioner further states that this unit area is with all respects to the best interest of the State with respect to State lands, and tends to promote the conservation of oil and gas, and to eliminate waste of these substances.

5. That upon an order being entered by the New Mexico Oil Conservation Commission approving said agreement, and after approval thereof by the Commissioner of Public Lands of New Mexico and the Secretary of the Interior of the United States, an approved copy of said agreement will be filed with the New Mexico

ILLEGIBLE

In summary, drilling of the Black Mesa structure may find accumulation on top controlled by structure or on the east flank controlled by both structure and stratigraphy. Considering the prominence of the surface structure and the unpredictable subsurface structure and stratigraphy, it is our judgment that the Black Mesa structure warrants one or more test wells and does not warrant further geophysical investigation in advance of drilling. If drilling proves accumulation of the Amarillo type on the flank of the structure, the field may well extend beyond the limits of the proposed unit area.



Assistant Chief Geologist, The Pure Oil
Company

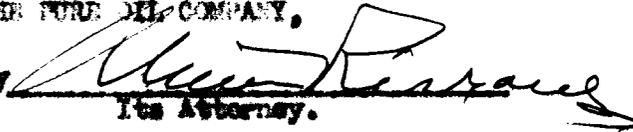
Oil Conservation Commission.

6. A geological report concerning the structure is marked Exhibit "A" and filed herewith. To this geological report is attached a map showing the outlines of the unit area and the structure.

WHEREFORE, the undersigned applicant respectfully requests that a public hearing be held on the matter of the approval of the said Unit Agreement, as provided by Statutes of New Mexico and regulations of New Mexico Oil Conservation Commission, and that upon said hearing said agreement be approved by the New Mexico Oil Conservation Commission.

Respectfully submitted,

THE PURE OIL COMPANY,

By 
Its Attorney.

C O N F I D E N T I A L

EXHIBIT "A"

APPLICATION FOR DESIGNATION OF UNIT AREA
BLACK MESA STRUCTURE - UNION COUNTY, NEW MEXICO

GEOLOGICAL REPORT

STRUCTURE MAP

OWNERSHIP MAP

THE PURE OIL COMPANY
P.O. BOX 271
TULSA, OKLAHOMA

EXHIBIT "A"

The Black Mesa Structure is located in Townships 30, 31, and 32, North, Ranges 36 and 37 East, Union County, New Mexico. This structure is a northeast-southwest trending anticlinal fold of low relief. The center of the designated area is 33 miles north of the Town of Clayton, New Mexico.

The structure, as indicated on the attached map, marked Exhibit "1", is an expression of the surface outcrops. No actual closure is interpreted from surface exposures but a flattening northeast and southwest from the near closure in Section 23, Township 31 North, Range 36 East is believed to be important with respect to the accumulation of oil since subsurface structures are commonly of greater amplitude than their surface components. The increase in dip of the surface beds paralleling the east flank of the structure suggests a major disturbance.

It is believed that the low relief of the surface structure enhances the possibilities for a thicker sedimentary section more than if a prominent surface structure were present. Regionally, many of the prominent anticlines are underlaid by comparatively shallow granite. From regional data 5000 to 6000 feet of sediments are expected to underlie the unit area. Production may be expected from the Permian and Pennsylvanian arkoses or granite washes; Lower Pennsylvanian sands and Pre-Pennsylvanian formations. Depending upon the extent of erosion a comparatively thick section of Mississippian, and possibly some Simpson and Arbuckle limestone are believed to be present.

Should production be found on the Black Mesa structure, it is believed that the productive area would be large.


Division Geologist, The Pure Oil Company
Southwestern Producing Division

SUPPLEMENT TO EXHIBIT "A"

We submit herewith additional geologic information on the Black Mesa structure, Townships 30, 31 and 32 N., Ranges 36 and 37 E., Union County, New Mexico. These additional data, together with our interpretations, were not submitted with the original application for designation of unit area because it was believed that the structural information presented, based upon excellent surface data, was adequate.

In the original application it was stated that low-relief surface structures of the Black Mesa type were believed to have a better chance of being underlain by a thick sedimentary column than high-relief surface structures. This is still our belief, but regional subsurface considerations make it necessary to entertain an alternate hypothesis. This surface structure is located upon the east flank of the well known regional Sierra Grande arch. Several wells drilled on top of this arch have found shallow pre-Cambrian granite. One of these wells is the Baker Ranch well in Section 6, 31N., 33E., Union County, New Mexico, 23 miles west of the top of the Black Mesa structure. The Baker Ranch well reached the pre-Cambrian at approximately 2100 feet. About 13 miles east of the top of the Black Mesa structure the Sinclair #1 School Land in section 22, 5N., 2 E., Cimarron County, Oklahoma, was still in sedimentary rock of Pennsylvanian age at a total depth of 4872 feet. Therefore a thick sedimentary column containing porous granite wash beds is present to the east of the Sierra Grande arch and has to pinch out on the east flank of the arch, setting the stage for a combination structural and stratigraphic trap of the Amarillo type.

The location of the west edge of the porous section can be determined only by drilling. Magnetic information does not indicate accurately the east edge of the shallow granite area. Any attempt to determine the edge by seismic methods is a waste of time, effort and money. We have had broad experience attempting to make such determinations by seismic methods and know the hazards. Although the Black Mesa structure is closer to the well revealing thick sediments, there is a possibility that the top of the structure is underlain by shallow granite, in which case the east flank of the structure becomes an excellent prospect for accumulation in granite wash beds controlled by both structure and stratigraphy. With this possibility in mind, considerable flank acreage was included in the unit area.