BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
April 25, 1974

EXAMINER HEARING

IN THE MATTER OF:

Application of Midwest Oil Corporation for pool creation, discovery allowable and special pool rules, Eddy County, New Mexico

CASE NO. 5219

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the New Mexico Oil Conservation Commission: William Carr, Esq.
Legal Counsel for the Commission
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Santa Fe, New Mexico

For the Applicant: Paul Eaton, Esq.
HINKLE, BONDURANT, COX and EATON
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I N D E X

E X H I B I T S

	Marked	Offered & Admitted
Applicant's Exhibits Nos. 1 through 7	21	21

MR. NUTTER: Case 5219.

MR. CARR: Case 5219. Application of Midwest Oil Corporation for pool creation, discovery allowable, and special pool rules, Eddy County, New Mexico.

MR. EATON: Paul Eaton of the firm of Hinkle, Bondurant, Cox and Eaton, representing the Applicant, Midwest Oil Corporation.

MR. CARR: How many witnesses do you have, Mr. Eaton?

MR. EATON: We have two witnesses.

FRANK L. SCHATZ

called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. EATON:

Q Would you state your name, your residence and by whom you are employed?

A My name is Frank L. Schatz. I reside in Midland, Texas and am employed by Midwest Oil Corporation, in that City.

Q In what capacity are you employed by Midwest?

A I am the District Exploration Manager for Midwest.

Q What is your profession?

A I am a geologist by trade.

Q Have you previously testified in that capacity before this Commission?

A I have.

Q Mr. Schatz, what does Midwest seek by its Application in this case?

A Midwest seeks a discovery allowable for its No. 4 South Empire Deep Unit Well which was completed in the Wolfcamp. It seeks 80-acre spacing and flexible field rules, flexible spacing.

Q Would you refer to what has been marked for identification as Exhibit No. 1 and state what that exhibit portrays?

A Exhibit No. 1 is a production index map. The well in question is located in Section 32 and there is an arrow pointing to the well. The production is shown or is color-coded and that code is in the lower righthand corner of the map. There is no other Wolfcamp production within two miles of the subject well. I will call your attention to our Well No. 3 which is located in Section 31 and also shown as a Wolfcamp well, however, a later exhibit will show that this is from a different zone in Wolfcamp

and that well was also only tested. It was never completed as an oil well, and after three months, it depleted while it was being tested. It made something like 3000 barrels.

Q Do you have anything else to testify to with respect to this exhibit?

A No, I don't.

Q The area outlined in yellow, what does that mean?

A The area outlined in yellow is the South Empire Deep Unit. This is the unit outline where Midwest is the operator.

Q Now, would you refer to what has been marked for identification as Exhibit No. 2 and state what that exhibit portrays?

A Exhibit No. 2 is a subsurface structure map contoured on the basis of the Wolfcamp. This is as close as we could get to a correlative marker across the area. The subsurface structure points are indicated as minus values on the map and the contours are shown in the dark blue. This shows essentially no interruption in the dip to the southeast across the unit. Superimposed upon this subsurface structure map is a porosity isopach of the productive zone in the Wolfcamp. This is a difficult

map to draw because, as you will note, there is only one well on the map which had any porosity in the productive zone in our No. 4 well. That well had 31 feet of net porosity. None of the wells to the north or to the south as shown on this map had any of the same porosity. We have interpreted this as an east-west trending porosity zone, and we expect it to go out approximately a mile to the north and a mile to the south. We do not know the extent of it because it is a one-point isopack. Again, the unit outline is shown in yellow.

Q Mr. Schatz, does Midwest anticipate drilling additional wells in the area which would tend to give more information with respect to the Wolfcamp there?

A Our plan of development for 1974 is filed with the State and U.S.G.S. and calls for one additional Morrow test in 1974, and we anticipate that location to be in the southwest of the northeast of Section 31, 17 South, 29 East, and that location is shown on the map as an open circle. That well should help us to determine the western extent of the porosity in this Wolfcamp Zone.

Q Now will you refer to what has been marked as Exhibit No. 3 and state what that exhibit portrays?

A Exhibit No. 3 is a stratigraphic cross section of A, A-Prime which extends in a southwest to northeast direction with the index of the location of the cross section shown on the small map at the lower lefthand corner of the cross section.

Q Is "A" at the south?

A "A" is at the southwest end. A-Prime is the northeast end. This line of cross section is also shown on Exhibit 2.

Q Then the well in the Wolfcamp discovery is the fourth well from the left?

A The Wolfcamp discovery is the fourth well from the left and the productive zone is shown as being colored in blue. This is a stratigraphic section set-up on approximately or close to the top of the Cisco formation of the Pennsylvanian. We do not see porosity developed either to the southwest or to the northeast as depicted on this cross section.

Earlier, I discussed -- in discussing Exhibit No. 1 -- that our No. 3, South Empire Deep Unit Well had produced briefly from the Wolfcamp. That productive interval is shown on Well No. 3 from the left with perforations at 8601 to 04.

MR. NUTTER: That would be considerably below this pay in the --

THE WITNESS: (Interrupting) Yes, it is at least 75 to 100 feet below the pay as we correlate that into the No. 4. We did perforate the zone in the No. 4 Well and those perforations are shown on the center of the log with little dots, little open circles. That zone swabbed salt water with no show. This cross section is a little misleading from the standpoint that it is a stratigraphic section and that the zone that we are talking about in the No. 4 Well which produced briefly in the No. 3 Well is actually about 100 feet low structurally to the -- No. 4 Well is 100 feet low to the No. 3 Well. It doesn't look like it here.

BY MR. EATON:

Q Do you have anything that you would like to say with respect to this exhibit?

A No.

Q All right. Would you refer to what has been identified, or marked for identification as Exhibit No. 4 and state what the exhibit portrays?

A Exhibit No. 4 is a Schlumberger Compensated Neutron Formation Density Log. On this log we have shown

drill stem tests that were conducted in the well, the tops, as we have interpreted them, and on the detailed section on the lower part of the log, we have the information pertaining to the drill stem tests written out in more detail. The interval that we are producing from was tested by DST No. 2 which we did not have it open long enough, but it did unload oil when we closed the toolway.

Q Now, Mr. Schatz, would you refer to what has been marked as Exhibit No. 5?

A Exhibit No. 5 is the well completion data sheet on which we have shown pertinent information relative to this well. The Items 11 through Item 15 were supplied to me to be placed on this exhibit by Mr. Printz, our second witness.

Q Were these exhibits prepared by you or under your supervision?

A They were prepared both by me and under my supervision.

MR. EATON: We have no further questions of this witness.

MR. NUTTER: What is your other witness going to testify to?

MR. EATON: Primarily to engineering aspects.

MR. NUTTER: Okay. Are there any questions of Mr. Schatz? You may be excused.

(Witness dismissed.)

EUGENE V. PRINTZ

called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. EATON:

Q Would you state your name, residence and for whom you work?

A Eugene V. Printz. I work for Midwest Oil Corporation in Midland, Texas.

Q In what capacity do you work for Midwest, Mr. Printz?

A As a petroleum engineer.

Q Have you previously testified before this Commission?

A No, sir.

Q Would you please give us your educational background?

A I attended the Colorado School of Mines from 1966 to 1970, graduating with a Bachelor of Science degree

in Petroleum Engineering.

Q Since 1970, or since your graduation, what have you done, Mr. Printz?

A I worked two years for City Service Oil Company in Odessa, Texas.

Q What were your duties and responsibilities for City Service?

A I was employed as a production engineer and in charge of an area surrounding Odessa. I was responsible for maintaining production, making work-over studies, remedial recommendations, drilling and completing wells.

Q After your work with City Service, what did you do?

A I worked 8 months for Flag Redfern Oil Company in Midland, Texas.

Q What were your responsibilities with Flag Redfern?

A I was petroleum engineer in charge of studying approximately 177 wells, maintaining production, writing work-over recommendations and drilling and completing wells.

Q Since that time, what have you been doing?

A I have worked for Midwest Oil Corporation in Midland, Texas, as a petroleum engineer.

Q In your work and experience since leaving

school, have you worked in southeastern New Mexico?

A Yes, sir. Most of my experience is drilling and completing wells in the Morrow formation.

MR. EATON: Do you have any further questions, Mr. Nutter?

MR. NUTTER: No. The witness is qualified. Please proceed.

BY MR. EATON:

Q Mr. Printz, you are familiar with the Midwest No. 4 South Empire Deep Unit Well?

A Yes, sir.

Q What tests were run on that well?

A I have here the report prepared by Dr.Brownscombe from data supplied by Midwest Oil Corporation as to pressure tests run on the South Empire Deep Unit No. 4 Well.

Q This is the report that has been marked as Exhibit No. 6, is that correct?

A Yes, sir.

Q Please proceed.

A The well was completed. It was perforated, acidized and flowed for a period of time. We produced approximately 5000 barrels of oil and it was shut in for pressure build-up test. Then after the pressure build-up

test, we opened the well for a pressure draw-down test. We flowed it for 24 hours and shut the well in for a second pressure build-up test which ran approximately 24 hours. This is the report of the study of those tests, pressure tests. Pressure Build-up Test No. 1 and the Pressure Follow-up Test suggested a barrier of approximately 400 to 600 feet from the well. The second pressure build-up test showed no barrier. It was cut off too short and the data did not reach the barrier. The Pressure Follow-up Test was calculated and indicated approximately 1.7 million barrels of oil in place in an area of approximately 250 acres. Initial reservoir pressure was 3720 pounds at 84 and 85 feet. The first pressure build-up test indicated the well was opened at the well bore showing no skin effect or damage around the well bore; however, the pressure follow-up test and the second build-up test did indicate there was some damage during the pressure follow-up test which we feel is due to solution gas fracking out around the well bore and creating some permeability damage. We don't think this is permanent, however, but it indicates that at high flow rate there would be some slight damage.

Q Now, Midwest is seeking or the Application is seeking 80-acre spacing and it is allowable, is that correct?

A Yes, sir.

Q Why does it feel that that is the proper spacing and allowable?

A We feel that the well will drain 80-acre spacing based on the pressure follow-up test and investigating production under 250 acres. We also feel that flowing the well at high rates, at rates greater than the allowable 80-acre spacing would be detrimental to the well.

Q Is it your understanding, Mr. Printz, that there will be further development in the area by your Company?

A Yes, sir.

Q Will that additional development help define this pool?

A Yes, sir. The 250 acres we estimate is a minimum based on this one test. Further development of the area should develop additional acres and certainly prove out the surrounding acreage.

Q Have you prepared an exhibit depicting the

economics of drilling, completing and operating a Wolfcamp well?

A Yes, sir. This is Exhibit 7.

Q That has been marked as Exhibit 7, you say?

A Yes, sir.

Q Will you please state what that exhibit reflects?

A This exhibit shows the economics of drilling, completing and operating cost for the South Empire Deep Unit. Item No. 1 is drilling and completion costs $295,000 per well. This is based on actual invoices taken from our files. Oil price, $11.10 a barrel. Gas price, 22¢ per MCF for low pressure gas. A GOR of 1820 cubic feet per barrel based on our testing. Taxes are 6.5 percent including school tax, severance tax, ad valorem tax, etc. Revenue interest of 87.5 percent to the working interest owner. This is a minimum because there are several tracts of Federal Government which have variable royalty interests.

Q Minimum or maximum?

A They go up with increased production.

Q Actually it would be the maximum rather than --

A (Interrupting) Yes, that's right. This is incorrect on this exhibit. The operating cost per barrel

is estimated at 5¢ per barrel. This is based on a flowing well, based on approximately 500 barrels per month per well. If the well flows 10,000 barrels per month, revenue per barrel would be $9.38 based on these above factors. Barrels of oil to pay out, 31,450 barrels, based on the cost and the cost of the well. Profit to investment in that ratio is: Revenue per barrel, tons of reserve, tons of risk. The reserves, not shown here, are based on the pressure follow-up test and we estimated that at 138,000 barrels per 80 acres. The risk factor was assumed at 75 percent. Using these factors, the profit-to-investment ratio is 3.9 for 80 acres and 1.64 for 40 acres.

Q Mr. Printz, did you testify that in your opinion this No. 4 Well will effectively and efficiently drain 80 acres in your opinion?

A Yes, sir, based on the pressure follow-up test.

Q In your opinion, will establishment of 80-acre spacing on a temporary basis avoid the drilling of unnecessary wells?

A Yes, sir.

Q Will such spacing, in your opinion prevent waste and protect the correlative rights of other owners in the pool?

A Yes, sir.

Q Was Exhibit 7 prepared by you or under your supervision?

A It was prepared by me.

Q I believe you testified that Exhibit 6 was prepared for Midwest Oil Corporation by Mr. Brownscombe?

A Right, under my supervision.

Q Under your supervision?

A Yes, sir.

MR. EATON: I have no further questions.

MR. NUTTER: Mr. Printz, in your Exhibit No. 7 here where you arrive at revenue per barrel, you are including the value in case you hit gas in that revenue?

THE WITNESS: Yes, sir, based on this gas-oil ratio.

MR. NUTTER: Right. Now, the $295,000 for the cost of the well, was that the cost of the Wolfcamp well?

THE WITNESS: Yes, sir.

MR. NUTTER: That well itself went down to the Morrow, didn't it?

THE WITNESS: This well went to the Morrow. We took the costs and tried to correlate them back to an 8800-foot well.

MR. NUTTER: I see. That is what that proportionate cost would be?

THE WITNESS: That seems very high, however, this is crooked hole country and the drilling contractor said the cost to drill it by a footage basis would be unreal, so he recommended we take it on days worked, and he was right.

MR. NUTTER: On the well completion data sheet, Exhibit No. 5, the IP of the well is given as 303 barrels.

THE WITNESS: Yes, sir.

MR. NUTTER: Is that what the well will make or will it make more than that or less?

THE WITNESS: That is a minimum number. It will make --

MR. NUTTER: (Interrupting) It will make more?

THE WITNESS: It will make more than that.

MR. NUTTER: Now, the 80-acre allowable for a well in the 9000-foot range is 310 barrels per day. Now, you stated that if you flow the well at high rates, you have gas breaking out and affecting the permeability of the reservoir to the oil?

THE WITNESS: Yes, sir.

MR. NUTTER: And that more than an 80-acre

allowable would probably be an excessive rate of production, and yet you have asked for discovery allowable here also. The discovery allowable would have to be tacked on to the top side of a 310 barrel 80-acre allowable and that would be excessive then, wouldn't it?

THE WITNESS: Yes, sir.

MR. NUTTER: According to your testimony?

THE WITNESS: Yes, sir. However, the damage that we noted was calculated from a 685 barrel per day flow rate. There should be some number between this 387 barrel that we flowed on clean-up -- someplace between 387 barrels and this 685 barrels a day.

MR. NUTTER: Wouldn't you say that you would have damage or affect the permeability if you flowed at more than an 80-acre allowable? I understood you to say that.

THE WITNESS: I am sorry. It would have damage if we flowed it at an excessive rate. The specific rate would have to be determined someplace between 387 barrels and 685 barrels.

MR. NUTTER: So now you are saying that production in excess of an 80-acre allowable wouldn't necessarily be harmful to the well?

THE WITNESS: Yes, sir, but a limited excess.

MR. NUTTER: I don't have a calculator or slide rule with me, but you are asking for 42,000 barrels of oil discovery allowable which produced over a two-year period which would be 42,000 divided by 730 days and it would probably be around 60 barrels a day or somewhere in that vicinity.

THE WITNESS: We flowed the well on clean-up at 387 barrels per day.

MR. NUTTER: Okay. Divide 42,245 by 730.

THE WITNESS: 58.

MR. NUTTER: 58 barrels per day would be the discovery allowable on top of a 310 barrel regular allowable which gives the well a total allowable of 368 barrels per day?

THE WITNESS: Yes, sir.

MR. NUTTER: In your opinion, the well could sustain a 368-barrel per day producing rate without damage to the well or the reservoir?

THE WITNESS: Yes, sir. This damage that we calculated we feel is due to solution gas and wouldn't necessarily be permanent.

MR. NUTTER: Well, it would be breaking out

around the well bore and affecting the relative permeability to the oil?

THE WITNESS: Right.

MR. NUTTER: Are there any other questions of Mr. Printz? You may be excused.

(Witness dismissed.)

MR. NUTTER: Do you have anything further, Mr. Eaton?

MR. EATON: We offer Exhibits 1 through 7 into evidence.

MR. NUTTER: Midwest's Exhibits 1 through 7 will be admitted in evidence.

(Whereupon, Applicant's Exhibits Nos. 1 through 7 were marked for identification and admitted into evidence.)

MR. NUTTER: Does anyone have anything they wish to offer in Case No. 5219?

MR. CARR: Mr. Examiner, we have certain correspondence concerning this case. We received a letter from General American Oil Company of Texas. General American is the owner of 6.105 percent working interest in the South Empire Deep Unit and owner and operator of certain acreage offsetting the South Empire Deep Unit

No. 4 and they have requested the following be read into the record:

(Reading) General American Oil Company of Texas supports Midwest Oil Company's request for 80-acre spacing rules for the new Wolfcamp Field discovered in the South Empire Deep Unit No. 4 Well. General American Oil Company of Texas, however,respectfully requests that the New Mexico Oil Conservation Commission grant these rules on a temporary basis pending additional information on this reservoir to be obtained by future drilling and producing operations. (End of reading.)

We have received a telegram from a Mr. D. D. Myers, Assistant Production Manager of Tenneco Oil Company which reads in part as follows:

(Reading) Tenneco is one-half working interest owner of the acreage in the north half of Section 33, Township 17 South, Range 29 East. We support the Application for discovery allowable, however, we oppose the special rules that provide for 80-acre spacing. We believe that the economics associated with recoverable reserves from only 80 acres could be marginal. In addition, an existing pressure draw-down and build-up test conducted on the entire South Empire Deep Unit No. 4

indicates that this well could drain an area as large as 160 acres. In view of these facts, Tenneco requests that the temporary field rule that provides for 160-acre spacing be adopted. (End of reading.)

MR. NUTTER: That is outside the scope of the hearing. He can't do that. Thank you, Mr. Carr.

Does anyone else have anything they wish to offer in Case 5219?

We will take the case under advisement.

STATE OF NEW MEXICO)
) SS.
COUNTY OF SANTA FE)

I, RICHARD L. NYE, Court Reporter, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me, and the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

COURT REPORTER

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 5219 heard by me on 4/25, 1974.

Examiner
New Mexico Oil Conservation Commission

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