

Case No.

1239

Application, Transcript,
Small Exhibits, Etc.

**BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO**

**IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF THE STATE OF NEW
MEXICO FOR THE PURPOSE OF
CONSIDERING:**

**CASE NO. 1220
Order No. L-667**

**THE APPLICATION OF THE OIL
CONSERVATION COMMISSION UPON
THE OWN ESTATE FOR AN ORDER
CREATING AND EXTENDING CERTAIN
POOLS IN SANDOVAL, SAN JUAN,
AND RIO ARriba COUNTIES, NEW
MEXICO.**

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on April 17, 1967, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 29th day of April, 1967, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That there is need for the creation of a new pool in Sandoval County, New Mexico, for the production of oil from the Point Lookout Formation, said pool to bear the designation Stone-Point Lookout Oil Pool. Said Stone-Point Lookout Oil Pool was discovered by Fred Turner, Jr., Sierilla #1, located in the NE/4 SE/4 Section 22, Township 22 North, Range 4 West, NMPN. It was completed January 21, 1966. The top of the perforations is at 4,302 feet.

(3) That there is need for the creation of a new pool in Rio Arriba County, New Mexico, for the production of gas from the Chaco Formation, said pool to bear the designation Stone-Chaco Pool. Said Stone-Chaco Pool was discovered by Amvada Petroleum Corporation, Sierilla A #3, located in the SE/4 NW/4 Section 22, Township 22 North, Range 5 West, NMPN. It was completed December 12, 1966.

(4) That there is need for the creation of a new pool in San Juan County, New Mexico, for the production of oil from the Paradox Formation, said pool to bear the designation Four Corners Paradox Oil Pool. Said Four Corners-Paradox Oil Pool was discovered

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by Murchie Oil and Refining Company Navajo Indian Tribe #1, located in the NE/4 SW/4 of Section 20, Township 22 North, Range 20 West, NMPN. It was completed April 27, 1936. The top of the perforation is at 5,050 feet.

(5) That there is need for certain extensions to the Canyon Large-Pictured Cliffs Pool, the Gavilan-Pictured Cliffs Pool, and the Otter-Pictured Cliffs Pool, all in Rio Arriba County, New Mexico, to the Blanco Mesaverte Pool and the Salinas-Pictured Cliffs Pool, both in Rio Arriba and San Juan Counties, New Mexico, and to the Otter-Sanctee Oil Pool in Sanneval County, New Mexico.

IT IS THEREFORE ORDERED:

(a) That a new pool in Sandoval County, New Mexico, classified as an oil pool for Point Lookout production, be and the same is hereby created and designated as the ~~Point Lookout Oil Pool~~, consisting of the following described area:

TOWNSHIP 22 NORTH, RANGE 4 WEST, NMPN
Section 21: NE/4

(b) That a new pool in Rio Arriba County, New Mexico, classified as a gas pool for Chacra production, be and the same is hereby created and designated as the Otter-Chacra Pool, consisting of the following described area:

TOWNSHIP 20 NORTH, RANGE 5 WEST, NMPN
Section 16: E/2
Section 17: All
Section 21: All
Section 22: W/2 and SE/4
Section 23: SW/4
Sections 25, 27, and 28: All

(c) That a new pool in San Juan County, New Mexico, classified as an oil pool for Paradox production, be and the same is hereby created and designated as the Four Corners-Paradox Oil Pool, consisting of the following described area:

TOWNSHIP 22 NORTH, RANGE 20 WEST, NMPN
Section 20: SW/4 and W/2 NE/4
Section 26: E/2 SE/4 and SE/4 NE/4

(d) That the Blanco Mesaverte Pool in Rio Arriba and San Juan Counties, New Mexico, as heretofore classified, defined, and described, be and the same is hereby extended to include therein:

TOWNSHIP 21 NORTH, RANGE 5 WEST, NMPN
Sections 19 and 20: All
Sections 29 and 30: All
Section 32: All

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(c) That the Ballard-Pictured Cliffs Pool in Rio Arriba and San Juan Counties, New Mexico, as heretofore classified, defined, and described, be and the same is hereby extended to include therein:

TOWNSHIP 23 NORTH, RANGE 7 WEST, NMPH
Section 18: 1/2
Section 19: 2/2

TOWNSHIP 25 NORTH, RANGE 8 WEST, NMPH
Section 24: NW/4

(f) That the Canyon Large-Pictured Cliffs Pool in Rio Arriba County, New Mexico, as heretofore classified, defined, and described, be and the same is hereby extended to include therein:

TOWNSHIP 24 NORTH, RANGE 6 WEST, NMPH
Section 2: NW/4
Section 3: N/2

TOWNSHIP 26 NORTH, RANGE 6 WEST, NMPH
Section 23: S/2
Section 24: S/2

TOWNSHIP 26 NORTH, RANGE 7 WEST, NMPH
Section 20: N/2

(g) That the Gavilan-Pictured Cliffs Pool in Rio Arriba County, New Mexico, as heretofore classified, defined, and described, be and the same is hereby extended to include therein:

TOWNSHIP 25 NORTH, RANGE 1 WEST, NMPH
Section 20: NW/4

TOWNSHIP 26 NORTH, RANGE 2 WEST, NMPH
Section 11: N/2
Section 22: NW/4
Section 23: SE/4
Section 25: N/2
Section 26: N/2

(h) That the Otave-Pictured Cliffs Pool in Rio Arriba County, New Mexico, as heretofore classified, defined, and described, be and the same is hereby extended to include therein:

TOWNSHIP 24 NORTH, RANGE 6 WEST, NMPH
Section 18: N/2
Section 14: NW/4
Section 15: N/2
Section 16: All

(i) That the Otave-Sanctus Oil Pool in Sandoval County, New Mexico, as heretofore classified, defined, and described, be and the same is hereby extended to include therein:

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~~TOWNSHIP 28 NORTH, RANGE 4 WEST, N.M.~~
Section 5: NE/4 and S/4
Section 6: E/2
Section 8: NE/4

WELL at Santa Fe, New Mexico, on the day and year herein-
above designated.

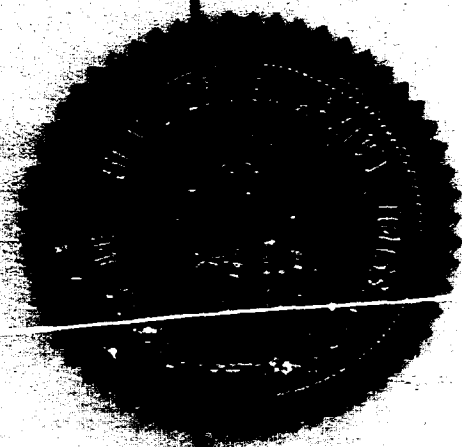
STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

E. L. French
EDWIN L. FRENCH, Chairman

Murray E. Morgan
MURRAY E. MORGAN, Member

A. L. Porter, Jr.
A. L. PORTER, Jr., Member & Secretary

SEAL



**BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
April 17, 1957**

IN THE MATTER OF:

Case No. 1239

TRANSCRIPT OF HEARING

**DEARNLEY, MEIER & ASSOCIATES
INCORPORATED
GENERAL LAW REPORTERS
ALBUQUERQUE - SANTA FE
3-6691 2-2211**

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
April 17, 1957

IN THE MATTER OF:

Northwestern New Mexico nomenclature case calling for the creation of new pools and the extension of existing pools in Sandoval, San Juan and Rio Arriba Counties, New Mexico.

(a) Creation of a new oil pool for Point Lookout production, designated as the Otero-Point Lookout Oil Pool, and described as:

Township 23 North, Range 4 West
Section 32: NE/4

(b) Creation of a new gas pool for Chacra Production, designated as the Otero-Chacra Pool, and described as:

Township 25 North, Range 5 West
Section 10: S/2
All of Sections 17 and 21
Section 22: W/2 and SE/4
Section 23: SW/4
All of Sections 26, 27, and 28.

(c) Creation of a new oil pool for Paradox production, designated as the Four Corners-Paradox Oil Pool, and described as:

Township 32 North, Range 20 West
Section 29: SW/4 and S/2 NW/4
Section 30: E/2 SE/4 and SE/4 NE/4

(d) Extension of the Blanco Mesaverde Pool to include:

Township 31 North, Range 5 West
All of Sections 19, 20, 29, 30, and 32.

(e) Extension of the Ballard-Pictured Cliffs Pool to include:

Township 25 North, Range 7 West
All of Sections 16, 17, and 18
Section 19: S/2

Township 25 North, Range 8 West
Section 24: NW/2

(f) Extension of the Canyon Largo-Pictured Cliffs Pool to include:

Township 24 North, Range 6 West
Section 2: NW/4
Section 3: N/2

Township 25 North, Range 6 West
Section 33: S/2
Section 34: S/2

Township 26 North, Range 7 West
Section 29: N/2

(g) Extension of the Gavilan-Pictured Cliffs Pool to include:

Township 25 North, Range 1 West
Section 30: NW/4

Township 25 North, Range 2 West
Section 11: N/2
Section 22: NW/4
Section 23: SE/4
Section 25: N/2
Section 26: E/2

(h) Extension of the Otero-Pictured Cliffs Pool to include:

Township 24 North, Range 6 West
Section 10: S/2
Section 14: NW/4
Section 15: N/2
Section 16: All

(i) Extension of the Otero-Sanastee Oil Pool to include:

Township 22 North, Range 4 West
Section 5: NW/4 and S/2
Section 6: N/2
Section 8: NE/4

CASE NO. 1239

BEFORE:

Honorable E. L. Nechem
Mr. A. L. Porter
Mr. Murray Morgan

TRANSCRIPT OF HEARING

MR. PORTER: Take up next Case 1239.

ALVA UTZ
having been first duly sworn, called as a witness, testified as follows:

DIRECT EXAMINATION

BY: MR. COOLEY:

Q State your name and occupation, please?

A Alva A. Utz, engineer with the Oil Conservation Commission.

Q Mr. Utz, have you previously been qualified as an expert witness before this Commission?

A Yes, I believe so.

Q Mr. Utz, have you had an opportunity to make a study of the creation of a new pool for Point Lookout production in Township 23 North, Range 4 West?

A Yes, I have.

Q What are your recommendations in that regard?

A I recommend that a new pool be created for Point Lookout Production to be called the Otero Point Lookout Oil Pool, which is based on two wells capable of producing in the Mesa Verde Point Lookout in this area.

Q What would be the horizontal and vertical limits of that pool, Mr. Utz?

A The vertical limits would be the Point Lookout Formation, the horizontal would be the Northeast Quarter of Section 32, 23 North, 4 West, as advertised.

Q Mr. Utz, inasmuch as the discovery well establishes an allowable for the pool, would you give us the name of the discovery well, and the top of perforation?

A The discovery well was the Fred Turner Jr. No. 1 Jicarilla, 990 feet from the North and 990 feet from the East, Section 32, Township 23 North, Range 4 West, the top of perforation 4382 to 4411.

Q Mr. Utz, have you made a study for the creation of a new gas pool for Chacra production in Township 25 North, Range 5 West?

A Yes, sir, I have, and I recommend that the Otero Chacra Gas Pool be created as advertised on the basis of six wells capable of producing from this formation.

Q And what was the discovery well for that, Mr. Utz?

A The discovery well for that pool was the Amerada Petroleum No. 3 Jicarilla A, 990 feet from the South, 1650 feet from the West, Section 23, 25 North, 5 West. I do not have the top of the perforation. It doesn't matter, it is a gas pool anyway.

MR. ARNOLD: I was just going to state, I believe you have the perforation on that exhibit that I gave you there.

A I don't believe it matters. It is probably in here, and I will enter this as an exhibit.

Q Mr. Utz, have you made a study for the creation of a new oil pool for Paradox production in Township 32 North, Range 20 West?

A Yes, I have. I recommend that a new pool, to be called the Four Corners Paradox Oil Pool be created as follows: Section 29, Southwest Quarter, and the South Half of the Northwest Quarter, Section 30, the East Half of the Southeast Quarter, and the Southeast Quarter of the Northeast Quarter, all in Township 32 North, Range 20 West. This creation is based on the Humble Oil and Refining No. 1 Navajo Indian Tribe, located 1980 feet from the South, 660 feet from the West, Section 29, Township 32 North, Range 20 West. The top of perforation on this well is 5608.

MR. PORTER: Mr. Utz, this is not pertinent to the case, but do you remember about what the potential on that well was?

A Yes, Sir,, initial potential of 412 barrels of oil and 43.7 gravity.

Q Mr. Utz, have you made a study concerning the extension of the Blanco Mesaverde Gas Pool?

A Yes, I have. I recommend that the Blanco Mesaverde Gas Pool be extended as advertised on the basis of three wells capable of producing from that formation.

Q Do you have any recommendations concerning extension of the Ballard Pictured Cliffs Gas Pool?

A Yes, I recommend that the Ballard Pictured Cliffs Gas Pool be extended as advertised on the basis of nine wells capable of producing from that formation.

Q Do you have any recommendations concerning the extension of the Canyon Largo Pictured Cliffs Gas Pool?

A Yes, I have. I recommend that the Canyon Largo Pictured Cliff Gas Pool be extended as advertised on the basis of four wells capable of producing from that formation.

Q What are your recommendations concerning extension of the Gavilan Pictured Cliffs Gas Pool?

A I recommend that the Gavilan Pictured Cliffs Gas Pool be extended as advertised on the basis of five wells capable of producing from that formation.

Q Do you have any recommendations concerning the extension of the Otero Pictured Cliffs Gas Pool?

A Yes, I recommend that the Otero Pictured Cliffs Gas Pool be extended as advertised on the basis of six wells capable of producing from that formation.

Q Do you have any recommendations concerning the extension of the Otero Sanastee Oil Pool?

A I recommend that the Otero Sanastee Oil Pool be extended as advertised on the basis on one well capable of producing from that formation.

Q Do you have any further recommendations in this case, Mr. Utz?

A I have no further recommendations.

Q Do you have any exhibits in this case?

A Yes, I have an exhibit which shows my recommendations

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together with the wells on which these recommendations are based.

Q Was this exhibit prepared by you or under your supervision?

A It was prepared by me under my supervision.

MR. COOLEY: At this time we would like to offer Exhibit 1 in evidence.

MR. PORTER: Without object, it will be admitted.

A I also have two other exhibits which I would like to enter in the record in regard to the Otero Chacra Gas Pool. The Chacra formation has been subject to some question in this area, and has been studied by Mr. Arnold of our office, Aztec office, as well as the Four Corners Geological Society, and I have here an exhibit which was prepared by Mr. Arnold which gives a little history on the Chacra formation, as well as a letter from Mr. Frank Pritchett of the Four Corners Geological Society, which I would like to enter into the record in support of that recommendation.

MR. COOLEY: I would like to recommend that the two documents which the witness has been testifying to be identified as Exhibit No. 2 in this case.

MR. PORTER: They will be so identified, and without objection, they will be admitted into the record.

MR. COOLEY: Do you have anything further Mr. Utz.

A That's all.

MR. PORTER: Does anyone have a question of Mr. Utz.
Mr. Hutter.

CROSS EXAMINATION

BY: MR. NUTTER:

Q Mr. Utz, were all extensions and creations of those advertised?

A No, sir. Pardon me just a moment. The Four Corners Paradox Oil Pool was not advertised, but it is as I read it into the record, and as the exhibit shows.

MR. NUTTER: Thank you.

BY: MR. HANKIN:

Q Mr. Utz, the advertisement indicated numerous gas pools here, but did not indicate the gas in it. Wouldn't it be your recommendation that the word "gas" be inserted in that particular name?

A You say the advertisement did not include "gas pool"?

Q Yes.

A Yes, I recommend that we call a gas pool a gas pool, and an oil pool an oil pool where ever it may be in the statement.

MR. HANKIN: That is all.

MR. PORTER: Anyone else have anything further in this case?

MR. COOLEY: I would like the record to show that the discrepancy referred to by Mr. Nutter, and the answer by Mr. Utz concerning the Paradox Pool was one considered by the attorney for the Commission to be insignificant enough not to require the re-advertisement of the case, the use of the fraction 7/8 rather than the exact for "and", that being the only error in advertisement.

MR. ARNOLD: I would like to say that we caught that error in the Farmington paper, and we also considered it too insignificant to re-advertise it, but I wanted to get a ruling on that for the future when we check those.

MR. PORTER: Well, there has been no objection entered as the case was advertised. We will take the case under advisement and the hearing is adjourned.

STATE OF NEW MEXICO)
COUNTY OF BERNALILLO)

ss

I, J. A. Trujillo, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me in Stenotype and reduced to typewritten transcript by me, and that the same is a true and correct record to the best of my knowledge, skill, and ability.

WITNESS my Hand and Seal, this the 3rd day of May, 1957, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

J. A. Trujillo
Notary Public

My Commission Expires:

October 5, 1960

DEARNLEY - MEIER & ASSOCIATES
INCORPORATED
GENERAL LAW REPORTERS
ALBUQUERQUE - SANTA FE
3-6691 2-2211



R. C. TUCKER, PRES.

211½ West Main Street
Farmington, New Mexico

PHONE 2-2241
ADDRESS REPLY TO:
BOX 1239
MIDLAND, TEXAS

April 2, 1957

Mr. Emory Arnold
New Mexico Oil Conservation Commission
P.O. Box 697
Astec, New Mexico

Dear Emory:

In conjunction with nomenclature for the Otergo (Geographic) field, it is the consensus of opinion of the Four Corners Geological Society that the term Chacra be applied to that producing horizon which appears to be a regressive tongue of the Cliff House member of the Mesa Verde formation.

If you would like more detailed geological reasons for the Chacra term, please let me know and I will try to fix you up.

Very truly yours,

GREAT WESTERN DRILLING COMPANY

Frank I. Pritchett, Jr.
Frank I. Pritchett, Jr.

FTP:ina



*Exhibit #2
Case 1239*

There has been some disagreement among the various operators in the Basin as to what the producing zone found in the Lewis Shale in this area should be called. These disagreements have been occurring regarding not only this production zone but almost every other cretaceous formation in the area. The disagreements regarding proper nomenclature have occurred for a variety of reasons. The first goes back to early mapping work which was done in the Basin by the U.S.G.S. The area is some one hundred miles square and the older formations are exposed only around the edges. Therefore it was in many cases impossible for early workers to correlate units across the entire basin. The San Juan Basin is generally recognized to be a classic example of regressive-transgressive type deposition. This causes sand and shale units to migrate upward and downward stratigraphically so that time lines do not follow lithologic boundaries. Therefore sand units on one side of the Basin are represented by shales in the same position on the other side. These relationships were naturally imperfectly understood by early workers. Hence different names were used on various sides of the Basin for the similar lithologic units. As drilling has spread into the Basin and relationships of the various units has become more clear it became evident that the same formations had two names and in some cases even three, as happens when the name for a unit is carried in simultaneously from three different sides of the Basin. Which geological horizon to use for a formation top has also caused confusion. Some geologists apparently have attempted to measure out crop sections and then move these intervals into the Basin without regard for changing lithology. The general practice, however, has been to use lithologic boundaries for formation boundaries. For instance, which of the interval occupied by the Mesaverde formation on the Southwest side of the Basin which is predominantly sandstone is occupied by the Lewis shale on the Northeast side of the Basin. Rock boundaries and formation boundaries migrate stratigraphically across time lines.

The La Ventana Sandstone is a localized term which is used for a sandstone interval which was deposited on the East side of the Basin during a stable period

Exhibit # 2
Case 1239

at the end of the regressive phase of the Cretaceous sea which deposited the Point Lookout sandstone. Following the deposition of the La Ventana sandstone a transgressive phase occurred which deposited the Cliff House-Chacra Sandstone. The Cliff House-Chacra rises stratigraphically to the West and South as the sea was transgressing in that direction. As the Cliff House-Chacra shore line moved west Lewis shale was simultaneously being deposited to the East. Stable periods occurred at various times during the Cliff House-Chacra transgression and there is also evidence of minor regressions of the sea during this time. This had the effect of depositing regressive tongues of Sandstone for some distance eastward over Lewis shale. Evidence seems to indicate that the producing zone in the Lewis shale in 25N-5W is a regressive tongue of this type. It would therefore be genetically closely related to the Cliff House-Chacra formations. From a practical standpoint it cannot be called Cliff House because the horizon used as the top of the Cliff House Formation in the Blanco Mesaverde Pool is some 800 feet deeper and confusion would result. The term Chacra has not been used for any other producing zone and would not be objectionable on those grounds. I would not recommend the use of a new term to describe this producing zone as it is obvious that part of our present difficulty stems from the use of too many names for the same formation. It is therefore my recommendation to designate the producing zone discovered in the Amerada F-1 Jicatilla well as "Chacra Sandstone". The sandstone interval in this well is from 3532 to 3735 and the producing perforations are from 3588-3610.

1957

RECOMMENDED EXTENSIONS AND CREATIONS FOR THE APRIL HEARING

(a) Creation of a new pool in Sandoval County for oil production from the Point Lookout formation, known as the Otero Point Lookout Oil Pool.

Township 23 North, Range 4 West, Sandoval County
Section 32, NE/4

based on:

Fred Turner Jr. #1 Jicarilla
990/N; 990/E, Section 32-23N-4W
IP 28 BOPD, 38° gravity
Perforations 4382 to 4411, Completed 1-21-55
Discovery Well.

Fred Turner Jr. #2 Jicarilla
1980/N; 1980/E 32-23N-4W
IP 28 BOPD, Comp. 6-23-56
Perforations 4372-78

(b) Creation of a new pool in Rio Arriba County for gas production from the Chacra formation, known as the Otero Chacra Gas Pool.

Township 23 North, Range 5 West, Rio Arriba County

Section 16, S/2
Section 17, All
Section 21, All
Section 22, W/2, SE/4
Section 23, SW/4
Section 26, All
Section 27, All
Section 28, All

based on:

Amerada Petroleum #2 Jicarilla F
990/N; 990/W, Section 17-25N-5W
AOF 4558 MCFPD; SITP 852 # ? days

Amerada Petroleum #1 Jicarilla F
1650/S; 1650/E, Section 17-25N-5W
AOF 2377 MCFPD; SITP 844 # ? days

Skelly Oil Company #10 Jicarilla C
1190/S; 1190/W, Section 22-25N-5W
AOF 2740 MCFPD; SITP 750 #/2 days

Amerada Petroleum #3 Jicarilla A
990/S; 1650/W, Section 23-25N-5W
AOF 544 MCFPD
Discovery Well.

Amerada #4 Jicarilla A
990/S; 990/E, Section 26-25N-5W
AOF 1122 MCFPD; SITP 944 #/13 days

Skelly Oil Company #11 Jicarilla C
1450/S; 1190/W, Section 27-25N-5W
AOF 1300 MCFPD; SITP 949 #/? days

Skelly Oil Company #9 Jicarilla C
1450/S; 1450/W, Section 28-25N-5W
AOF 2190 MCFPD; SITP 931 #/? days

(c) Creation of a new pool in San Juan County for oil production from the Paradox formation, known as the Four Corners Paradox Oil Pool.

Township 32 North, Range 20 West, San Juan County
Section 29, SW/4 and S/2 SW/4
Section 30, E/2 SE/4; SE/4 NE/4

based on:

Exhibit 4
Case 1239

Humble Oil and Refining #1 Navajo Indian Tribe
 1980/S; 660/W, Section 29-32N-20W
 IP 412 BOPD, 43.7° gravity
 Perforations 5608-5632
 Completed 4-27-56
 Discovery Well.

(d) Blanco Mesaverte Gas Pool

Township 31 North, Range 5 West, Rio Arriba County

Section 19, All
 Section 20, All
 Section 29, All
 Section 30, All
 Section 32, All

based on:

Pacific Northwest #17-20 Rosa Unit
 990/S; 990/W, Section 20-31N-5W
 AOF 2063 MCFPD; SICP 1192 #/? days

Pacific Northwest #15-29 Rosa Unit
 1680/N; 1110/E, Section 29-31N-5W
 AOF 3149 MCFPD; SICP 1109 #/? days

El Paso Nat. Gas #24 Rosa Unit
 990/S; 990/W, Section 32-31N-5W
 AOF 2633 MCFPD; SICP 1195 #/31 days

(e) Ballard Pictured Cliffs Gas Pool

Township 25 North, Range 7 West, Rio Arriba County

Section 16, All
 Section 17, All
 Section 18, All
 Section 19, N/2

Township 25 North, Range 8 West, San Juan County

Section 24, NW/4

based on:

El Paso Natural Gas #6 Harvey State
 1120/N; 1090/E, Section 16-25N-7W
 AOF 3316 MCFPD; SICP 638 #/7 days

El Paso Natural Gas #2 Harvey State
 1150/W; 1650/W, Section 16-25N-7W
 IP 2506 MCFPD; SICP 650 #/17 days

El Paso Natural Gas #1 Harvey State
 1650/S; 890/E, Section 16-25N-7W
 IP 434 MCFPD; SICP 643 #/24 days

El Paso Natural Gas #7 Harvey State
 800/S; 915/W, Section 16-25N-7W
 AOF 1782 MCFPD; SICP 637 #/13 days

Western Natural #4 Nordhaus-Fed.
 990/S; 1650/E, Section 17-25N-7W
 AOF 4185 MCFPD; SICP 636 #/? days

Western Natural #2 Nordhaus-Fed.
 1656/N; 1752/W, Section 18-25N-7W
 AOF 2102 MCFPD; SICP 643 #/? days

Western Natural #1 Nordhaus-Fed.
 1085/S; 1650/W, Section 18-25N-7W
 AOF 8157 MCFPD; SICP 648 #/24 days

Western Natural #5 Nordhaus-Fed.
 1463/N; 1166/E, Section 19-25N-7W
 AOF 9204 MCFPD; SICP 634 #/? days

Western Natural #1 Graham-Fed.
 790/N; 1850/W, Section 24-25N-8W
 AOF 11032 MCFPD; SICP 634 #/? days

(f)

Canyon Largo Pictured Cliffs Gas Pool

Township 24 North, Range 6 West, Rio Arriba County

Section 2, NW/4
Section 3, E/2

Township 25 North, Range 6 West, Rio Arriba County

Section 33, S/2
Section 34, S/2

Township 26 North, Range 7 West, Rio Arriba County

Section 29, N/2

based on:

Benson-Montin-Greer #1 NCRA State
1492/N; 1050/W, Section 2-24N-6W
IP 1353 MCFPD; SICP 712#/59 days

Superior Oil Company #1-3 Phillips
990/N; 990/W, Section 3-24N-6W
IP 1883 MCFPD; SICP 706 #/21 days

V. M. Salazar #1 Campbell
1150/S; 800/W Section 34-25N-6W
IP 441 MCFPD; SICP 702 #/7 days

El Paso Natural Gas #4-29 Hughes
800/N; 950/E, Section 29-26N-7W
IP 118 MCFPD; SICP 753 #/24 days

(g)

Gavilan Pictured Cliffs Gas Pool

Township 25 North, Range 1 West, Rio Arriba County

Section 30, NW/4

Township 25 North, Range 2 West, Rio Arriba County

Section 11, N/2
Section 22, NW/4
Section 23, SE/4
Section 25, N/2
Section 26, E/2

based on:

San Juan Gas Corp. #30-G Federal
1160/N; 480/W, Section 30-25N-1W
IP 2820 MCFPD; SICP 922 #/? days

San Juan Gas Corp. #11-C Nazarene Church
1190/N; 925/W, Section 11-25N-2W
AQF 737 MCFPD; SICP 938 #/7 days

San Juan Gas #22 Federal C
1763/N; 1755/W, Section 22-25N-2W
IP 954 MCFPD; SICP 944#/? days

San Juan Gas #25 Federal C
1040/W; 885/W, Section 25-25N-2W
IP 1151 MCFPD; SICP 938 #/? days

San Juan Gas #26 Federal D
1370/S; 1820/E, Section 26-25N-2W
AQF 1465 MCFPD; SICP 879#/? days

(h)

Otero Pictured Cliffs Gas Pool

Township 24 North, Range 6 West, Rio Arriba County

Section 10, S/2
Section 14, NW/4
Section 15, N/2
Section 16, All

based on:

E. B. Germany - Outler #5
1600/S; 820/E, Section 10-24N-6W
IP 2947 MCFPD; SICP 540/7 days

Superior Oil Company #1-15 Teel-Govt.
990/N; 990/W, Section 15-24N-6W
IP 4052 MCFPD; SICP 702 #/11 days

Benson-Montin-Greer #2 NCRA State
1450/N; 890/W, Section 16-24N-6W
IP 1589 MCFPD; SICP 701 #/71 days

Benson-Montin-Greer #8 NCRA State
1850/N; 790/E, Section 16-24N-6W
AGF 3723 MCFPD; SICP 688 #/7 days

Benson-Montin-Greer #7 NCRA State
1450/S; 1650/W, Section 16-24N-6W
AGF 6731 MCFPD; SICP 654#/21 days

Benson-Montin-Greer #4 NCRA State
1290/S; 1090/E, Section 16-24N-6W
AGF 4000 MCFPD (est.)

(1) Cerro Sanasies Oil Pool, Sandoval County

Township 22 North, Range 4 West, Sandoval County

Section 5, NW/4, S/2
Section 6, N/2
Section 8, NE/4

based on:

Skelly Oil Company #1 Jicarilla E
990/N; 990/E, Section 8-22N-4W
IP 32 BOPD (Pump)