



C O P Y

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

August 30, 1955

Mr. J. Glenn Turner
1700 Mercantile Bank Bldg.
Dallas, Texas

My dear Mr. Turner:

The Oil and Gas Supervisor, Roswell, New Mexico, has transmitted for action your application and allocation schedule dated May 25, 1955, for approval of participating area "B", Pictured Cliffs formation, Huerfanito unit area, San Juan County, New Mexico. Accompanying your application was a report, dated May 15, by Albert R. Greer, containing geological and engineering data in support of your application for a separate participating area from that heretofore established by the Magnolia Petroleum Company, former operator.

It is your belief that there is an impermeable barrier through sections 22, 26, and 36, T. 27 N., R. 9 W., and extending to the southeast through T. 26 N., R. 8 W., The impermeable barrier is based on geologic and engineering investigations reported by Albert R. Greer. While there may be strong evidence of low permeability within the Huerfanito unit, it has not been proved conclusively that such area of the Pictured Cliffs formation is completely barren of gas.

It is recognized that the wells heretofore drilled are not of equal volume and that there is a slight difference in the rock pressure. However, rock pressures, well capacities, and well-drilling costs can hardly be used as criteria for separating the participating interests where the production is obtained from a single formation.

If participating areas are based on individual desire and individual operation, or are based on well costs and well volumes, the very purpose of the unit agreement will be defeated and each 160 acres could be a separate participating area. Where the wells have been drilled over widely scattered areas there is not sufficient evidence to conclusively denote separate pools for the purpose of unitization in a persistent formation throughout the unit. The

porosity and permeability barrier may be more theory than fact. To assume the position that separate pools always exist when widely spaced wells are drilled would discourage exploration at any appreciable distance from a participating area. The purpose of the plan of development is to bring into participation for allocation as rapidly as practical all the acreage entitled to participation.

In view of the above discussion, the one copy of your application of May 25 submitted by the Supervisor is being retained for reference and the surplus copies thereof may be returned to you by the Supervisor if and when appropriate. In any event, inasmuch as the 9 wells on which the application is based were completed in three different months, consideration should be given to making progressive enlargements with different effective dates to fit the completion dates of the respective controlling wells, in accordance with the pertinent procedures prescribed in Sec. 11 of the unit agreement. Accordingly, you are requested to review your application looking towards a single participating area or submit additional reasons to support your position regarding separate participating areas.

You are requested to work with the Supervisor to determine the additional area logically subject to participation as the result of drilling in the southern portion of the unit. It would appear from the records that additional acreage is now entitled to participation at various dates because of the many completions.

A copy of this letter is being mailed to the Skelly Oil Company, Tulsa, Oklahoma, which has protested your application of May 25.

Sincerely yours,

Orig.sgd. ARTHUR BAKER

Acting Director

Copy to: Roswell 2
Skelly Oil Co., Tulsa, Okla.
General files
Director's chrono. file
Conservation Div. file

Case 286

file

GOVERNOR JOHN F. SIMMS
CHAIRMAN

New Mexico

OIL CONSERVATION COMMISSION

LAND COMMISSIONER E. S. WALKER
MEMBER

STATE GEOLOGIST W. B. MACEY
SECRETARY - DIRECTOR



P. O. Box 871
SANTA FE, NEW MEXICO

MEMORANDUM:

TO: W. B. MACEY

FROM: D. S. Nutter

SUBJECT: Huerfanito Unit Area - Participating Area "B" as proposed by J. Glenn Turner and as opposed by Skelly Oil Company

Enclosed herewith are the various applications filed by J. Glenn Turner for approval of a separate participating area for the South side of the Huerfanito unit area, Skelly's letters of objection, reports by Al Greer and Skelly supporting their respective positions in the case and a synopsis of all that has occurred in the case to date, as submitted by Mr. John Anderson of the U. S. G. S. to the chief of the Oil and Gas Leasing Branch of the U. S. G. S.

I believe that Mr. Anderson has summarized the arguments very impartially and ably. His contention from the beginning has been that to form a separate participating area for each end of the unit area would be in violation of the spirit of the unit agreement.

My own feelings on the subject have been much the same, except that I believe that the preferable solution would be the formation of two separate participating areas, with the provision that once the participating areas are contiguous with each other, they be joined into one.

It is doubtful whether such an arrangement would work, however because according to the terms of the unit agreement, Section 11, PARTICIPATION AFTER DISCOVERY, Page 11, "a separate participating area shall be established in like manner for each separate pool or

-2-

Memorandum

deposit of unitized substances or for any group thereof produced as a single pool or zone, and any two or more participating areas so established may be combined into one with the consent of the owners of the all working interests in the lands within the participating areas so to be combined. . " That word "all", requiring 100% consent of working interest owners to join separate participating areas, would be a block to eventual combination.

Therefore I recommend that the proposal of Turner's be denied, and that he be requested to submit an application for the expansion of the present participating area.

Then the spirit of the unit agreement, "for better or worse", as in the marriage contract, would not be violated, and the unit agreement would be insured of one continuous participating area if and when the various Pictured Cliffs Pools in the area become contiguous and the entire area is proven to be productive.

DSN/ir

July 20, 1955



file

Case 286

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. Box 6721
Roswell, New Mexico

*To be
returned to
John Anderson.*

July 19, 1955

Memorandum

To: Chief, Oil and Gas Leasing Branch

From: Regional Oil and Gas Supervisor, Roswell, New Mexico

Subject: Proposed Participating Area B, Pictured Cliffs formation,
Huerfano Unit Agreement, San Juan County, New Mexico

Transmitted herewith are the following described papers submitted in connection with a proposed Participating Area B for the Pictured Cliffs formation, Huerfano Unit Agreement:

1. One copy of an application and allocation schedule dated May 25, 1955, filed by J. Glenn Turner, unit operator, for approval of Participating Area B, Pictured Cliffs formation.
2. One copy of an engineering report dated May 15, 1955, prepared by Albert R. Greer containing geological and engineering data in support of Turner's application.
3. One copy of a letter dated June 23, 1955, from Shelly Oil Company to the Survey and New Mexico state officials protesting the establishment of Pictured Cliffs Participating Area B.
4. One copy of a geological and engineering report dated June 23, 1955, containing data supporting Shelly's protest.
5. One copy of an application dated February 18, 1955, filed by J. Glenn Turner for the establishment of Pictured Cliffs Participating Area No. II, and one copy of a letter dated May 8, 1955, from Shelly Oil Company to the Survey and New Mexico state officials protesting approval of Turner's application.

In December 1954, Turner discussed with Canfield and me the formation of a separate Pictured Cliffs participating area in the Huerfano

unit for Pictured Cliffs wells drilled by him in the south part of the unit area. We told him that we were reluctant to recommend the establishment of a Pictured Cliffs participating area separate from that already established in view of the fact that all Pictured Cliffs wells in the Huerfanito unit produce from the same formation and that we believe that carrying out his proposal would not be in accordance with the terms of the unit agreement, and would result in administrative difficulties. Without further consultation with this office, Turner filed the application of February 18 which resulted in Skelly's protest of March 8 and our letter of April 5, 1955, to Turner requesting supporting evidence of his conclusion that two separate Pictured Cliffs participating areas are necessary.

Turner's submission to us of Greer's report was delayed until after a hearing on May 18, 1955, before the Oil Conservation Commission at which Skelly presented testimony to show that the South Blanco-Pictured Cliffs pool and the Ballard pool, both of which comprise portions of the Huerfanito unit area, should be consolidated to form one pool for proration purposes. Turner, through testimony of Greer, sought to prove that the South Blanco-Pictured Cliffs and the Ballard pool are separate and distinct pools. The Commission has taken the case under advisement and has issued no order in the matter.

The second enlarged Pictured Cliffs participating area for Huerfanito, approved June 4, 1954, comprises 1120 acres in the northeast corner of the unit area on which Magnolia and Skelly completed three producing wells in the Pictured Cliffs formation which had initial gas productions of 640,000 cubic feet, 345,000 cubic feet, and 578,000 cubic feet. Said wells were drilled in 1953. Well logs of the two dry holes drilled by Turner in the SE $\frac{1}{4}$ and NW $\frac{1}{4}$ of sec. 26, T. 27 N., R. 9 W., in September 1953, show that casing was set in each well, the sand was shot, and that the wells had sufficient gas to register shut-in pressures of 644 pounds and 548 pounds, respectively. The wells have produced no gas. In November and December 1954, and January 1955, J. Glenn Turner drilled nine Pictured Cliffs wells in the southern part of the Huerfanito unit area, six of which had initial gas productions ranging from 1,150,000 cubic feet to 2,656,000 cubic feet, and the other three wells had initial productions of 615,000 cubic feet, 582,000 cubic feet and 789,000 cubic feet. J. Glenn Turner, successor unit operator to Magnolia Petroleum Company, proposes to establish a second Pictured Cliffs participating area covering the 1,440 acres on which his nine wells are situated, alleging that the wells in such area are producing from a separate pool or deposit of unitized substances and that . . . "there is a porosity and permeability barrier existing somewhere within the Unit Area between the above described original Participating Area and the Participating Area the designation of which is sought hereby".

Greer bases his argument that there are two separate pools or deposits in the Huerfanito unit area on cross sections drawn through wells two and one-half miles to five miles southeast of the unit area. Said sections show that the producing zones in the Pictured Cliffs formation are not continuous from well to well over wide areas. He shows also through shut-in wellhead pressures that a differential of 50 pounds exists between a certain well in the present Pictured Cliffs participating area and a certain well in Turner's proposed participating area B. On the basis of such showing, Turner concludes that his proposed participating area B is in a separate pool or deposit from the existing Pictured Cliffs participating area and should be operated, and the gas allocated, as a separate participating area.

Skelly does not dispute the fact that productive zones in the Pictured Cliffs formation in the Huerfanito unit area and elsewhere in the San Juan Basin are not continuous from well to well. Skelly does, however, point out that cross sections drawn through certain selected wells in the Huerfanito unit area and in adjoining lands may be used for drawing entirely different conclusions as to the existence of an impermeable barrier than those drawn by Greer from his cross sections. Skelly also presents evidence to show that a pressure differential in the Pictured Cliffs formation between the present participating area and the proposed B area is less than that shown by Greer, and that such pressure differential is of less importance than that attached to it in Greer's report.

In our opinion, the geologic and engineering reports of Greer and Skelly do not present a sound basis for an interpretation that two separate Pictured Cliffs participating areas should, or should not, be established. They do present factual information; but, in our opinion, their use of it to prove two opposing conceptions is inconclusive.

The fact that two areas of Pictured Cliffs production are non-contiguous is by no means prima facie evidence that they are two separate pools or deposits of unitized substances, and must each be placed in a separate participating area. Mr. Duncan's memorandum of May 19, 1955, to this office regarding the Dakota and Mesaverde participating areas for the Allison unit agrees with this conclusion. In the block type units of the San Juan Basin, which comprise 46 percent of the present productive acreage in the Basin, the parties to such agreements have agreed that all wells completed in the Pictured Cliffs shall be regarded as producing from a single pool or zone. Most certainly, evidence of the existence in the Pictured Cliffs of two or more separate pools or deposits within the meaning of the language of the standard form of unit agreement must have been considered inconclusive, or the existence of two or more separate pools considered to be of little consequence, to permit such agreement. Under paragraph 3 of its letter of March 8, Skelly points out that approval of Turner's application would result in a situation inconsistent with the spirit and intent of the unit agreement, because said agreement contemplates development of the unit area as a whole, and creation of numerous participating areas would tend to decrease the benefits of all parties thereto.

Turner's insistence that a separate Pictured Cliffs participating area be established for the wells he has drilled in the southern part of the unit area is not motivated by an altruistic desire for strict compliance with that portion of section 11 of the unit agreement which provides that a separate participating area shall be established for each separate pool or deposit. In like manner, neither is Skelly's protest so motivated. Representatives of both Turner and Skelly have informally advised us that the controversy results mainly from economic factors. The three producing wells in the present participating area cost from \$30,00 to \$35,000 each to complete, whereas the nine producing wells in the proposed Area B cost only \$22,000 each to complete. Under the terms of the unit operating agreement, there is an adjustment of well cost among all working interest owners when a participating area is expanded. The whole matter boils down to the simple fact that Turner does not wish to share in the high cost of the low productive wells in the present participating area and Skelly insists that he must.

We believe that no substantial argument has been presented that compliance with the terms of the unit agreement requires the establishment of two participating areas for Pictured Cliffs production in the Huerfano unit. We are unable to concede that the shifting within the vertical limits of the Pictured Cliffs formation of porous zones as indicated by electrical surveys can be used as a basis for determining that a separate pool or deposit exists, or that pressure differentials of 50 pounds or less are also a sound basis for such determination. The isobaric map of the Pictured Cliffs formation shows a pressure gradient decreasing from the higher pressures in the deeper portion of the basin toward the outcrop of the Pictured Cliffs on the southwest side of the Basin. The establishment of separate participating areas for the Pictured Cliffs formation based on pressure differentials of 50 pounds or more could, in unit areas such as Huerfano, Huerfanito, and Rincon, result in multiple participating areas for each of which separate plans of development would be required to assure comparable development in each area, and attendant administrative difficulties. Such procedure is not contemplated by the language of the unit agreement.

We recommend that the application for the establishment of Pictured Cliffs Participating Area B be denied and that Turner be instructed to file an application for the enlargement of the present participating area. As Turner's nine wells were tested in November and December 1954, and January 1955, it may be proper to require third, fourth, and fifth enlargements of the participating area effective as of the date provided for in the unit agreement.

We have discussed Turner's application with representatives of the Oil Conservation Commission and the Commissioner of Public Lands but no agreement has been reached at this time as to what action such State agencies will take. The O.C.C. recognizes that the Puerfanito unit area contains portions of three pools designated by such commission. Such circumstances do not, in our opinion, interfere with the establishment of one participating area for the Pictured Cliffs in the Puerfanito unit. I plan to discuss the matter further with the State officials later this week and will advise you as to the action they propose to take.

JOHN A. ANDERSON

Copy to: Washington
Farmington

J. Anderson

I concur:



SKELLY OIL COMPANY

TULSA 2, OKLAHOMA

LAND AND LEASE DEPARTMENT

A. L. CASHMAN, VICE PRESIDENT
D. N. HILL, MGR. CENTRAL DIVISION
A. J. O'ROURKE, MGR. NORTHERN DIVISION
W. W. SIMPSON, MGR. SOUTHERN DIVISION
T. F. THOMPSON, MGR. LEASE RECORDS

June 23, 1955

Re: Huerfanito Unit Area
I-Sec. No. 943
San Juan County, New Mexico
Participating Area B
Pictured Cliffs Formation
Effective as of Date of First
Production

Director
United States Geological Survey
Department of The Interior
Washington 25, D. C.
(Through: Mr. John A. Anderson
Regional Oil and Gas Supervisor
United States Geological Survey
Roswell, New Mexico)

Mr. E. S. Walker
Commissioner of Public Lands
State of New Mexico
Santa Fe, New Mexico

Mr. William Macey
Secretary, Oil Conservation Commission
State of New Mexico
Santa Fe, New Mexico

Gentlemen:

Reference is made to that certain Application, dated May 25, 1955, filed by J. Glenn Turner, as Unit Operator of the captioned Unit Area, submitted for approval of ". . . Participating Area B for the Pictured Cliffs Formation." Heretofore, on February 18, 1955, Mr. Turner made similar application. Same was opposed by Skelly Oil Company in a letter dated March 8, 1955, captioned as above, to which letter your attention is respectfully invited.

At this time Skelly Oil Company wishes to reiterate its continued opposition to such an application and does hereby renew its

objections Numbers 1, 2 and 3, and as same are stated in its said letter of March 8, 1955. In addition, Skelly Oil Company desires to make certain further objections which are directed specifically to said Application of May 25th last and which are set forth hereinbelow.

Skelly Oil Company wishes to invite your attention to certain attachments hereto which are respectfully submitted in support of the contentions hereinafter made. The first of these attachments, marked "Exhibit A" (consisting of Enclosures B, C, D and E), is a Geologic Report prepared by Mr. John R. Gisburne, Division Geologist, Skelly Oil Company; the second, marked "Exhibit B" (consisting of Exhibits 1, 2 and 3), is an Engineering Report prepared by Mr. Barton W. Ratliff, Petroleum Engineer, Skelly Oil Company.

These reports, we believe, are self-explanatory, and support Skelly Oil Company's contentions which are as follows:

- I. That all wells which are presently producing from the Huerfanito Unit Area are producing from the same pool or deposit of unitized substances. With reference to the use of the word "pool" as same is used in the Unit Agreement, and in C.F.R., such term is construed by Skelly Oil Company as meaning sub-surface deposit of oil and/or gas rather than some areal delineation of a geographic area made by a regulatory body in a nomenclature hearing.
- II. That there is no such porosity and permeability barrier existing within said Unit Area such as would require division of same into two separate participating areas.
- III. That the Engineering Report, dated May 15, 1955, prepared by Mr. Albert R. Greer, should be considered both as to form and as to substance with the following objections:
 - (a) Same is not entirely responsive to Title 30, Sec. 226.9(E), C.F.R., in that it is basically an engineering, rather than a geologic, report. Further, it states certain conclusions relating to the question of economics without any supporting evidence therefore, and it also states conclusions which relate to the construction of the Unit Agreement which are purely legal in nature.

(b) Assuming for the sake of argument that the substance of Mr. Greer's report can be offered in support of said Application, notwithstanding the arguments and conclusions made and reached by Mr. Greer in this report, we are of the opinion that same are not persuasive and that the better view is stated in Mr. Ratliff's report marked "Exhibit B".

- IV. That separation of the Unit Area into two participating areas is neither warranted on the basis of the factual data submitted by Skelly Oil Company, nor is such separation contemplated, envisioned or authorized by the language of Section 11 of the Unitization Agreement.
- V. Skelly Oil Company is a participant in six (6) approved Federal Units in the San Juan Field in the State of New Mexico, which units, in the aggregate, cover approximately 184,000 acres. In all of such units, the producing wells are widely separated and in many cases are located on non-contiguous acreage. In several instances dry holes have been drilled within the Unit Areas. Nevertheless, to our knowledge, no Unit Operator of any of these units, except in this instance, has made application for the establishment of a second participating area for wells producing from the same geologic formation.

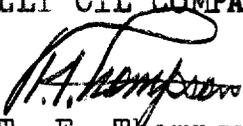
Until such time as additional drilling operations are conducted within the Unit Area, it is our opinion that it cannot be conclusively proven that there is any subsurface condition which effectively separates the two areas in question. However, it is our further opinion that the separation sought by such Application would be contrary to the spirit and intent of unitization agreements in general even if such additional drilling operations should demonstrate the existence of a barrier. It is our belief that, if permitted, such action would set a potentially dangerous precedent in subsequent unitized operations conducted on Federal and State lands, and that such a precedent would tend to discourage individuals and operators from participation in the formation of these types of unitization agreements.

With a copy of this letter directed to Mr. J. Glenn Turner, Unit Operator, we are enclosing a copy of our report.

For the reasons stated hereinabove, Skelly Oil Company respectfully requests that Unit Operator's Application of May 25, 1955 be denied.

Yours very truly,

SKELLY OIL COMPANY

By: 
T. F. Thompson

TFT/b
Encls.

cc: Mr. J. Glenn Turner (w/encl)
17th Floor, Mercantile Bank Building
Dallas, Texas

El Paso Natural Gas Company
Box 1492
El Paso, Texas
Att: Mr. R. L. Hamblin

Magnolia Petroleum Company
Box 900
Dallas, Texas
Att: H. H. Beeson

Mr. J. W. McConnell, Jr.
Administrator of the Estate of
W. O. McConnell, Deceased
Box 1041
Farmington, New Mexico

Benson-Monton-Greer Drilling Corporation
1501 Republic Building
Oklahoma City, Oklahoma

Montin-Benson Corporation
1501 Republic Building
Oklahoma City, Oklahoma

Mr. Albert R. Greer
315½ West Main
Farmington, New Mexico

Mr. K. E. McAfee
1316 Liberty Bank Building
Oklahoma City, Oklahoma

Mr. C. F. Stringer
301 E. Hopi
Farmington, New Mexico

Mr. O. J. Lilly
Box 185
Farmington, New Mexico

May 25, 1955

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

Mr. E. S. Walker
Commissioner of Public Lands
State of New Mexico
Santa Fe, New Mexico

Mr. William Macey, Secretary
Oil Conservation Commission
State of New Mexico
Santa Fe, New Mexico

Re: Huerfanito Unit Area
I-Sec. No. 943
San Juan County, New Mexico
Participating Area B
Pictured Cliffs Formation
Effective as of Date of First Production

Gentlemen:

Pursuant to Section 11 of the Huerfanito Unit Agreement, approved June 2, 1952 by the Director of the United States Geological Survey, J. Glenn Turner, as Unit Operator, herewith submits, for approval, Participating Area B for the Pictured Cliffs Formation. It is the belief of the Unit Operator that each of the nine wells hereinafter specified is capable of producing unitized substances in paying quantities and, therefore, respectfully requests your approval of same.

The wells upon which such determination is based are as follows:

COPIES TO BE MADE

COPIES TO BE MADE

J. Glenn Turner's Crandell-Federal No. 1-10 Well located 990' from the North line and 990' from the West line of Section 10, Township 26 North, Range 9 West, San Juan County, New Mexico, was spudded on November 3, 1954, and reached a total depth of 2,092' in the Pictured Cliffs Formation. The Pictured Cliffs Formation between 2,042' and 2,092' was treated on November 13, 1954 with sand-oil fracturing process. After being shut-in for gauge for nine days, the well was tested on November 24, 1954, and after a three hour blow-down gauged 2656 MCFGPD, with a SICP of 638 psig and a SITP of 637 psig.

J. Glenn Turner's Crandell-Federal No. 2-10 Well located 990' from the North line and 990' from the East line of Section 10, Township 26 North, Range 9 West, San Juan County, New Mexico, was spudded on November 5, 1954, and reached a total depth of 2,085' in the Pictured Cliffs Formation. The Pictured Cliffs Formation between 2,001' and 2,054' was treated on November 17, 1954 with sand-oil fracturing process. The Pictured Cliffs Formation between 2,015' and 2,085' was shot with solidified nitroglycerin on November 20, 1954 and the Pictured Cliffs Formation between 2,001' and 2,085' was treated on November 21, 1954 with sand-oil fracturing process. After being shut-in for gauge for seven days, the well was tested on November 30, 1954, and after a three hour blow-down gauged an IP of 2174 MCFGPD, with a SICP of 611 psig and a SITP of 611 psig.

J. Glenn Turner's Ballard-Federal No. 1-11 Well located 990' from the North line and 1,190' from the West line of Section 11, Township 26 North, Range 9 West, San Juan County, New Mexico, was spudded on November 8, 1954, and reached a total depth of 1,997' in the Pictured Cliffs Formation. The Pictured Cliffs Formation between 1,945' and 1,997' was shot with solidified nitroglycerin on November 25, 1954 and the Pictured Cliffs Formation between 1,925' and 1,997' was treated on November 25, 1954 with sand-oil fracturing process. After being shut-in for gauge for twelve days, the well was tested on December 13, 1954, and after a three hour blowdown gauged an IP of 615 MCFGPD, with a SICP of 626 psig and a SITP of 626 psig.

J. Glenn Turner's Ballard-Federal No. 2-11 Well located 890' from the North line and 990' from the East line of Section 11, Township 26 North, Range 9 West, San Juan County, New Mexico, was spudded November 13, 1954, and reached a total depth of 1,943' in the Pictured Cliffs Formation. The Pictured Cliffs Formation between 1,911' to 1,943' was shot with solidified nitroglycerin on December 15, 1954 and the Pictured Cliffs Formation between 1,897' and 1,943' was treated on December 15, 1954 with sand-oil fracturing process. After being shut-in thirteen days, the well was tested on December 30, 1954, and after a three hour blowdown gauged an IP of 582 MCFGPD, with a SICP of 650 psig and a SITP of 650 psig.

J. Glenn Turner's Ballard-Federal No. 1-12 Well located 990' from the North line and 1,140' from the West line of Section 12, Township 26 North, Range 9 West, San Juan County, New Mexico, was spudded November 18, 1954, and reached a total depth of 1,999' in the Pictured Cliffs Formation. The Pictured Cliffs Formation between 1,928' and 1,999' was shot with solidified nitroglycerin on December 3, 1954 and the Pictured Cliffs Formation between 1,913' and 1,999' was treated on December 4, 1954 with sand-oil fracturing process. After being shut-in seven days, the well was tested on December 13, 1954, and after a three hour blowdown gauged an IP of 2148 MCFGPD, with a SICP of 620 psig and a SITP of 620 psig.

J. Glenn Turner's Ballard-Federal No. 2-12 Well located 990' from the South line and 990' from the West line of Section 12, Township 26 North, Range 9 West, San Juan County, New Mexico, was spudded October 29, 1954, and reached a total depth of 2,123' in the Pictured Cliffs Formation. The Pictured Cliffs Formation between 2,028' and 2,085' was treated on November 9, 1954 with sand-oil fracturing process. The Pictured Cliffs Formation between 2,054' and 2,123' was shot with solidified nitroglycerin on December 10, 1954 and the Pictured Cliffs Formation between 2,028' and 2,123' was treated on December 11, 1954 with sand-oil fracturing process. After being shut-in for gauge for eighteen days, the well was tested on

December 30, 1954, and after a three hour blow-down gauged an IP of 789 MCFGPD, with a SICP of 636 psig and a SITP of 636 psig.

J. Glenn Turner's Ballard-Federal No. 3-12 Well located 1,590' from the North line and 880' from the East line of Section 12, Township 26 North, Range 9 West, San Juan County, New Mexico, was spudded December 20, 1954, and reached a total depth of 1,972' in the Pictured Cliffs Formation. The Pictured Cliffs Formation between 1,915' and 1,972' was shot with solidified nitroglycerin on January 3, 1955 and the Pictured Cliffs Formation between 1,903' and 1,972' was treated on January 4, 1955 with sand-oil fracturing process. After being shut-in for seven days, the well was tested on January 11, 1955, and after a three hour blowdown gauged an IP of 1150 MCFGPD, with a SICP of 638 psig and a SITP of 638 psig.

J. Glenn Turner's Ballard-Federal No. 4-12 Well located 990' from the South line and 990' from the East line of Section 12, Township 26 North, Range 9 West, San Juan County, New Mexico, was spudded December 13, 1954, and reached a total depth of 2,019' in the Pictured Cliffs Formation. The Pictured Cliffs Formation between 1,964' and 2,019' was shot with solidified nitroglycerin on December 27, 1954 and the Pictured Cliffs Formation between 1,955' and 2,019' was treated on December 27, 1954 with sand-oil fracturing process. After being shut-in for fourteen days, the well was tested on December 28, 1954, and after a three hour blowdown gauged an IP of 1443 MCFGPD, with a SICP of 666 psig and a SITP of 665 psig.

J. Glenn Turner's Crandell-Federal No. 1-3 Well located 990' from the South line and 990' from the West line of Section 3, Township 26 North, Range 9 West, San Juan County, New Mexico, was spudded on November 23, 1954, and reached a total depth of 2,155' in the Pictured Cliffs Formation. The Pictured Cliffs Formation between 2,078' and 2,155' was shot with solidified nitroglycerin on December 20, 1954 and the Pictured Cliffs Formation between 2,065' and 2,155' was treated on December 22, 1954 with sand-oil fracturing process.

After being shut-in for gauge for seven days, the well was tested on December 30, 1954, and after a three hour blowdown gauged an IP of 1505 MCFGPD, with an SICP of 640 psig and a SITP of 640 psig.

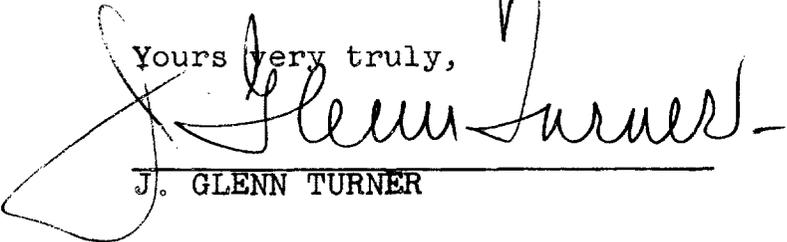
Your attention is respectfully directed to the present Pictured Cliffs Participating Area originally established by Magnolia Petroleum Company, as former Unit Operator, and covering the E/2 of Section 23, the W/2 of Section 24, the W/2 of Section 25, and the NE/4 of Section 26, Township 27 North, Range 9 West, N.M.P.M., San Juan County, New Mexico. The wells producing from this Participating Area are, in the opinion of the Unit Operator, producing from a separate pool or deposit of unitized substances and that there is a porosity and permeability barrier existing somewhere within the Unit Area between the above described original Participating Area and the Participating Area the designation of which is sought hereby. In the event that subsequent drilling operations prove this theory on the part of Operator to be erroneous, then all participating areas from the Pictured Cliffs Formation will be consolidated, but it is the opinion of the Unit Operator that such consolidation is not warranted at the present time and that such separate participating areas are contemplated, envisioned and authorized by Section 11 of the Unit Agreement.

Enclosed herewith are three copies of Engineering Report covering the affected portion of the Unit Area, dated May 15, 1955, prepared by Mr. Albert R. Greer, Petroleum Engineer of Farmington, New Mexico, substantiating the Unit Operator's position. Copies of such Report have been heretofore made available to the Oil Conservation Commission and the Commissioner of Public Lands, and a copy thereof has been furnished to Skelly Oil Company pursuant to their request.

Attached hereto is a schedule showing Participating Area B for the Pictured Cliffs Formation. This schedule describes the entire participating area, showing the percentage of unitized substances allocated to each unitized tract and the exact breakdown of production allocated to each tract according to the various ownerships in said tract.

Copies of this letter and schedule are being sent to the working interest owners shown on the attached sheet.

Yours very truly,


J. GLENN TURNER

APPROVED: _____ Date: _____
Director, United States
Geological Survey

Subject to like approval by the appropriate State Officials.

APPROVED: _____ Date: _____
Commissioner of Public Lands

Subject to like approval by the U.S.G.S. and the Oil
Conservation Commission.

APPROVED: W B Macey Date: 12-19-55
Oil Conservation Commission

Subject to like approval by the U.S.G.S. and the
Commissioner of Public Lands.

El Paso Natural Gas Company
Post Office Box 1492
El Paso, Texas
Attention: Mr. R. L. Hamblin

Skelly Oil Company
Skelly Building
Tulsa 2, Oklahoma
Attention: Mr. T. F. Thompson

Magnolia Petroleum Company
P. O. Box 900
Dallas 21, Texas
Attention: Mr. H. H. Beeson

Mr. J. W. McConnell, Jr.
Administrator of the Estate of
W. O. McConnell, deceased
P. O. Box 1041
Farmington, New Mexico

Benson-Montin-Greer Drilling Corporation
1501 Republic Building
Oklahoma City, Oklahoma

Montin-Benson Corporation
1501 Republic Building
Oklahoma City, Oklahoma

Mr. Albert R. Greer
315 $\frac{1}{2}$ West Main
Farmington, New Mexico

Mr. K. E. McAfee
1316 Liberty Bank Building
Oklahoma City 2, Oklahoma

Mr. C. F. Stringer
301 East Hopi
Farmington, New Mexico

Mr. O. J. Lilly
Post Office Box 185
Farmington, New Mexico

HUERFANTO UNIT AREA

PICTURED CLIFFS PARTICIPATING AREA NO. B

SERIAL NUMBER	DRILLING BLOCK	NUMBER OF ACRES	OWNERSHIP AND PERCENTAGE	COMMITTED PARTICIPATION	MAXIMUM POSSIBLE PARTICIPATION	PRESENT ACTUAL PARTICIPATION
<u>Tract 3</u>						
SF 078135	T-26-N, R-9-W Sec. 3: SW/4	160	Royalty Owner: United States of America; Working Interest Owners: W. O. McConnell; J. Glenn Turner; William G. Webb; ORRI Owners: P. L. Grandell, et al; TOTAL	12.50% 12.50% 36.00% 34.20% 1.80% 15.50% 100.00%	11.11111% 1.38889% 4.00000% 3.80000% .20000%	11.11111% 1.38889% 4.00000% 3.80000% .20000% 1.72222% 11.11111%

Grandell-Federal #1-3 Well Sec. 3: SW/4 160 100.00% 11.11111% 11.11111%

Effective as of date of first production.

HUERFANITO UNIT AREA

PICTURED CLIFFS PARTICIPATING AREA NO. B

SERIAL NUMBER	DRILLING BLOCK	NUMBER OF ACRES	DRILLING BLOCK OWNERSHIP AND PERCENTAGE	COMMITTED PARTICIPATION	MAXIMUM POSSIBLE PARTICIPATION	PRESENT ACTUAL PARTICIPATION
<u>Tract 3</u>						
SF 078135	T-26-N, R-9-W Sec. 10: NW/4	160	Royalty Owner: United States of America; Working Interest Owners: W. O. McConnell; J. Glenn Turner; William G. Webb; ORRI Owners: P. L. Grandell, et al; TOTAL	12.50% 12.50% 36.00% 34.20% 1.80% 15.50% 100.00%	11.11111% 11.11111% 36.00% 34.20% 1.80% 1.72222% 11.11111%	11.11111% 1.38889% 4.00000% 3.80000% .20000% 1.72222% 11.11111%

Grandell-Federal
#1-10 Well Sec. 10: NW/4 160
100.00% 11.11111% 11.11111%

Effective as of date of first production.

HUERFANITO UNIT AREA

PICTURED CLIFFS PARTICIPATING AREA NO. B

SERIAL NUMBER	DRILLING BLOCK	NUMBER OF ACRES	OWNERSHIP AND PERCENTAGE	DRILLING BLOCK		MAXIMUM POSSIBLE PARTICIPATION	PRESENT ACTUAL PARTICIPATION
				COMMITTED	PARTICIPATION		
SF 078135	T-26-N, R-9-W Sec. 10: NE/4	160	Tract 3 Royalty Owner: United States of America; Working Interest	12.50%	12.50%	11.11111%	11.11111%
			Owners:				
			W. O. McConnell;	36.00%	36.00%	4.00000%	4.00000%
			J. Glenn Turner;	34.20%	34.20%	3.80000%	3.80000%
			William G. Webb;	1.80%	1.80%	.20000%	.20000%
			ORRI Owners:				
			P. L. Grandell,				
			et al;	15.50%	15.50%	1.72222%	1.72222%
			TOTAL	100.00%	100.00%	11.11111%	11.11111%

Grandell-Federal
#2-10 Well Sec. 10: NE/4 160 100.00% 11.11111% 11.11111%

Effective as of date of first production.

HUERFANITO UNIT AREA

PICTURED CLIFFS PARTICIPATING AREA NO. B

SERIAL NUMBER	DRILLING BLOCK	NUMBER OF ACRES	OWNERSHIP AND PERCENTAGE	COMMITTED	MAXIMUM POSSIBLE PARTICIPATION	PRESENT ACTUAL PARTICIPATION
SF-078388	T-26-N, R-9-W Sec. 11: NW/4	160				
			<u>Tract 8</u>			
			Royalty Owner: United States of America;		11.11111%	11.11111%
			Working Interest	12.500%	12.500%	1.38889%
			Owners:			
			W. O. McConnell;	36.500%	36.500%	4.05556%
			J. Glenn Turner;	34.675%	34.675%	3.85277%
			William G. Webb;	1.825%	1.825%	.20278%
			ORRI Owners:			
			Magnolia Petr. Co.,			
			et al;	14.500%	14.500%	1.61111%
			TOTAL	100.000%	100.000%	11.11111%

Ballard-Federal
#1-11 Well Sec. 11: NW/4 160 100.000% 11.11111% 11.11111%

Effective as of date of first production.

HUERFANTO UNIT AREA

PICTURED CLIFFS PARTICIPATING AREA NO. B

SERIAL NUMBER	DRILLING BLOCK	NUMBER OF ACRES	DRILLING BLOCK OWNERSHIP AND PERCENTAGE	COMMITTED	MAXIMUM POSSIBLE PARTICIPATION	PRESENT ACTUAL PARTICIPATION
SF-078388	T-26-N, R-9-W Sec. 11: NE/4	160	<p><u>Tract 8</u></p> <p>Royalty Owner: United States of America; 12.500%</p> <p>Working Interest Owners: W. O. McConnell; 36.500% J. Glenn Turner; 34.675% William G. Webb; 1.825%</p> <p>ORRI Owners: Magnolia Petr. Co., et al; 14.500%</p> <p>TOTAL 100.000%</p>	12.500%	1.38889%	1.38889%
					11.11111%	11.11111%

Ballard-Federal
#2-11 Well Sec. 11: NE/4 160 100.000% 11.11111% 11.11111%

Effective as of date of first production.

HUERFANITO UNIT AREA

PICTURED CLIFFS PARTICIPATING AREA NO. B

<u>SERIAL NUMBER</u>	<u>DRILLING BLOCK</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP AND PERCENTAGE</u>	<u>COMMITTED</u>	<u>MAXIMUM POSSIBLE PARTICIPATION</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
SF-078388	T-26-N, R-9-W Sec. 12: NW/4	160	<u>Tract 8</u> Royalty Owner: United States of America; Working Interest		11.11111%	11.11111%
			Owners: W. O. McConnell; J. Glenn Turner; William G. Webb; ORRI Owners: Magnolia Petr. Co., et al;		4.05556% 3.85277% .20278%	4.05556% 3.85277% .20278%
			TOTAL	100.0000%	11.11111%	11.11111%

Ballard-Federal
#1-12 Well Sec. 12: NW/4 160 100.0000% 11.11111% 11.11111%

Effective as of date of first production.

HUERFANTO UNIT AREA

PICTURED CLIFFS PARTICIPATING AREA NO. B

SERIAL NUMBER	DRILLING BLOCK	NUMBER OF ACRES	DRILLING BLOCK OWNERSHIP AND PERCENTAGE	COMMITTED	MAXIMUM POSSIBLE PARTICIPATION	PRESENT ACTUAL PARTICIPATION
SF-078388	T-26-N, R-9-W Sec. 12; NE/4	160	<p style="text-align: center;"><u>Tract 8</u></p> Royalty Owner: United States of America; Working Interest Owners: W. O. McConnell; 36.500% J. Glenn Turner; 34.675% William G. Webb; 1.825% ORRI Owners: Magnolia Petr. Co., et al; 14.500% TOTAL 100.000%	12.500%	1.38889%	1.38889%
					11.11111%	11.11111%

Ballard-Federal #3-12 Well Sec. 12: NE/4 160 100.000% 11.11111% 11.11111%

Effective as of date of first production.

HIERFANITO UNIT AREA

PICTURED CLIFFS PARTICIPATING AREA NO. B

<u>SERIAL NUMBER</u>	<u>DRILLING BLOCK</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP AND PERCENTAGE</u>	<u>COMMITTED</u>	<u>MAXIMUM POSSIBLE PARTICIPATION</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
SF-078388	T-26-N, R-9-W Sec. 12: SW/4	<u>160</u>	<u>Tract 8</u> Royalty Owner: United States of America; Working Interest Owners: W. O. McConnell; J. Glenn Turner; William G. Webb; ORRI Owners: Magnolia Petr. Co., et al; TOTAL	12.500% 12.500% 36.500% 34.675% 1.825% 14.500% 100.000%	1.38889% 1.38889% 4.05556% 3.85277% .20278% 1.61111% 11.11111%	1.38889% 1.38889% 4.05556% 3.85277% .20278% 1.61111% 11.11111%
Ballard-Federal #2-12 Well	Sec. 12: SW/4	<u>160</u>		100.000%	<u>11.11111%</u>	<u>11.11111%</u>

Effective as of date of first production.

J. GLENN TURNER

OIL AND GAS-INVESTMENTS
17TH FLOOR MERCANTILE BANK BUILDING
DALLAS 1, TEXAS

April 13, 1955

C Mr. T. F. Thompson
Lease Records Division
Skelly Oil Company
Skelly Building
Tulsa 2, Oklahoma

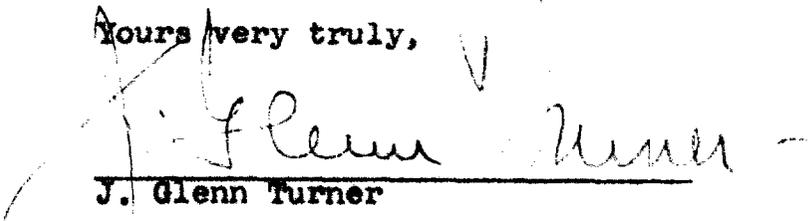
Re: Huerfanito Unit Area Participating Areas
San Juan County, New Mexico

O Dear Mr. Thompson:

This will acknowledge receipt of your letter dated
April 12, 1955 with reference to the captioned matter.

P As has been my practice in the past, Skelly Oil Company,
together with all other interested Working Interest Owners within
the Huerfanito Unit Area, will be furnished with copies of all
data submitted to the United States Geological Survey in connec-
tion with any Application for Designation of Participating Areas
within the captioned Unit.

Yours very truly,


J. Glenn Turner

JGT:mch

cc: Mr. John A. Anderson
Mr. E. S. Walker
Mr. William B. Macey

cc: Mr. E. S. Walker
Commissioner of Public Lands
State of New Mexico
Santa Fe, New Mexico

Mr. William Nacey, Secretary
Oil Conservation Commission
State of New Mexico
Santa Fe, New Mexico

COPY FOR



UNITED STATES
 MAIN DEPARTMENT OF THE INTERIOR
 OFFICE OCC
 GEOLOGICAL SURVEY

1955 APR 7 PM 1:45

P. O. Box 6721
 Roswell, New Mexico

April 5, 1955

J. Glenn Turner
 17th Floor Mercantile Bank Building
 Dallas 1, Texas

Dear Mr. Turner:

Reference is made to your application dated February 18, 1955, addressed to the Director, U. S. Geological Survey, the Commissioner of Public Lands, State of New Mexico, and the Oil Conservation Commission, State of New Mexico, proposing the establishment of Pictured Cliffs Formation Participating Area No. 11 for the Huerfano unit area, San Juan County, New Mexico. Said application provides for a participating area embracing 1440 acres in the southern part of the Huerfano unit area upon which nine Pictured Cliffs gas wells were drilled by you in November and December 1954 and in January 1955. The application alleges that said wells are "..... producing from a separate pool or deposit of unitized substances and that there is a porosity and permeability barrier existing somewhere within the Unit Area between the above described original Participating Area and the Participating Area the designation of which is sought hereby".

In order that appropriate consideration can be given as to whether a separate Pictured Cliffs participating area should be established for the gas wells drilled by you in the southern portion of the unit area, or whether the area proved productive by the drilling of such wells should be added to the existing Pictured Cliffs participating area as approved June 4, 1954, covering 1120 acres in the northeastern portion of the unit area, it is requested that you submit to this office geologic maps, cross-sections, sample logs, electrical logs, production data, geologic reports, and other data to substantiate your opinion that the wells on land covered by your application are producing from a separate pool or deposit of unitized substances within the meaning of such language in Section 11 of the Huerfano Unit Agreement. Your showing should be submitted in triplicate to this office, and such material should also be submitted to the Commissioner of Public Lands, State of New Mexico, and the Oil Conservation Commission, State of New Mexico.

JG

Copies of this letter are being furnished the working interest owners listed on the attached sheet and such owners are invited to submit to this office any showing they may wish to make as to whether a separate Pictured Cliffs Participating area should be established, or whether the present participating area should be enlarged. In the opinion of this office, the unit agreement does not require that the participating area for any pool or deposit be composed of contiguous tracts.

When an agreement has been reached or a decision otherwise arrived at as to whether there should be one or multiple Pictured Cliffs participating areas in the Hurfanito unit, you will be advised as to the procedure to be followed in submitting a revised application for a new or an enlarged Pictured Cliffs participating area.

Sincerely yours,



JOHN A. ANDERSON
Regional Oil and Gas Supervisor

cc: El Paso Natural Gas Company
P. O. Box 1492
El Paso, Texas

Southern Union Gas Company
Burt Building
Dallas, Texas

Huerfano Gas Company
P. O. Box 1041
Farmington, New Mexico

Magnolia Petroleum Company
P. O. Box 900
Dallas 21, Texas

Standard Oil Company of Texas
P. O. Box 1249
Houston, Texas

Artes Oil & Gas Company
Mercantile Commerce Building
Dallas, Texas

Mr. J. W. McConnell, Jr.
Administrator of the Estate of
W. O. McConnell, deceased
P. O. Box 1041
Farmington, New Mexico

Mr. A. R. Greer
Farmington, New Mexico

Skelly Oil Company
Skelly Building
Tulsa 2, Oklahoma

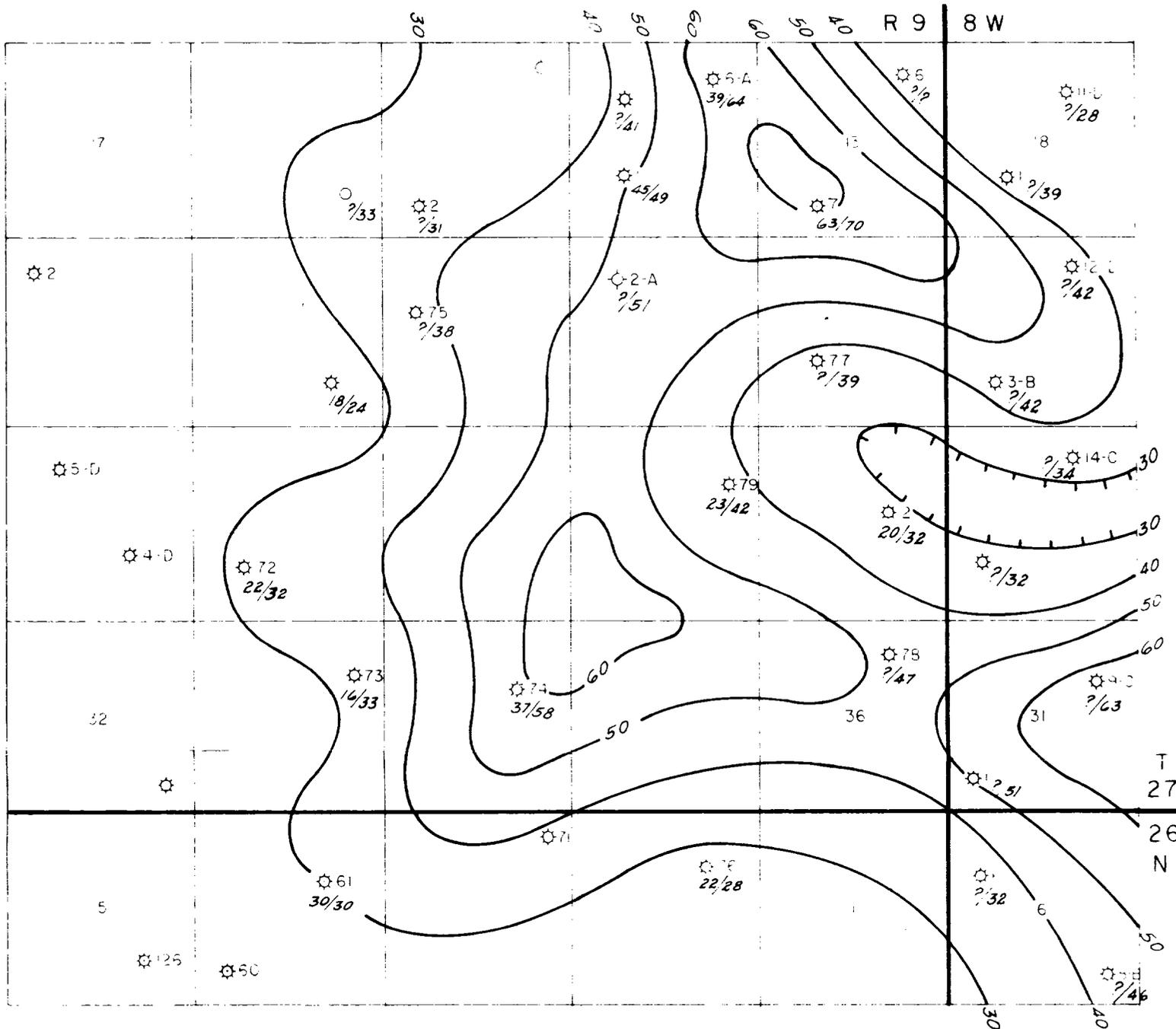
Mr. J. Glenn Turner
La Florida Hotel
Santa Fe, New Mexico

Oil Conservation Commission ✓
Santa Fe, New Mexico

Commissioner of Public Lands
Santa Fe, New Mexico

U. S. Geological Survey
Farmington, New Mexico

Washington

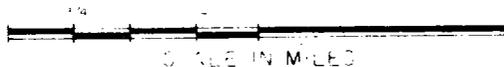


BELCO PETROLEUM CORPORATION
HUERFANITO UNIT AREA
 SAN JUAN COUNTY, NEW MEXICO
POINT LOOKOUT ISOPACHOUS MAP

LEGEND

- ⊙ LOCATION
- ⊕ DRILLING
- ⊛ GAS WELL
- ⊘ DRY HOLE

CONTOUR INTERVAL 10'
 GEOLOGIST: W. LANG
 DRAFTSMAN: G.G.
 DATED: 4-21-65





SKELLY OIL COMPANY

TULSA 2, OKLAHOMA

LAND AND LEASE DEPARTMENT

A. L. CASHMAN, VICE PRESIDENT

D. N. HILL, ASS'T MANAGER

E. M. DUFFIELD, ASS'T MANAGER

W. S. ARTHURS

T. F. THOMPSON

March 8, 1955

Re: Huerfanito Unit Area
I-Sec. No. 943
San Juan County, New Mexico
Participating Area Number II
Pictured Cliffs Formation
Effective as of Date of
First Production

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

Mr. E. S. Walker
Commissioner of Public Lands
State of New Mexico
Santa Fe, New Mexico

Mr. William Macey, Secretary
Oil Conservation Commission
State of New Mexico
Santa Fe, New Mexico

Gentlemen:

Reference is made to that certain Application, dated February 18, 1955, filed by J. Glenn Turner, as presumptive Unit Operator for all formations within captioned unit area. You are advised that Skelly Oil Company hereby opposes said application for the reasons hereinafter stated:

1. Skelly Oil Company believes that there is no evidence other than the stated opinion of said Unit Operator that the wells producing from the Participating Area Number II are ". . . producing from a separate pool or deposit of unitized substances and that there is a porosity and permeability barrier existing somewhere within the unit area . . ." between the original participating area and said Participating Area Number II. In this connection, your attention is respectfully invited to Sec. 226.9(e), Title 30, CFR, which provides as follows:

"(e) Four counterparts of a substantiating geologic report, including structure-contour map, cross sections, and pertinent data, shall accompany each application for approval of a participating area or amendment thereof under an approved agreement."

Insofar as we know, no such information accompanied the application. Therefore in the absence of such evidence in support of Operator's theory that a porosity and permeability barrier exists within the unit area, it is our further belief that it must be assumed that all production from the Pictured Cliff Formation in the Unit Area is one common source of supply; and in the event that subsequent drilling operations prove this theory to be erroneous, then at that time separate participating areas should be formed on the basis of such operations.

2. Skelly Oil Company believes that until such time as the additional drilling operations above referred to are conducted within the Unit Area, said application has been made prematurely.

3. Skelly Oil Company believes that the granting of said application would result in a situation inconsistent with the spirit and intent of the Unitization Agreement on and covering captioned Unit Area because since said agreement contemplates cooperative development of the Unit Area as a whole, the creation of numerous participating areas within said area would tend to result in a decrease in drilling operations conducted for the benefit of all parties to said agreement.

For the reasons hereinabove stated and because said application has been filed without prior notice thereof to the parties to said Unit Agreement, Skelly Oil Company respectfully requests that approval of said application be denied. In lieu of said application, Skelly Oil Company requests that consideration be given to the enlargement of the present participating area to include that area described in said application as Participating Area Number II.

If as a result of our disagreement with Operator's said application a hearing is to be held, Skelly Oil Company respectfully requests that all parties to said Unit Agreement be properly notified and be given an opportunity to be represented at such hearing.

Yours very truly,

SKELLY OIL COMPANY

By:


T. F. Thompson

Page 3
March 8, 1955

cc: El Paso Natural Gas Company
P. O. Box 1492
El Paso, Texas

Southern Union Gas Company
Burt Building
Dallas, Texas

Huerfanito Gas Company
P. O. Box 1041
Farmington, New Mexico

Magnolia Petroleum Company
P. O. Box 900
Dallas 21, Texas

Standard Oil Company of Texas
P. O. Box 1249
Houston, Texas

Aztec Oil & Gas Company
Mercantile Commerce Building
Dallas, Texas

Mr. J. W. McConnell, Jr.
Administrator of the Estate of
W. O. McConnell, deceased
P. O. Box 1041
Farmington, New Mexico

Mr. J. Glenn Turner
1711 Mercantile Bank Building
Dallas, Texas

February 18, 1955

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

Hold for study

Mr. E. S. Walker
Commissioner of Public Lands
State of New Mexico
Santa Fe, New Mexico

Mr. William Macey, Secretary
Oil Conservation Commission
State of New Mexico
Santa Fe, New Mexico

Re: Huerfanito Unit Area
I-Sec. No. 943
San Juan County, New Mexico
Participating Area Number II
Pictured Cliffs Formation
Effective as of Date of First Production

Gentlemen:

Pursuant to Section 11 of the Huerfanito Unit Agreement, approved June 2, 1952 by the Director of the United States Geological Survey, J. Glenn Turner, as Unit Operator of such Unit for natural gas and associated liquid hydrocarbons produced from formations down through the base of the Pictured Cliffs Formation, herewith submits, for approval, Participating Area Number II for the Pictured Cliffs Formation. It is the belief of the Unit Operator that each of the nine wells hereinafter specified is capable of producing unitized substances in paying quantities and, therefore, respectfully requests your approval of same.

The wells upon which such determination is based are as follows:

J. Glenn Turner's Crandell-Federal No. 1-10 Well located 990' from the North line and 990' from the West line of Section 10, Township 26 North, Range 9 West, San Juan County, New Mexico, was spudded on November 3, 1954, and reached a total depth of 2,092' in the Pictured Cliffs Formation. The Pictured Cliffs Formation between 2,042' and 2,092' was treated on November 13, 1954 with sand-oil fracturing process. After being shut-in for gauge for nine days, the well was tested on November 24, 1954, and after a three hour blow-down gauged 2656 MCFGPD, with a SICP of 638 psig and a SITP of 637 psig.

J. Glenn Turner's Crandell-Federal No. 2-10 Well located 990' from the North line and 990' from the East line of Section 10, Township 26 North, Range 9 West, San Juan County, New Mexico, was spudded on November 5, 1954, and reached a total depth of 2,085' in the Pictured Cliffs Formation. The Pictured Cliffs Formation between 2,001' and 2,054' was treated on November 17, 1954 with sand-oil fracturing process. The Pictured Cliffs Formation between 2,015' and 2,085' was shot with solidified nitroglycerin on November 20, 1954 and the Pictured Cliffs Formation between 2,001' and 2,085' was treated on November 21, 1954 with sand-oil fracturing process. After being shut-in for gauge for seven days, the well was tested on November 30, 1954, and after a three hour blow-down gauged an IP of 2174 MCFGPD, with a SICP of 611 psig and a SITP of 611 psig.

J. Glenn Turner's Ballard-Federal No. 1-11 Well located 990' from the North line and 1,190' from the West line of Section 11, Township 26 North, Range 9 West, San Juan County, New Mexico, was spudded on November 8, 1954, and reached a total depth of 1,997' in the Pictured Cliffs Formation. The Pictured Cliffs Formation between 1,945' and 1,997' was shot with solidified nitroglycerin on November 25, 1954 and the Pictured Cliffs Formation between 1,925' and 1,997' was treated on November 25, 1954 with sand-oil fracturing process. After being shut-in for gauge for twelve days, the well was tested on December 13, 1954, and after a three hour blowdown gauged an IP of 615 MCFGPD, with a SICP of 626 psig and a SITP of 626 psig.

J. Glenn Turner's Ballard-Federal No. 2-11 Well located 890' from the North line and 990' from the East line of Section 11, Township 26 North, Range 9 West, San Juan County, New Mexico, was spudded November 13, 1954, and reached a total depth of 1,943' in the Pictured Cliffs Formation. The Pictured Cliffs Formation between 1,911' to 1,943' was shot with solidified nitroglycerin on December 15, 1954 and the Pictured Cliffs Formation between 1,897' and 1,943' was treated on December 15, 1954 with sand-oil fracturing process. After being shut-in thirteen days, the well was tested on December 30, 1954, and after a three hour blowdown gauged an IP of 582 MCEGPD. with a SICP of 650 psig and a SITP of 650 psig.

J. Glenn Turner's Ballard-Federal No. 1-12 Well located 990' from the North line and 1,140' from the West line of Section 12, Township 26 North, Range 9 West, San Juan County, New Mexico, was spudded November 18, 1954, and reached a total depth of 1,999' in the Pictured Cliffs Formation. The Pictured Cliffs Formation between 1,928' and 1,999' was shot with solidified nitroglycerin on December 3, 1954 and the Pictured Cliffs Formation between 1,913' and 1,999' was treated on December 4, 1954 with sand-oil fracturing process. After being shut-in seven days, the well was tested on December 13, 1954, and after a three hour blowdown gauged an IP of 2148 MCEGPD. with a SICP of 620 psig and a SITP of 620 psig.

J. Glenn Turner's Ballard-Federal No. 2-12 Well located 990' from the South line and 990' from the West line of Section 12, Township 26 North, Range 9 West, San Juan County, New Mexico, was spudded October 29, 1954, and reached a total depth of 2,123' in the Pictured Cliffs Formation. The Pictured Cliffs Formation between 2,028' and 2,085' was treated on November 9, 1954 with sand-oil fracturing process. The Pictured Cliffs Formation between 2,054' and 2,123' was shot with solidified nitroglycerin on December 10, 1954 and the Pictured Cliffs Formation between 2,028' and 2,123' was treated on December 11, 1954 with sand-oil fracturing process. After being shut-in for gauge for eighteen days, the well was tested on

December 30, 1954, and after a three hour blow-down gauged an IP of 789 MCFGPD, with a SICP of 636 psig and a SITP of 636 psig.

J. Glenn Turner's Ballard-Federal No. 3-12 Well located 1,590' from the North line and 880' from the East line of Section 12, Township 26 North, Range 9 West, San Juan County, New Mexico, was spudded December 20, 1954, and reached a total depth of 1,972' in the Pictured Cliffs Formation. The Pictured Cliffs Formation between 1,915' and 1,972' was shot with solidified nitroglycerin on January 3, 1955 and the Pictured Cliffs Formation between 1,903' and 1,972' was treated on January 4, 1955 with sand-oil fracturing process. After being shut-in for seven days, the well was tested on January 11, 1955, and after a three hour blowdown gauged an IP of 1150 MCFGPD, with a SICP of 638 psig and a SITP of 638 psig.

J. Glenn Turner's Ballard-Federal No. 4-12 Well located 990' from the South line and 990' from the East line of Section 12, Township 26 North, Range 9 West, San Juan County, New Mexico, was spudded December 13, 1954, and reached a total depth of 2,019' in the Pictured Cliffs Formation. The Pictured Cliffs Formation between 1,964' and 2,019' was shot with solidified nitroglycerin on December 27, 1954 and the Pictured Cliffs Formation between 1,955' and 2,019' was treated on December 27, 1954 with sand-oil fracturing process. After being shut-in for fourteen days, the well was tested on December 28, 1954, and after a three hour blowdown gauged an IP of 1443 MCFGPD, with a SICP of 666 psig and a SITP of 665 psig.

J. Glenn Turner's Crandell-Federal No. 1-3 Well located 990' from the South line and 990' from the West line of Section 3, Township 26 North, Range 9 West, San Juan County, New Mexico, was spudded on November 23, 1954, and reached a total depth of 2,155' in the Pictured Cliffs Formation. The Pictured Cliffs Formation between 2,078' and 2,155' was shot with solidified nitroglycerin on December 20, 1954 and the Pictured Cliffs Formation between 2,065' and 2,155' was treated on December 22, 1954 with sand-oil fracturing process.

After being shut-in for gauge for seven days, the well was tested on December 30, 1954, and after a three hour blowdown gauged an IP of 1505 MCFGPD. with an SICP of 640 psig and a SITP of 640 psig.

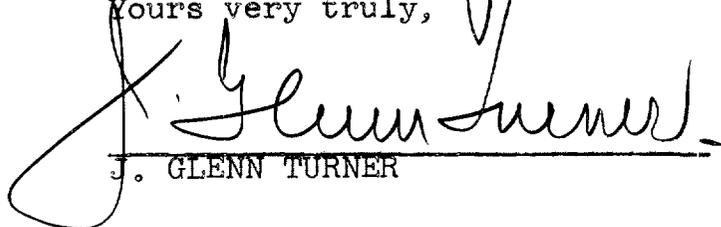
Your attention is respectfully directed to the present Pictured Cliffs Participating Area originally established by Magnolia Petroleum Company, as Unit Operator, and covering the E/2 of Section 23, the W/2 of Section 24, the W/2 of Section 25 and the NE/4 of Section 26, Township 27 North, Range 9 West, N.M.P.M., San Juan County, New Mexico. The wells producing from this Participating Area are, in the opinion of the Unit Operator, producing from a separate pool or deposit of unitized substances and that there is a porosity and permeability barrier existing somewhere within the Unit Area between the above described original Participating Area and the Participating Area the designation of which is sought hereby. In the event that subsequent drilling operations prove this theory on the part of Operator to be erroneous, then all participating areas from the Pictured Cliffs Formation will be consolidated, but it is the opinion of the Unit Operator that such consolidation is not warranted at the present time and that such separate participating areas are contemplated, envisioned and authorized by Section 11 of the Unit Agreement.

Attached hereto is a schedule showing Participating Area Number II for the Pictured Cliffs Formation. This schedule describes the entire participating area, showing the percentage of unitized substances allocated to each unitized tract and the exact breakdown of production allocated to each tract according to the various ownerships in said tract.

There is now pending approval before the Director of the U. S. Geological Survey, the Commissioner of Public Lands of the State of New Mexico, and the Oil Conservation Commission of the State of New Mexico, a designation of J. Glenn Turner as Unit Operator for all formations within the Huerfanito Unit and a resignation by Magnolia Petroleum Company as such Unit Operator. The designation applied for herein should be treated as an application by J. Glenn Turner not only in the capacity herein stated but also as such Unit Operator for all formations upon approval of the undersigned in such new capacity.

Copies of this letter and schedule are being sent to the working interest owners shown on the attached sheet.

Yours very truly,


J. GLENN TURNER

APPROVED: _____ Date: _____
Director, United States
Geological Survey

Subject to like approval by the appropriate State Officials.

APPROVED: _____ Date: _____
Commissioner of Public Lands

Subject to like approval by the U.S.G.S. and the Oil
Conservation Commission.

APPROVED: _____ Date: _____
Oil Conservation Commission

Subject to like approval by the U.S.G.S. and the
Commissioner of Public Lands.

El Paso Natural Gas Company
Post Office Box 1492
El Paso, Texas

Southern Union Gas Company
Burt Building
Dallas, Texas

Huerfanito Gas Company
P. O. Box 1041
Farmington, New Mexico

Skelly Oil Company
Skelly Building
Tulsa 2, Oklahoma

Magnolia Petroleum Company
P. O. Box 900
Dallas 21, Texas

Standard Oil Company of Texas
P. O. Box 1249
Houston, Texas

Aztec Oil & Gas Company
Mercantile Commerce Building
Dallas, Texas

Mr. J. W. McConnell, Jr.
Administrator of the Estate of
W. O. McConnell, deceased
P. O. Box 1041
Farmington, New Mexico

HUERFANITO UNIT AREA

PICTURED CLIFFS PARTICIPATING AREA NO. II

<u>SERIAL NUMBER</u>	<u>DRILLING BLOCK</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP AND PERCENTAGE</u>	<u>COMMITTED</u>	<u>MAXIMUM POSSIBLE PARTICIPATION</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
SF 078135	<u>T-26-N. R-9-W</u> <u>Sec. 3: SW/4</u>	<u>160</u>	<p style="text-align: center;"><u>Tract 3</u></p> <p>Royalty Owner: United States of America; Working Interest Owners: W. O. McConnell; 36.00% J. Glenn Turner; 34.20% William G. Webb; 1.80% ORRI Owners: P. L. Crandell, et al; 15.50% TOTAL 100.00%</p>	12.50%	1.38889%	1.38889%
					11.11111%	11.11111%

Crandell-Federal
#1-3 Well Sec. 3: SW/4 160

100.00% 1.72222% 1.72222%
100.00% 11.11111% 11.11111%

Effective as of date of first production.

HUERFANITO UNIT AREA

PICTURED CLIFFS PARTICIPATING AREA NO. II

<u>SERIAL NUMBER</u>	<u>DRILLING BLOCK</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP AND PERCENTAGE</u>	<u>COMMITTED</u>	<u>MAXIMUM POSSIBLE PARTICIPATION</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
SF 078135	T-26-N, R-9-W Sec. 10: NW/4	<u>160</u>	<p style="text-align: center;"><u>Tract 3</u></p> <p>Royalty Owner: United States of America; Working Interest Owners: W. O. McConnell; 36.00% J. Glenn Turner; 34.20% William G. Webb; 1.80% ORRI Owners: P. L. Crandell, et al; 15.50% TOTAL 100.00%</p>	12.50%	1.38889%	1.38889%
				12.50%	1.38889%	1.38889%
				36.00%	4.00000%	4.00000%
				34.20%	3.80000%	3.80000%
				1.80%	.20000%	.20000%
				15.50%	1.72222%	1.72222%
				100.00%	11.11111%	11.11111%

Crandell-Federal
#1-10 Well Sec. 10: NW/4 160

100.00% 11.11111% 11.11111%

Effective as of date of first production.

HUERFANITO UNIT AREA

PICTURED CLIFFS PARTICIPATING AREA NO. II

<u>SERIAL NUMBER</u>	<u>DRILLING BLOCK</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP AND PERCENTAGE</u>	<u>COMMITTED</u>	<u>MAXIMUM POSSIBLE PARTICIPATION</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
SF 078135	T-26-N, R-9-W Sec. 10: NE/4	<u>160</u>	<p><u>Tract 3</u></p> <p>Royalty Owner: United States of America; Working Interest Owners: W. O. McConnell; 36.00% J. Glenn Turner; 34.20% William G. Webb; 1.80% ORRI Owners: P. L. Crandell, et al; 15.50% TOTAL 100.00%</p>	12.50% 12.50% 36.00% 34.20% 1.80% 15.50% <u>100.00%</u>	1.38889% 1.38889% 4.00000% 3.80000% .20000% 1.72222% <u>11.11111%</u>	1.38889% 1.38889% 4.00000% 3.80000% .20000% 1.72222% <u>11.11111%</u>

Crandell-Federal
#2-10 Well Sec. 10: NE/4 160

100.00%
11.11111%
11.11111%

Effective as of date of first production.

HUERFANITO UNIT AREA

PICTURED CLIFFS PARTICIPATING AREA NO. II

<u>SERIAL NUMBER</u>	<u>DRILLING BLOCK</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP AND PERCENTAGE</u>	<u>COMMITTED</u>	<u>MAXIMUM POSSIBLE PARTICIPATION</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
SF-078388	T-26-N, R-9-W Sec. 11: NW/4	<u>160</u>	<p><u>Tract 8</u></p> <p>Royalty Owner: United States of America; 12.500% 12.500%</p> <p>Working Interest Owners: W. O. McConnell; 36.500% 36.500% J. Glenn Turner; 34.675% 34.675% William G. Webb; 1.825% 1.825%</p> <p>ORRI Owners: Magnolia Petr. Co., et al; 14.500% 14.500%</p> <p>TOTAL 100.000% 100.000%</p>	1.38889%	<u>11.11111%</u> 4.05556% 3.85277% .20278%	<u>11.11111%</u> 1.38889% 4.05556% 3.85277% .20278%

Ballard-Federal
#1-11 Well Sec. 11: NW/4 160

100.000%
11.11111%
11.11111%

Effective as of date of first production.

HUERFANITO UNIT AREA

PICTURED CLIFFS PARTICIPATING AREA NO. 11

<u>SERIAL NUMBER</u>	<u>DRILLING BLOCK</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP AND PERCENTAGE</u>	<u>COMMITTED</u>	<u>MAXIMUM POSSIBLE PARTICIPATION</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
SF-078388	<u>T-26-N, R-9-W</u> <u>Sec. 11: NE/4</u>	<u>160</u>	<u>Tract 8</u> Royalty Owner: United States of America; Working Interest Owners: W. O. McConnell; J. Glenn Turner; William G. Webb; ORRI Owners: Magnolia Petr. Co., et al; TOTAL	12.500% 12.500% 36.500% 34.675% 1.825% 14.500% 100.000%	1.38889% 1.38889% 4.05556% 3.85277% .20278% 1.61111% 11.11111%	1.38889% 1.38889% 4.05556% 3.85277% .20278% 1.61111% 11.11111%
<u>Ballard-Federal</u> <u>#2-11 Well</u>	<u>Sec. 11: NE/4</u>	<u>160</u>		<u>100.000%</u>	<u>11.11111%</u>	<u>11.11111%</u>

Effective as of date of first production.

HUERFANITO UNIT AREA

PICTURED CLIFFS PARTICIPATING AREA NO. 11

<u>SERIAL NUMBER</u>	<u>DRILLING BLOCK</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP AND PERCENTAGE</u>	<u>COMMITTED</u>	<u>MAXIMUM POSSIBLE PARTICIPATION</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
SF-078388	T-26-N, R-9-W Sec. 12: NW/4	160	<p><u>Tract 8</u></p> <p>Royalty Owner: United States of America; 12.500% 12.500%</p> <p>Working Interest Owners: W. O. McConnell; 36.500% 36.500% J. Glenn Turner; 34.675% 34.675% William G. Webb; 1.825% 1.825%</p> <p>ORRI Owners: Magnolia Petr. Co., et al; 14.500% 14.500% TOTAL 100.000% 100.000%</p>	1.38889%	11.11111%	11.11111%
Ballard-Federal #1-12 Well	Sec. 12: NW/4	160		100.000%	11.11111%	11.11111%

Effective as of date of first production.

HUERFANITO UNIT AREA

PICTURED CLIFFS PARTICIPATING AREA NO. II

<u>SERIAL NUMBER</u>	<u>DRILLING BLOCK</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP AND PERCENTAGE</u>	<u>COMMITTED</u>	<u>MAXIMUM POSSIBLE PARTICIPATION</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
SF-078388	T-26-N, R-9-W Sec. 12: NE/4	160	<p><u>Tract 8</u></p> <p>Royalty Owner: United States of America; Working Interest Owners: W. O. McConnell; J. Glenn Turner; William G. Webb; ORRI Owners: Magnolia Petr. Co., et al; TOTAL</p>	12.500% 12.500% 36.500% 34.675% 1.825% 14.500% 100.000%	11.11111% 1.38889% 4.05556% 3.85277% .20278% 1.61111% 11.11111%	11.11111% 1.38889% 4.05556% 3.85277% .20278% 1.61111% 11.11111%
Ballard-Federal #3-12 Well	Sec. 12: NE/4	160		100.000%	11.11111%	11.11111%

Effective as of date of first production.

HUERFANITO UNIT AREA

PICTURED CLIFFS PARTICIPATING AREA NO. II

<u>SERIAL NUMBER</u>	<u>DRILLING BLOCK</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP AND PERCENTAGE</u>	<u>COMMITTED</u>	<u>MAXIMUM POSSIBLE PARTICIPATION</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
SF-078388	T-26-N, R-9-W Sec. 12: SW/4	160	<p style="text-align: center;"><u>Tract 8</u></p> <p>Royalty Owner: United States of America; Working Interest Owners: W. O. McConnell; J. Glenn Turner; William G. Webb; ORRI Owners: Magnolia Petr. Co., et al;</p>	<p>12.500%</p> <p>36.500% 34.675% 1.825%</p> <p>14.500%</p>	<p>1.38889%</p> <p>4.05556% 3.85277% .20278%</p> <p>1.61111%</p>	<p>11.11111%</p> <p>1.38889%</p> <p>4.05556% 3.85277% .20278%</p> <p>1.61111%</p>
Ballard-Federal #2-12 Well	Sec. 12: SW/4	160	<p>TOTAL</p>	<p>100.000%</p>	<p>11.11111%</p>	<p>11.11111%</p>

Effective as of date of first production.

HUERFANITO UNIT AREA

PICTURED CLIFFS PARTICIPATING AREA NO. II

<u>SERIAL NUMBER</u>	<u>DRILLING BLOCK</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP AND PERCENTAGE</u>	<u>COMMITTED PARTICIPATION</u>	<u>MAXIMUM POSSIBLE PARTICIPATION</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
SF-078388	<u>T-26-N, R-9-W</u> Sec. 12: <u>W/2 SE/4</u>	<u>80</u>	<u>Tract 8</u> Royalty Owner: United States of America; Working Interest Owners: W. O. McConnell; 36.5000% J. Glenn Turner; 34.6750% William G. Webb; 1.8250% ORRI Owners: Magnolia Petr. Co., 14.5000% et al 100.0000% <u>14.5000%</u> <u>100.0000%</u>	12.5000%	5.55556%	5.55556%
SF-078434	<u>T-26-N, R-9-W</u> Sec. 12: <u>E/2 SE/4</u>	<u>80</u>	<u>Tract 9</u> Royalty Owner: United States of America; Working Interest Owner: El Paso Natural Gas Company; * 74.5625% ORRI Owners: C. T. Payne, et al 12.9375% TOTAL 100.0000%	12.5000%	5.55556%	5.55556%
Ballard-Federal #4-12 Well	Sec. 12: <u>SE/4</u>	<u>160</u>		100.0000%	11.11112%	11.11112%

Effective as of date of first production.

* After Well Payout Working Interest will change to -E1 Paso - 50.32969%, W. O. McConnell - 23.80874%, O. J. Lilly - .42407%

OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

February 9, 1955

*file
case 286
100-270*

Mr. J. Glenn Turner
17th Floor- Mercantile Bank Bldg.
Dallas 1, Texas

Re: Huerfanito Unit Agreement
San Juan County, New Mexico
Plan of Development for
Calendar Year 1955.

Gentlemen:

This is to advise that the Plan of Development for 1955 for the subject Unit Agreement has this date been approved by the New Mexico Oil Conservation Commission, subject to like approval by the United States Geological Survey and the Commissioner of Public Lands of the State of New Mexico.

One approved copy of the Plan of Development is herewith returned.

Very truly yours,

WBM

W. B. Macey
Secretary - Director

WBM:jh

cc: OREGS - Roswell
Commissioner of Public Lands - Santa Fe

C
O
P
Y

January 14, 1955

Mr. John A. Anderson, Regional Supervisor
United States Geological Survey
Department of the Interior
Post Office Building
Roswell, New Mexico

*approved
2/4/55
WAC*

file

Mr. E. S. Walker
Commissioner of Public Lands
State of New Mexico
Santa Fe, New Mexico

Mr. William Macey, Secretary
Oil Conservation Commission
State of New Mexico
Santa Fe, New Mexico

Re: Huerfanito Unit Agreement
I.-Sec. No. 943
San Juan County, New Mexico
Drilling Program for
Calendar Year 1955

Gentlemen:

Under date of December 30, 1954, J. Glenn Turner, as Sub-Operator for the development and production of natural gas and associated liquid hydrocarbons from all formations down through the base of the Pictured Cliffs Formation, submitted his proposed plan of development for the captioned Unit for the calendar year 1955. Such drilling program contemplated the drilling of twenty Pictured Cliffs Formation gas wells and the recompletion of one Pictured Cliffs Formation gas well. Under date of January 5, 1955, a corrected plan of development was submitted, correcting certain errors in the submittal dated December 30, 1954. Due to an error in the plat of such Unit, this resubmitted plan of development likewise contained certain erroneous descriptions, and we are, therefore, submitting again what we hope to be a final and accurate plan of development for the calendar year 1955.

WAC

We wish to apologize for any inconvenience caused by these errors, and we have, therefore, set forth hereinbelow the correct location of each of the wells to be drilled by the Unit Operator during the calendar year 1955, as well as the correct location of the well to be recompleted during the calendar year 1955, and, as so corrected, J. Glenn Turner hereby submits, for your consideration and approval, a drilling program for the calendar year 1955 within the captioned Unit.

1. Crandell-Federal No. 2-3, SE/4 Sec. 3, T-26-N, R-9-W
2. Crandell-Federal No. 3-3, NE/4 Sec. 3, T-26-N, R-9-W
3. Crandell-Federal No. 4-3, NW/4 Sec. 3, T-26-N, R-9-W
4. Crandell-Federal No. 1-1, SW/4 Sec. 1, T-26-N, R-9-W
5. Crandell-Federal No. 2-1, SE/4 Sec. 1, T-26-N, R-9-W
6. Crandell-Federal No. 3-1, NE/4 Sec. 1, T-26-N, R-9-W
7. Crandell-Federal No. 4-1, NW/4 Sec. 1, T-26-N, R-9-W
8. Crandell-Federal No. 1-3⁴, SW/4 Sec. 3⁴, T-27-N, R-9-W
9. Crandell-Federal No. 2-3⁴, SE/4 Sec. 3⁴, T-27-N, R-9-W
10. Crandell-Federal No. 1-3⁵, SW/4 Sec. 3⁵, T-27-N, R-9-W
11. Crandell-Federal No. 2-3⁵, SE/4 Sec. 3⁵, T-27-N, R-9-W
12. Huerfanito-State No. 1-2, SW/4 Sec. 2, T-26-N, R-9-W
13. Huerfanito-State No. 2-2, SE/4 Sec. 2, T-26-N, R-9-W
14. Huerfanito-State No. 3-2, NE/4 Sec. 2, T-26-N, R-9-W
15. Huerfanito-State No. 4-2, NW/4 Sec. 2, T-26-N, R-9-W
16. Cornell-Federal No. 1-4, SE/4 Sec. 4, T-26-N, R-9-W
17. Cornell-Federal No. 2-4, NE/4 Sec. 4, T-26-N, R-9-W
18. Cornell-Federal No. 3-4, SW/4 Sec. 4, T-26-N, R-9-W
19. Cornell-Federal No. 4-4, NW/4 Sec. 4, T-26-N, R-9-W
20. Cleveland-Federal No. 1-3³, SE/4 Sec. 3³, T-27-N, R-9-W

The name and location of the well to be recompleted by the Unit Operator during the calendar year 1955 is as follows:

Magnolia-Cleveland No. 1, NW/4 Sec. 28, T-27-N, R-9-W

It is proposed that each of such new wells to be drilled shall be drilled with rotary tools to a depth of

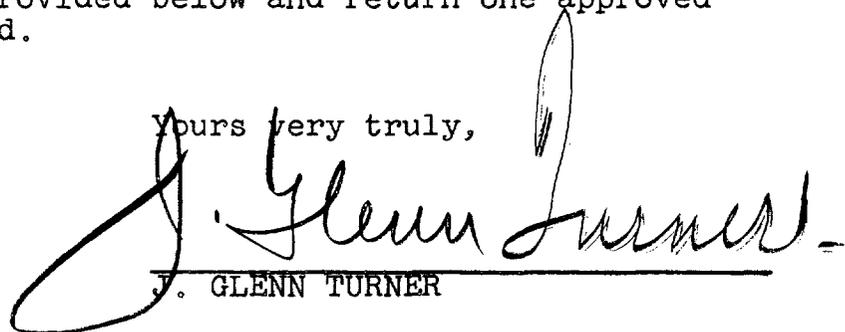
approximately 2,000 feet and 5-1/2 inch casing set on the top of the Pictured Cliffs Formation, following which the hole shall be deepened with cable tools. Upon reaching the base of the Pictured Cliffs Formation, the Operator shall then conduct sand-oil fracing operations with a minimum of 4,500 pounds of sand and 8,000 gallons of Diesel oil as the proposed formation treatment. In the event the result of such proposed sand-oil fracing operations is not entirely satisfactory, the Operator then proposes to shoot the Pictured Cliffs Formation section with solidified nitroglycerine, following which the above referred to sand-oil treatment will be repeated.

In the case of the above referred to Magnolia-Cleveland No. 1 well, which is to be recompleted by the Unit Operator, it is proposed that similar sand-oil fracing and shooting operations be conducted in order to increase the initial potential of this well and thereby secure additional control data on this portion of the Unit Area.

In order that you may be sufficiently advised as to the prior development of the subject Unit, as well as the operations contemplated hereby, we are attaching hereto a map of the Huerfanito Unit Area showing thereon all presently existing wells and the location of the proposed wells.

In the event the drilling operations contemplated hereby encounter marginal production, then it is proposed that auxiliary locations be selected, subject, however, to your like approval. It is likewise proposed that in the event the above referred to drilling operations are successful that this drilling program will be supplemented by the drilling of additional wells within the Unit Area during the calendar year 1955. If the proposed drilling program, as outlined hereinabove, is acceptable to you, please indicate your approval thereof in the space provided below and return one approved copy to the undersigned.

Yours very truly,



J. GLENN TURNER

APPROVED: _____ Date: _____
Supervisor, United States
Geological Survey

Subject to like approval by the appropriate State Officials.

APPROVED: _____ Date: _____
Commissioner of Public Lands

Subject to like approval by the U.S.G.S. and the Oil
Conservation Commission.

APPROVED: *WBM* Date: *2/9/55*
Oil Conservation Commission

Subject to like approval by the U.S.G.S. and the
Commissioner of Public Lands.