

CASE 3448: Application of PAN AM.  
for an unorthodox location, Lea  
County, New Mexico.

Case Number

3448

Application

Transcripts.

Small Exhibits

ETC.

GOVERNOR  
JACK M. CAMPBELL  
CHAIRMAN

State of New Mexico  
Oil Conservation Commission



LAND COMMISSIONER  
GUYTON B. HAYS  
MEMBER

STATE GEOLOGIST  
A. L. PORTER, JR.  
SECRETARY - DIRECTOR

P. O. BOX 2088  
SANTA FE

August 30, 1966

Mr. Guy Buell  
Pan American Petroleum Corporation  
Post Office Box 1410  
Fort Worth, Texas

Re: Case No. 3448  
Order No. R-3109  
Applicant:

PAN AMERICAN

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

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

ir/

Carbon copy of order also sent to:

Hobbs OCC x

Artesia OCC       

Aztec OCC       

OTHER

BEFORE THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

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

CASE No. 3448  
Order No. R-3109

APPLICATION OF PAN AMERICAN PETROLEUM  
CORPORATION FOR AN UNORTHODOX LOCATION,  
LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on August 24, 1966,  
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 30th day of August, 1966, the Commission, a  
quorum being present, having considered the testimony, the record,  
and the recommendations of the Examiner, 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 the applicant, Pan American Petroleum Corporation,  
seeks authority to drill its South Mattix Unit Well No. 21 at an  
unorthodox location 1873 feet from the South line and 2087 feet  
from the West line of Section 15, Township 24 South, Range 37  
East, NMPM, Fowler-Ellenburger Pool, Lea County, New Mexico.

(3) That the applicant has drilled a well at a standard  
location in the SE/4 SW/4 and that due to conditions in said well,  
it has been plugged back to and is now producing from the Blinbry  
formation.

(4) That due to said conditions, it is not feasible to drill  
another well into the Ellenburger formation at a standard location  
in the SE/4 SW/4.

-2-

CASE No. 3448  
Order No. R-3109

(5) That a well drilled at the proposed location should result in greater ultimate recovery of oil than a well drilled at a standard location in the SE/4 SW/4.

(6) That approval of the subject application will afford the applicant the opportunity to produce its just and equitable share of the oil in the Fowler-Ellenburger Pool, will prevent the economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells, and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Pan American Petroleum Corporation, is hereby authorized to drill its South Mattix Unit Well No. 21 at an unorthodox location in the Fowler-Ellenburger Pool 1873 feet from the South line and 2087 feet from the West line of Section 15, Township 24 South, Range 37 East, NMPM, Lea County, New Mexico.

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

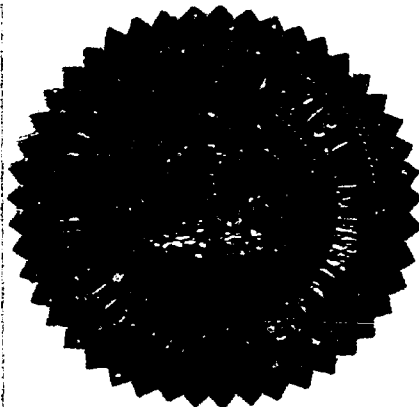
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

  
JACK M. CAMPBELL, Chairman

  
GUYTON B. HAYS, Member

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



esr/

Case 3448

Heard. 8-24-66

Rec. 8-25-66.

1. Grant Pan Am. an unorthodox location for their S.M.U. well #21, to be located 1973/S 2087/W, 15-245-37E. This is an exception to R-195B, ~~Part~~ <sup>Part</sup> (b)
2. The location is necessitated by a bad cement job in the S.M.U. #2 well which caused the Ellenburger to water out in the immediate area of the well bore causing the well to be plugged back to ~~the~~ a higher formation.
3. The well will be necessary for Pan to protect the correlative rights of the Couch Matter unit.

Thos A. [Signature]

1966 Aug 18 PM 3:30

BEFORE THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

IN RE: APPLICATION OF PAN AMERICAN )  
PETROLEUM CORPORATION FOR AN )  
UNORTHODOX LOCATION IN FOWLER ) No. 3448  
ELLENBURGER POOL, LEA COUNTY, NEW )  
MEXICO )


ENTRY OF APPEARANCE

The undersigned, Atwood & Malone of Roswell, New Mexico,  
a firm of attorneys whose members are duly licensed to practice law  
in the State of New Mexico, hereby enters its appearance in the above  
entitled proceedings as local counsel for Pan American Petroleum  
Corporation with Guy T. Buell, Esquire, of the Texas Bar.

DATED at Roswell, New Mexico, this 17th day of August, 1966.

ATWOOD & MALONE

By



Attorneys for Pan American  
Petroleum Corporation  
Post Office Drawer 700  
Roswell, New Mexico

DOCKET: EXAMINER HEARING - WEDNESDAY - AUGUST 24, 1966

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,  
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

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The following cases will be heard before Elvis A. Utz, Examiner, or Daniel S. Nutter, Alternate Examiner:

CASE 3437: (Continued and readvertised from the August 3, 1966 Examiner Hearing)

Application of Anadarko Production Company for a waterflood expansion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand its Pearsall Queen Sand Unit waterflood project by the injection of water into the Queen formation through one well to be drilled at an unorthodox location 25 feet North of the South line and 25 feet West of the East line of the SE/4 NW/4 of Section 4, Township 18 South, Range 32 East, Lea County, New Mexico.

CASE 3443: Application of Mobil Oil Corporation for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the approval of its Northeast Square Lake (Premier) Unit Area comprising 2,200 acres, more or less, of Federal and State lands in Township 16 South, Range 31 East, Eddy County, New Mexico.

CASE 3444: Application of Mobil Oil Corporation for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its Northeast Square Lake (Premier) Unit by the injection of water into the Premier Sand of the Grayburg formation through 14 wells located in Sections 2, 3, 9, 10, and 11, Township 16 South, Range 31 East, North Square Lake Pool, Eddy County, New Mexico.

CASE 3445: Application of Kersey & Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Grayburg-San Andres formation through two wells located in Section 32, Township 17 South, Range 32 East, Maljamar Pool, Lea County, New Mexico.

CASE 3446: Application of Kersey & Company for an amendment to Order No. R-2908, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-2908 which authorized a waterflood project in the Old Loco Unit, Loco Hills Pool, Eddy County, New Mexico. Applicant seeks authority to substitute 8 wells in Section 32, Township 17 South, Range 29 East, for the 6 wells previously authorized for injection so that the injection pattern will conform to that of a nearby project currently in operation.

CASE 3447: Application of Texas Pacific Oil Company for down-hole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle production from the North Bagley Middle-Pennsylvanian and North Bagley Upper-Pennsylvanian Pools in the wellbore of its J. P. Collier Well No. 1 located in Unit F of Section 10, Township 11 South, Range 33 East, North Bagley Field, Lea County, New Mexico.



-2-

Docket No. 21-66

CASE 3448:

Application of Pan American Petroleum Corporation for an unorthodox location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to complete its South Mattix Unit Well No. 21 at an unorthodox location 1873 feet from the South line and 2087 feet from the West line of Section 15, Township 24 South, Range 37 East, Fowler Ellenburger Pool, Lea County, New Mexico.

428  
3

# PAN AMERICAN PETROLEUM CORPORATION

OIL AND GAS BUILDING      P. O. BOX 1410  
FORT WORTH, TEXAS—76101

WILLIAM V. GRISHAM  
DIVISION ENGINEER

July 21, 1966

3448

File: GHF-262-986.510.1

Subject: Application of Pan American Petroleum Corporation for an Exception to the Fowler (Ellenburger) Pool for its South Mattix Unit Well No. 21, Lea County, New Mexico

PAN AMERICAN PETROLEUM CORPORATION  
JUL 25 AM 7 34

Mr. A. L. Porter (3)  
Secretary-Director  
New Mexico Oil Conservation Commission  
P. O. Box 871  
Santa Fe, New Mexico

Dear Sir:

Pan American Petroleum Corporation respectfully requests that a hearing be docketed to consider its application for approval of an unorthodox location in the Fowler (Ellenburger) Pool for its South Mattix Unit Well No. 21. The proposed location for this well is 1873' from the south line and 2087' from the west line of Section 15, T-24-S, R-37-E, Lea County, New Mexico.

Pan American will request approval of the assignment of an 80-acre proration unit comprising the E/2 SW/4 of Section 15, T-24-S, R-37-E to the proposed well.

The names and addresses of the offset operators are as follows:

Gulf Oil Corporation  
P. O. Drawer 1938  
Roswell, New Mexico 88201

Humble Oil and Refining Co.  
P. O. Box 1600  
Midland, Texas 79704

Yours very truly,

*W. V. Grisham*

CFH:df

DOCKET MAILED

Date 8-11-66

*h*

LEWIS B. BURLESON

2485  
JACK HUFF

BURLESON & HUFF

OIL PROPERTIES  
BOX 935 - PHONE MU 3-4747  
MIDLAND, TEXAS

October 26, 1966

New Mexico Oil Conservation Commission  
P. O. Box 2088  
Santa Fe, New Mexico

Attention: Mr. A. L. Porter, Jr.  
Secretary-Director

Re: Application for Administrative Approval  
for Non-Standard Proration Unit and  
Exception to Designated Well Location.  
North Anderson Ranch-Wolfcamp Pool,  
Lea County, New Mexico.

Gentlemen:

We propose to drill a well to test the Wolfcamp formation at a depth of about 9,900 feet located 990 feet from the north line and 330 feet from the east line of Lot 3, Section 2, Township 16 South, Range 32 East, N.M.P.M., Lea County, New Mexico. We have obtained a farmout agreement from Sunray DX Oil Company, the owner of the State of New Mexico oil and gas lease number E-5301 which covers said Lot 3 together with other land. Attached is a plat with Lot 3 colored in red and our proposed location shown thereon. Our proposed location is a direct offset to a producing well in the North Anderson Ranch-Wolfcamp Pool.

We request that we be authorized to drill on the above location by administrative approval without hearing and notice as an exception to the field rules for the North Anderson Ranch-Wolfcamp Pool, which rules provide that wells drilled south of the common line between Township 15 South and Township 16 South shall be located in either the NW/4 or SE/4 of a governmental quarter section. Our proposed location is in the NE/4 of a governmental quarter section. We further request that our proration unit be approved as consisting solely of said Lot 3, which contains 50.30 acres, and that our allowable be determined as provided by Rule 3 of the aforementioned field rules.

Page 2  
New Mexico Oil Conservation Commission  
October 26, 1966

Our requests are made due to the fact that the only acreage we have on which to drill in said Section 2 is Lot 3, and we wish to drill on such lot and maintain the production from it as a unit by itself.

We have on this date mailed copies of this application by certified mail with return receipt requested to all of the offsetting operators to Lot 3, notifying them of our application. The offsetting operators are as follows: Gulf Oil Corporation is the operator to the west, southwest, south and southeast; Mobil Oil Company is the operator to the east; and Shell Oil Company is the operator to the north. We are the owner of the State of New Mexico oil and gas lease covering the locations to the northwest and northeast of Lot 3. Photo copies of receipts showing notices have been mailed are attached hereto, and photo copies of the signed receipts from the offset operators will be forwarded to you after they have been returned to us.

This application is submitted to you in triplicate.

Yours very truly,

BURLESON & HUFF



Jack Huff

JH/mj

Attachments

ATWOOD & MALONE  
LAWYERS

P. O. DRAWER 700  
TELEPHONE 505 622-6221  
SECURITY NATIONAL BANK BUILDING  
ROSWELL, NEW MEXICO  
88201

AUGUST  
17th  
1966

JEFF O. ATWOOD (863-1960)  
ROSS L. MALONE  
CHARLES F. MALONE  
RUSSELL D. MANN  
PAUL A. COOTER  
BOB F. TURNER  
ROBERT A. JOHNSON  
JOHN W. BASSETT, JR.

MAIL ROOM

66 AUG 18 PM 1 39

Mr. A. L. Porter, Jr.  
Secretary  
New Mexico Oil Conservation Commission  
Post Office Box 871  
Santa Fe, New Mexico

Re: Case No. 3448 on Docket No. 21-66

Dear Mr. Porter:

We enclose herewith our Entry of Appearance on behalf of Pan American Petroleum Corporation in the above captioned case on the Examiner's docket for August 24, 1966, with the request that you please file same.

Thank you.

Very truly yours,

  
for ATWOOD & MALONE

R  
D  
M

\*

v  
Encs.

Cc: J. K. Smith, Esquire  
Guy T. Buell, Esquire

**dearniey-meier reporting service, inc.**

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

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BEFORE THE  
OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
August 24, 1966

Application of Pan American Petroleum  
Corporation for an unorthodox location,  
Lea County, New Mexico

CASE NUMBER  
3448

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BEFORE THE  
OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
August 24, 1966

Application of Pan American Petroleum Corporation for an unorthodox location, Lea County, New Mexico.

CASE NUMBER  
3448

BEFORE:

ELVIS A. UTZ, Examiner

TRANSCRIPT OF HEARING

HEARING EXAMINER ELVIS A. UTZ: Case 3448.

MR. GEORGE HATCH: Case 3448. Application of Pan American Petroleum Corporation for an unorthodox location, Lea County, New Mexico.

MR. BUELL: For Pan American Petroleum Corporation. Guy Buell. And we have one witness, Mr. Harpke.

MR. UTZ: Would you swear the witness?  
(Whereupon, the witness was sworn.)

CARL F. HARPKE

called as a witness, having been previously duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. GUY BUELL:

Q Mr. Harpke, would you state your full name, by whom

you are employed, and in what capacity, and in what location, please?

A I am Carl F. Harpke. I am employed by Pan American Petroleum Corporation at Fort Worth as petroleum engineer.

Q Mr. Harpke, have you testified at a previous Commission hearing?

A Yes, sir.

Q And your qualifications as a petroleum engineer are a matter of record?

A They are.

Q Does the Fort Worth Office in which you are located have control and supervision over the Pan American operations in the area of the Fowler Ellenburger Oil Pool?

A Yes, sir, it does.

Q All right, in connection with this case, I wish you would look first, Mr. Harpke, at what has been identified as our Exhibit Number One. What is that exhibit?

A Exhibit Number One is a base map of the Fowler Area. On this base map I have shown the unit outlined for the South Mattix Unit by means of the heavy dashed line, which encompasses Section 15 and the productive portion of Section 22.

Q Now Pan American is the operator of the South Mattix Unit?

A That is correct.

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Q The other working interest owners are shown in the little box on the exhibit?

A That is correct.

Q All right, sir, what else have you shown on this exhibit?

A I have shown the proposed location for our South Mattix Unit Well Number 21. Precisely this is located at 1,873 feet from the south line and 2,087 feet from the west line of Section 15, Township 24 South, Range 37 East.

Q And you have shown that location that you have just cited for the record by a red dot?

A That's correct.

Q What is the significance of the area that is around that well that is outlined with red tape?

A This the 80 acre proration unit which we hope to dedicate to well number 21.

Q All right, sir, the other wells that are reflected on here with conventional well symbols, what do they represent?

A This is a multipay area. The wells which are shown by the conventional well symbols on Exhibit Number One reflect only Ellenburger completions. The South Mattix Unit is also productive in the Blinbry. The upper and lower Mattix formations and the tubb formations, while there is some devonian production, fusimon production outside of the unit.

Q All right, sir, it might be helpful for the Examiner

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and certainly for the record, if we briefly discuss the Fowler Ellenburger oil reservoir. In that connection, I wish you would look now as to what has been identified as our Exhibit Two. Mr. Harpke, what is that exhibit?

A Exhibit Number Two is a reservoir performance curve for the Fowler Ellenburger Pool.

Q Do you want to comment on any of those curves? What curves do you have reflected on that exhibit?

A Exhibit Number Two contains the bottom hole pressure history, gas oil ratio, accumulative oil production, daily oil producing rate, and the number of producing wells for the pool.

I might point out that the reservoir pressure here has declined from an initial pressure of 4,330 pounds to a current pressure of approximately 1,823 pounds, after the accumulative production of approximately 10,000,000 barrels of oil.

Q According to your curve there, how many producing wells do we have in this pool?

A There are currently fourteen producing wells.

Q What, in your opinion, Mr. Harpke, based on the study that you have made of this reservoir, is the predominate producing mechanism?

A I believe the predominate producing mechanism is a

solution gas drive. We have determined an original water oil contact in this reservoir which is typical of the Ellenburger, however I don't think water influx accounts for any appreciable energy.

Q All right, sir, do you recall when pool rules were adopted by the Commission for this pool?

A Yes, sir, permanent pool rules were adopted in October 1954, by the Commission Order 195B.

Q What did that order provide with regard to unit and well spacing?

A This order provided for eighty acre well spacing with wells to be located in the center of the Northwest Quarter or Southeast Quarter of each governmental quarter section.

Q Well, why is our well number twenty-one an unorthodox location?

A Our proposed South Mattix Unit Well Number Twenty-one would be located in the Northeast Quarter of the Southwest Quarter.

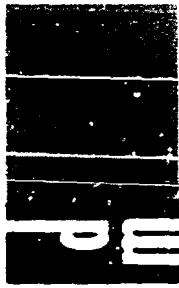
Q So it is just in the wrong quarter quarter section?

A Yes.

Q But it is now, if my eyesight is right, in the center of the quarter quarter?

A That is correct.

Q Do you know whether or not Mr. Harpke, in the past



the Commission has granted unorthodox spacing exceptions for other wells in this pool?

A Yes, sir, there have been a total of five unorthodox well locations approved and drilled.

Q Would you as briefly as possible, name the wells and their locations for which the Commission has granted spacing as such.

A Yes, sir. Commencing in the southeastern portion of the reservoir in Section Twenty-three, Gulf's Lily Number Three was an unorthodox location. This is located in the Southwest Quarter of the Northwest Quarter of Section Twenty-three.

Pan American South Mattix Unit Well Number Fifteen is unorthodox. This is located in the Northeast of the Northeast of Section Fifteen.

Q Pardon me, you said Section Fifteen. You meant Section Twenty-two didn't you?

A Yes, Section Twenty-two.

Q All right, sir.

A Humble's Knight Number Twenty-two located in the Southwest Quarter of the Southwest Quarter of Section Fourteen is also unorthodox.

Then Pan American's South Mattix Unit Number Seventeen located in the Southwest Quarter of the Northeast Quarter of Section Fifteen and the fifth unorthodox location is Humble's

State AB Well Number Two located in the Southeast quarter of the Northeast Quarter of Section Sixteen.

Q Mr. Harpke, I was following as you related these wells for the record. I was following them on our Exhibit One and it appears to me that with regard to some of these wells that in addition to being in the wrong quarter quarter section, they were also crowding the lease lines, is that observation correct?

A That's correct, sir. Three of these wells are in that category.

Q And is my observation correct that the Humble State AB Number Two is actually on the same quarter quarter section with well number one?

A Yes, sir.

Q All right, sir, based on your knowledge of these past exceptions that have been granted by the Commission, which one would you say was the most analogous to our request here?

A Our request for the South Mattix Unit Well Number Twenty-one is very similar to that which we made for our South Mattix Unit Well Number Seventeen.

Q Actually our request is for the second well on the eighty acre proration unit.

A Yes, sir.

Q And that was the case with well number seventeen, being

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the second well on the proration unit with well number nine?

A That's correct.

Q I noticed both of those wells, well nine and well two, in Section Fifteen are shown as abandoned in the Ellenburger, is that correct?

A Yes, sir.

Q It might be helpful, Mr. Harpke, if at this time, if you would relate some of the history of our S.M.U. Well Number Two.

A Well, our South Mattix Unit Well Number Two was completed in April of 1950 as a strong flowing completion. The initial potential test was 564 barrels per day flowing with no water. The Ellenburger formation was abandoned in August of 1965 at which time the well had recovered approximately 887,000 barrels of oil from the Ellenburger.

Q Was well number two still capable of producing Ellenburger oil when it was abandoned?

A Yes, sir, it was.

Q What happened to well number two, Mr. Harpke, that caused us to consider abandoning it?

A Well number two had had quite a history of very successful work over treatments performed on it. These were performed almost annually commencing in 1957. Finally in early 1965, March of 1965, we established communication behind the

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cement which caused excessive water production from the well.

Q All right, sir, what did Pan American decide to do then?

A Well, at the same time we were developing the Blinebry formation in this area and the decision was made to recomplete the well to the Blinebry formation since it appeared from available logs that we had a good Blinebry prospect.

Q Did we make a good Blinebry oil producer in the S.M.U. Number Two?

A Yes, sir, this well was completed as a top allowable well and it is still a top allowable.

Q It is still a top allowable well?

A Yes, sir.

Q Let me ask you this in view of Pan American abandoning S.M.U. Number Two. In your opinion, do you feel the entire eighty acre proration unit as delineated on Exhibit One is still productive of oil from the Ellenburger reservoir?

A Yes, sir, I do.

Q All right. While we are speaking of productive acreage of this particular area of the field, I wish you would look now at what has been identified as our Exhibit Number Three. What is that exhibit?

A Exhibit Number Three is actually composed of four parts. The first part is an excerpt of the base map which we

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have shown in Exhibit One. Here again, we have shown the proposed location for the South Mattix Unit Well Number Twenty-one with a red dot and we have shown the proposed eighty acres which we wish to dedicate to this well by the red outline.

Q All right, sir, now what are the -- you said four parts, what are the other three parts?

A The remaining three parts to Exhibit Number Three are various structural contour interpretations drawn on the top of the Ellenburger formation. These are various interpretations that have been presented at previous hearings before this Commission by all three of the operators in the pool.

Q Who are the two operators besides Pan American?

A Besides Pan American, there is Gulf and Humble.

Q All right, sir, now you say these overlays are taken from an exhibit presented by Pan American, Gulf and Humble at previous hearings, is that correct?

A Yes, sir, that's correct.

Q Has there been any drilling in this area that might cause a change in any of these interpretations?

A The only well in this portion of the reservoir which has been drilled since these contour interpretations have been presented to the Commission which would change these, is the Humble State AB Well Number Two which is located up in the Southeast Quarter of the Northeast Quarter of Section Sixteen.



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Q All right, sir, I want you to discuss each one of these overlays and I would like you also to comment on how the data from the Humble State AB Well Number Two compares with the predictions from these exhibits or how it would change it. What is your first structural overlay?

A This first overlay which is contoured in black is Pan American Petroleum Corporation's interpretation of the top of the Ellenburger formation. This was presented to the Commission as Exhibit Number One on September 25th, 1963.

The drilling of Humble's State AB Well Number Two tended to substantiate that this interpretation was correct. The Humble State AB Number Two Well encountered the top of the Ellenburger at minus 7,000 feet which is almost precisely where this contour interpretation would indicate where you would expect to find the Ellenburger.

Q All right, sir, what does this interpretation show with respect to the productivity of the eighty acre proration unit we wish to assign to well number twenty-one?

A It shows that the entire eighty acres is productive.

Q All right, sir, let's look at the second overlay. Whose is this?

A The second overlay which has the Ellenburger contours drawn in red is Gulf Oil Corporation's interpretation of the top of the Ellenburger. This was presented by Gulf as Exhibit Number



Two to the Commission on May 10th, 1962. This interpretation follows very closely to Pan American in this portion of the reservoir.

Q Does it show that the entire eighty acre proration unit is productive?

A Yes, sir.

Q How did the data obtained from Humble State AB Number Two follow this interpretation?

A Much the same as on the Pan American interpretation. This interpretation very closely predicted where the Ellenburger would be encountered in that well.

Q All right, sir, let's go to the third overlay. That's bound to be Humble since there are only three operators in the pool, is that correct?

A Yes, sir. Humble's interpretation has the Ellenburger's contours colored green. This was presented as Exhibit Number -- I should say this interpretation was presented as Exhibit Number One to the Commission on May 7th, 1964.

Q What does it show with respect to the Ellenburger productivity of the eighty acre proration unit that we want to dedicate to S.M.U. Number Twenty-one?

A This interpretation also shows that the entire eighty acres is productive.

Q In that area of the Ellenburger reservoir, this

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interpretation is a little different from the previous Gulf and Pan American, is it not?

A Yes, sir. This interpretation has got a fault which is running -- shown to run between Humble's State AB Number One Well and Well Number Two. The drilling of the number two well shows that this fault did not exist. Actually the top of the Ellenburger was encountered approximately a hundred feet lower than what this contour interpretation would suggest.

Q All right, sir, now the Humble interpretation, they did not show such a large displacement of this fault that we've found did not exist, such that you couldn't just contour out that fault?

A That's correct. You would omit this fault and contour it.

Q When you did that, in this area of the field, the Humble interpretation would look similar to the Gulf and Pan American interpretation?

A Yes, sir.

Q Regardless of ault or no fault, the Humble interpretation does show the entire eighty acres to be productive?

A Yes, sir.

Q You mentioned when you were discussing the history of the S.M.U. Number Two, when communication behind the cement was established after this last work over, it was impossible to

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exclude the water from the well, is my memory correct on that?

A Yes, sir.

Q Do you feel that since well number two was making water, that the water has encroached and filled up the entire Ellenburger section in the area of our S.M.U. Number Two?

A No, sir. I do not feel that the entire Ellenburger section has been watered out at this location.

Q To what do you attribute the water that well number two was making at the time it was abandoned?

A Well, we have evidence that there are highly porous vugular porosity and highly permeable streaks scattered throughout the entire Ellenburger section in this portion of the field. What I think happened here is that this location was differentially watered out by water which fingered or encroached through these permeable intervals leaving certain tighter portions of the reservoir which have certainly not been flooded out.

Q So you think in the area of number two, there is Ellenburger reservoir rock that is saturated with oil and not water?

A Yes, sir.

Q Let me ask you this. Do you feel that it would be possible to complete a commercial well either by drilling a twin well to well number two or setting a whip stock in well

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number two and deviating a way from our mechanical trouble in the present completion?

A I believe that a commercial well could be obtained, yes.

Q Would you recommend that to either Pan American or the Commission as a prudent practice to follow?

A I would not, no, I would not. I would not recommend drilling on the quarter section that well number two is located on since I feel that by drilling on the alternate quarter section in the proposed location, we will obtain a greater element of recovery from that eighty acre proration unit than we would if we re-entered or sidetracked this well.

Q Do you think that sidetracking well number two could possibly damage the top allowable Blinebry oil completion in well number two?

A There is a chance of that, yes.

Q Do you feel that the location of well number twenty-one is a good location to recover the recoverable hydrocarbons from the Ellenburger under this eighty acre proration unit?

A Yes, sir.

Q Do you see how the approval of this application in any way can violate or harm the correlative rights of any of the other owners of interest in this pool?

A No, sir, rather I think that it is necessary to protect



the correlative rights of the South Mattix Unit.

Q Do you feel that the approval of the location for S.M.U. Twenty-one as we have shown on our exhibits will serve conservation?

A Yes, sir.

Q Do you have anything that you care to add at this time Mr. Harpke?

A No, sir, that concludes my testimony.

MR. BUELL: Mr. Examiner, I believe that's all we have at this time by way of direct testimony. I would like to formally offer Pan American Exhibits One through Three inclusive.

MR. UTZ: Without objections, Exhibits One through Three will be entered into the record of this case.

Mr. Harpke, you stated that you thought by drilling this twenty-one well that you would protect the correlative rights of the owners in the S.M.U. Unit. What wells do you think will drain oil from this unit?

A Well, I think right now in particular, Gulf Lily Number One and Number Three, both of which are located in the Northwest Quarter of Section Twenty-three are certainly draining oil from the unit.

MR. UTZ: Did you state whether this was a water drive?

A No, sir, I stated that I felt that the predominate drive mechanism was a solution of gas. Other than this uneven

water encroachment problem, which I have attributed to the performance of our South Mattix Unit Number Two, there is no real indication of any pressure maintenance through water influx.

MR. UTZ: Are there any more wells you think would drain oil from the unit?

A I believe that the two wells that I described, the two Gulf wells are the ones which I would say that are really the wells that are draining oil from the unit. The other wells have got low producing rates, varying from twenty-eight to forty-eight barrels a day. The other wells, which are offsetting the unit boundary --

MR. UTZ: Now you're speaking of the number two Humble well in Section Fourteen and their AB Number Two in Section Sixteen?

A No, sir. I am speaking of the number one Humble well in Section Sixteen. The number two well has been abandoned. This well is presently carrying an allowable of thirty-three barrels a day, which is a relatively low producing rate.

The Gulf's Carr Number Five, located in Section Ten immediately north of the South Mattix Unit is carrying an allowable of twenty-eight barrels a day and the Humble J. B. Knight, located in Section Fourteen and carrying an allowable of forty-eight barrels a day. I don't think that these -- I think that these low producing rates are probably not causing any undue

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drainage from the unit, however, the two Gulf Lily Wells, well number one has got an allowable of 205 barrels and well number three is top allowable at 215 barrels. Both of these wells are offsetting South Mattix Unit Wells which have allowables of approximately one half of their Gulf wells allowables. Our well number fifteen has an allowable of 119 and our well number five has an allowable of 102. I, therefore, think that there is a -- probably a migration across this unit boundary.

MR. BUELL: Those two Gulf wells are just 330 off of the unit line, Mr. Harpke?

A Yes, sir, that's correct.

MR. BUELL: But they are both unorthodox, Mr. Examiner, only one has an exception in that the Lily Number One was drilled prior to the adoption of pool rules.

MR. UTZ: So by drilling the number twenty-one you feel you will get your eighty acre allowable as due?

A Yes, sir.

MR. UTZ: I believe you did state the well was in the center of the Northeast of the Southwest, actually it is not quite in the center, if that is an even section. Isn't there about eighty-seven feet off one way and seven feet off the other way? What is it, a 150 feet?

A Yes, by that, I meant it was in the center.

MR. UTZ: Is well number six receiving an eighty acre



allowable?

A Yes, sir.

MR. UTZ: Are there questions of the witness?

The witness may be excused.

(Witness excused.)

Are there other statements in this case.

MR. BUELL: Mr. Examiner, that's all we have. I might point out for the record that it is the current practice of the Commission on adopting eighty acre oil pool rules to specifically provide in the rules that the rules should not be construed to prohibit drilling of the second well on the eighty acre proration unit. The Fowler Ellenburger oil pool rules were the first eighty acre oil pool rules adopted by the Commission. As the record shows, they were adopted back in 1954. They do not have this provision that the Commission is currently putting in all of their rules. Really our request here today is simply to do what the Commission is providing by their current and modern rules for an operator to do. We want to drill the second well on this eighty acre proration unit.

MR. UTZ: I think probably the Commission should clarify that rule a little bit. I think the intent of the rule is to have two producing wells on eighty acre tract rather than to have the opportunity to drill a second well.

Are there other statements?



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This case will be taken under advisement.

