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2632

Section, Transcript,

Exhibits, Etc.

DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325-1182

ALBUQUERQUE, N. M.
PHONE 243-6691

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
September 11, 1962

EXAMINER HEARING

IN THE MATTER OF:)

)
Application of Humble Oil & Refining)
Company for an order establishing)
special rules and regulations for the)
Four Lakes-Pennsylvanian Pool, Lea)
County, New Mexico. Applicant, in the)
above-styled cause, seeks an order)
establishing special rules and regula-)
tions for the Four Lakes-Pennsylvanian)
Pool, Lea County, New Mexico, to include)
provisions for 80-acre oil proration)
units therein.)

Case 2632

BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

MR. UTZ: Case 2632.

MR. DURRETT: Application of Humble Oil & Refining
Company for an order establishing special rules and regulations
for the Four Lakes-Pennsylvanian Pool, Lea County, New Mexico.

MR. BRATTON: Howard Bratton, appearing on behalf of
the applicant. We have one witness, Mr. Sharp.

MR. UTZ: Are there other appearances in this case?
You may swear the witness.



(Witness sworn.)

(Whereupon, Applicant's Exhibits 1 through 8 were marked for identification.)

CARL SHARP

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

DIRECT EXAMINATION

BY MR. BRATTON:

Q Mr. Sharp, have you ever appeared before this Commission?

A No, sir.

Q Will you state your name, occupation and very briefly your professional and educational background?

A Carl Sharp. I received a Bachelor's degree from the University of Texas in petroleum engineering, and since graduation I have been working for the Humble Oil & Refining Company in the capacity of an engineer. About the last eight years I have been specializing in reservoir work. At the present time I'm in the Midland area office as a supervising engineer in charge of the reservoir analysis section.

Q Are you familiar with the Four Lakes-Pennsylvanian Pool?

A Yes, sir.

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Q And were the matters contained in the application under consideration?

A Yes, sir.

MR. BRATTON: Are the witness's qualifications acceptable?

MR. UTZ: Acceptable.

Q (By Mr. Bratton) What is Humble seeking in the application in this case?

A In this case we're asking for pool rules which will provide for 80-acre spacing.

Q That's in the Four Lakes-Pennsylvanian Pool in Lea County, New Mexico?

A That's right.

Q Will you turn to your Exhibit No. 1, Mr. Sharp, and explain what that is?

A Exhibit No. 1 is a structure map on the top of the Cisco in the Four Lakes-Pennsylvanian Field. As you see, it's almost a text book anticlinal structure. We have six wells producing from the Cisco, which is a dolomitic lime, porosity of about 10%, permeability of about 55 millidarcies. The connate water is estimated at 30%.

Q This is a unitized area?

A Yes, sir.



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Q The unit outlines are shown on the exhibit?

A Yes, sir.

Q The six wells that are completed in the Pennsylvanian are wells numbers 1, 3, 4, 5, 6 and 7, is that correct?

A Yes, sir.

Q Well, No. 2 is Devonian?

A It's a Devonian well.

Q Is there anything else you care to say with regard to the structure of this?

A No, the map shows all the wells in the field. The two wells down to the southwest, a Triçe well and another one on Southern Petroleum Exploration Company lease in Section 3, both shown as dry holes, penetrated the Pennsylvanian or penetrated the producing section, but they were below an oil and water contact and non-productive.

Q Continuing with the geology of the area, with reference to your Exhibits Nos. 2 and 3 which are cross sections through the area, and explain those.

A Well, looking at Exhibit 2 as a north-south cross section, the top line on the top correlation line shows the top of the Pennsylvanian, the second line is the line on top of the Cisco on top of the first porosity. This is the correlation point that the structure map is drawn on, the production to date



has been limited to the Cisco part of the Pennsylvanian, the lower line is a correlation line on top of the Canyon.

On cross section 1 it shows if you look at well No. 1, South Four Lakes field, it was the initial well into Pennsylvanian completed at 10,227 to 57 in the lower part of the Pennsylvanian. This well was completed in May of 1956. I think the second well is well No. 5, it's shown on the next cross section, Exhibit 3.

Q That was the second well completed in the Pennsylvanian?

A In the Pennsylvanian, yes, sir.

Q All right.

A It was also completed in this same porous interval.

In this well it was at 10,284 to 10,315. This well was completed in July of 1957. These two completions indicated a relatively small reservoir, the pressure declined in them pretty rapidly. However, in 1959 well No. 6 and well No. 4 were worked over and completed in the upper part of the Cisco and the history on these wells showed a much better performance. They were in a better core sample, on the basis of their performance the other wells were drilled and worked over to the Cisco.

Q Do these two exhibits running north and south and east and west, they actually cover all of the wells in the Pennsylvanian, do they not?

A Yes, sir, all the producing wells.

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Q Do they show continuity of the formation throughout the pool?

A Yes, geologically the porous intervals can be traced from well to well. They have good correlation that way.

Q Turning to the engineering aspects of the matter, Mr. Sharp, refer to your Exhibit No. 4, if you would, please. Explain what that is.

A Well, Exhibit 4 was drawn up to show the pressure continuity within the present completion zones in the Pennsylvanian. These are the wells that are in the upper part of it. Those having shown a lot better pressure behavior. Well No. 6 was the initial well being brought in in April of 1959, and as the pressure declined each subsequent well came in at a lower pressure, which is shown on this graph here; the first pressure on each well was fitted in very well with the field average and was lower by an increasing degree with time.

The last pressure point shown over here, cumulative production of about 450,000 barrels was taken in April of 1962. At that time we had a pressure on all six wells, and the maximum variation was only 11 pounds, which I think indicates real good continuity of the pay interval there.

Q That is true, although wells numbers 1 and 3 weren't even completed until there was over 350,000 barrels of cumulative



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production from the pool?

A Yes, sir. Well No. 3 was completed in January of '62, and well No. 1 was worked over from the lower part to the upper part in November, 1961.

Q In April of this year you took pressures on all of the wells and there was no more than ten pounds' difference between any of the six wells?

A Eleven pounds' difference between the six wells.

MR. UTZ: When was that pressure taken, again?

A April of '62. That's our latest pressure survey.

Q What were the ranges of those pressures?

A Well, the lowest pressure was 2907, the highest pressure was 2918.

MR. UTZ: Those are bottom holes?

A Those are bottom hole pressures of a subsea datum of 6050 feet.

MR. UTZ: Is that taken with a bomb?

A Yes, sir.

Q (By Mr. Bratton) Now, Mr. Sharp, have you run any interference tests in this pool?

A Yes, sir, the reservoir continuity is also shown on the next exhibit marked as Exhibit No. 5. An interference test was run, all the wells in the field were shut in at the same time.



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This one shows the pressure build-up in well No. 4. The flowing pressure was 3205 pounds at the end of about 66 hours, 66 to 70 hours shut in time it had reached its maximum pressure of 3278 pounds. After the shut in pressure had stabilized, wells No. 5 and 7 were put back on production. You'll notice well 5 is south-west and 7 is northeast of No. 4.

Q They're actually on 80-acre pattern, are they not?

A Yes, sir.

Q 4, 5 and 7, with 4 being the middle well in the pattern?

A That's correct.

Q What are the results of the interference tests?

A Well No. 4 remaining shut in, there was a drawdown in pressure of about 30 pounds from 3278 to 3248. With the production of, well, it resulted from the production from 5 and 7.

Q That drawdown occurred in approximately four days, about a hundred ten hours?

A Yes, sir.

Q What is the significance of that test in your opinion, Mr. Sharp?

A I think the interference test and the other pressure we have run in the field definitely show that a well will drain more than 80 acres.

Q And geologically there's continuity throughout, so



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there's no reason why a well should not?

A That's right.

Q Turn then to Exhibit No. 6, Mr. Sharp.

A Well, Exhibit No. 6 was drawn up to depict the economics of 80-acre spacing as opposed to 40-acre spacing, and in determining the original oil in place we drew up isopach maps in the conventional manner, and to verify them we also ran some unsteady state volumetric balance calculations to arrive at the original oil in place. In this particular case the unsteady state volumetric balance calculations gave us about 50% more oil in place than we could see volumetrically; in estimating the oil in place we have used it to merely balance the unsteady state because mainly of the difficulties in trying to pick net pay in this type of formation with the contact device we have. So, using the greater amount of oil in place and also this upper zone has evidenced a good water drive, about three-fourths of the withdrawals to date have been replaced by water.

On this basis we estimated a 40% recovery of water drive recovery in the upper zone.

Exhibit No. 5 shows the economics, then, of producing what we would call a typical 80-acre tract. In other words, just an average tract with average oil in place. We've estimated an ultimate recovery from the tract of 199,000 barrels. The



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initial investment to drill a well is \$172,000; as shown in 40-acre spacing, why two wells on one 80-acre tract would be \$344,000.

Q That's drilling and equipping, that is not operation?

A That's correct, that's just the drilling of the well and laying of the line to the tank battery. It doesn't include a pumping unit initially as all the wells are flowing. Based on an average oil price of 30¢ per barrel, taking into account the value of the gas and the liquids being extracted from the gas, deducting the initial investment, we have estimated an ultimate profit of \$328,546 for an 80-acre well, or \$136,421 for two wells on one 80-acre tract or 40-acre spacing.

If we look further down here, the profit to investment ratio on the 40-acre spacing gets down to 0.4. If we had used the volumetric calculations based on the isopach map, 40-acre spacing would have shown a loss under these conditions. With the data we have and with the risk involved that possibly the volumetrics could still be right, it appears that from a business standpoint there's too great a risk involved to drill a well here on 40-acre spacing. By going to 80-acre spacing over the total field approximately a million and a half dollars will be saved which can be spent in exploratory drilling or other searches for oil.

Q On your volumetric calculation, Mr. Sharp, you came up with approximately 120,000 barrels under an 80-acre tract?



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A Yes, sir.

Q You went to your material balance study and that showed approximately 60% higher than your volumetric study did?

A Yes.

Q And it is the material balance that is reflected on the economics here?

A Yes, sir.

Q So this is the most optimistic you could possibly be as to the recovery in the field?

A Yes, sir, I think this is an optimistic look at it.

Q You have used a recovery factor of 40%, is that correct?

A 40%.

Q Because this is a water drive?

A It's water drive.

Q So what is reflected in the economics here is the most optimistic as to recoverable oil there as to the oil in place and as to the recovery factor, is that correct?

A Yes. The original oil in place, we're taking the most optimistic look at it, under the recovery factor it's definitely more optimistic than a solution drive and 40% is normal for a water drive.

Q If you had used the results of your volumetric study you would actually lose money on 40 acres, is that correct?



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A Yes, sir.

Q And, of course, your, instead of a two to one ratio on 80 acres it would be considerably less than that?

A Yes, sir. It would be less than one to one on 80 acres.

Q In your judgment, Mr. Sharp, would economic waste result from the drilling of 40-acre wells on this unit?

A Yes, sir, it would.

Q Could you economically justify the drilling of 40-acre wells on the unit?

A No, I couldn't recommend it.

Q Turn to your next Exhibit No. 7, Mr. Sharp. Explain what that is and the purpose of it.

A Well, Exhibit 7 shows the location of the South Four Lakes Pool. It's a map showing the northern part of Lea County with just a little bit of the surrounding counties on it. The Four Lakes-Pennsylvanian field is circled in red. Circled in green are six fields which are also Pennsylvanian, well, with the exception of those in the very south which are Wolfcamp, but they're of kin to Pennsylvanian, being dolomitic limestones of slightly newer age, but these show the other fields in the area which are on 40-acre spacing.

Q You mean on 80-acre spacing?

A On 80-acre spacing, excuse me.



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Q Your Ranger Lake is immediately south of this pool, is that correct?

A Yes, sir.

Q And your Lane and South Lane lie to the north, Allison, South Gladiola to the east?

A Yes, sir.

Q Have you briefly compared these pools this morning from the case records of the hearings on those pools?

A Yes, sir. I reviewed the case records of these fields and picked up what data I could find on them. As might be expected, they did vary considerably, it appears that possibly Ranger Lake, which geographically is the closest well to Four Lakes, also almost most nearly represents it, whereas we are estimating a porosity of 10%, Ranger Lake has about 7%. Estimated permeability was 28 millidarcies at Ranger Lake as compared to 55.

At Four Lakes we used a 30% connate water as compared to 25% at Ranger Lake. On the basis of net pay the Ranger Lake estimated a considerably greater amount of oil in place, but because it is a dissolved drive the recovery factor was lower. The estimate there was about 175,000 barrels recovery from an 80-acre tract.

As you will note it on our economics, on 40-acre spacing we would recover about 100,000 barrels of oil and make a small profit.



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At Ranger Lake they estimated they had to recover at least 108,000 barrels of oil to break even. So I think these are probably fairly comparable.

Q Your basic difference, they had considerably greater oil in place but a considerably reduced recovery factor?

A Yes, sir.

Q Actually, did they not estimate originally some 210,000 barrels recovery under an 80-acre tract?

A That's true, on the initial hearing they estimated 210,000.

Q And experience proved disappointing and they had to reduce that?

A That's correct.

Q And your figures might be somewhat reduced if experience is not too happy?

A It could possibly be.

Q Is there anything further you care to say with regard to this map or comparisons with the other Pennsylvanian Pools in North Lea County?

A No, sir.

Q Did you give, Mr. Sharp, all of your well data here? I believe you did give your porosity, permeability, connate water, was there anything else as to your reservoir data that you cared



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to introduce?

A Oh, I think that fairly well covers the pertinent points on this.

Q In your opinion, Mr. Sharp, will one well in the Four Lakes-Pennsylvanian Pool efficiently and economically produce the recoverable oil in place under that 80-acre tract?

A Yes, sir.

Q In your opinion would the drilling of wells on 40-acre tracts result in economic waste?

A It would.

Q Turn to your Exhibit No. 8 and explain what it is.

A Well, Exhibit 8 is a proposed set of field rules providing for 80-acre spacing. Rule No. 1 sets out the 80-acre spacing and allows some flexibility in that a well may be located in either end of an 80-acre proration unit. It may be located on either quarter quarter section. This flexibility appears desirable since the field is essentially developed now. Well, Rules 2 and 3, I believe, are routine. No. 3 sets out the 80-acre proportional factor for the present depth range, that's the same as it is now except on 40's. And Rule 4 makes provisions for tracts that may have more or less than 40 acres in a quarter quarter section.

Q Actually, this is a unit operation and all of the lands



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are unitized, is that correct?

A Yes, as shown on the map, I think the entire productive limits will be on the unit.

Q Is there anything further you care to state with regard to any of your exhibits, Mr. Sharp?

A No, sir.

Q Were Exhibits 1 through 8 prepared by you or under your supervision?

A Yes, sir.

MR. BRATTON: We would offer in evidence applicant's Exhibits 1 through 8. We have no further questions at this time.

MR. UTZ: Without objections, Exhibits 1 through 8 will be admitted into the record in this case.

(Whereupon, Applicant's Exhibits 1 through 8 were admitted into the record.)

CROSS EXAMINATION

BY MR. UTZ:

Q Your discovery well was completed below the 10,000 feet?

A Yes, ten two something.

Q Since you considered the upper perforations to be in the same zone and apparently the Commission considers it to be so?

A Yes. The entire Cisco has been prorated as the Four Lakes-Pennsylvanian so far. We have no desire to split them apart.



Q I wonder if you would repeat your core data, I have the connate water?

A Let's see, the porosity is 10%. I can say the core data is fairly limited. We had some cores in two wells. We didn't get complete coverage. The permeability on 55 darcies is based on buildup.

MR. BRATTON: It's 55 millidarcies.

A Excuse me, 55 millidarcies. The connate water was 30%.

Q I believe you stated in your opinion it's a water drive pool?

A Yes, sir. Volumetric or material balance work shows a water drive.

Q Actually 55 millidarcies is not a tremendous amount of permeability for an oil pool?

A In West Texas it is. In other parts it's not really.

Q Referring to your Exhibit No. 5, did you have a tabulation that would show the exact number of hours that the No. 4 well had been shut in before you opened to 5 and 7?

A Well, you can read it on that plot. It's about 95 or 96 hours. I don't have the exact tabulation with me.

Q Then the next pressure you took on that well, was it slightly over a hundred hours?

A Yes, sir.

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Q And which would be, oh, seven or eight hours after you started producing 5 and 7?

A Yes, sir.

Q You actually experienced that amount of decline on your shut in well?

A Yes, sir. Well, it's an unsaturated crude, the pressure is still above the saturation point, so there's no gas in solution we believe now in the reservoir, so with solid fluid in there you would expect to notice a pressure change much more rapidly than you would if you did have a gas saturation, make it more compressible.

Q Do you intend to go ahead and fully develop this well on an 80-acre pattern?

A We have approval to drill another well now. Some of the edge locations I don't think we can say we are going to develop because with the water drive and the water moving in I don't believe it will be possible to get right out on the edges.

Q What is the location of your other well?

A I can tell you approximately. It would be in the quarter section immediately to the south of well No. 2.

MR. UTZ: Are there other questions of the witness?

MR. BRATTON: I believe not.

MR. UTZ: The witness may be excused.



(Witness excused.)

MR. UTZ: Are there any statements in this case? The case will be taken under advisement.

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Court Reporter, do hereby certify that the foregoing and attached transcript of proceedings before the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, is a true and correct record to the best of my knowledge, skill and ability.

IN WITNESS WHEREOF I have affixed my hand and notarial seal this 1st day of October, 1962.

Ada Dearnley
Notary Public-Court Reporter

My commission expires:

June 19, 1963.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2632, heard by me on *Sept. 14*, 1962.
[Signature], Examiner
New Mexico Oil Conservation Commission

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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. 2632
Order No. R-2326

APPLICATION OF HUMBLE OIL & REFINING
COMPANY FOR AN ORDER ESTABLISHING
SPECIAL RULES AND REGULATIONS FOR THE
FOUR LAKES-PENNSYLVANIAN POOL, LEA
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on September 11, 1962, at Santa Fe, New Mexico, before Elvis A. Utz, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 3rd day of October, 1962, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Elvis A. Utz, 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, Humble Oil & Refining Company, seeks the promulgation of special rules and regulations for the Four Lakes-Pennsylvanian Pool, Lea County, New Mexico, including a provision for 80-acre oil proration units therein.

(3) That the evidence establishes that the Four Lakes-Pennsylvanian Pool can be efficiently and economically drained and developed on 80-acre proration units.

(4) That the evidence establishes that 80-acre proration units will prevent the drilling of unnecessary wells, prevent reduced recovery which might result from the drilling of too few wells, and will otherwise prevent waste and protect correlative rights.

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CASE No. 2632
Order No. R-2326

IT IS THEREFORE ORDERED:

(1) That Special Rules and Regulations for the Four Lakes-Pennsylvanian Pool are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE
FOUR LAKES-PENNSYLVANIAN POOL

RULE 1. Each well completed or recompleted in the Four Lakes-Pennsylvanian Pool or in the Pennsylvanian formation within one mile of the Four Lakes-Pennsylvanian Pool, and not nearer to or within the limits of another designated Pennsylvanian pool shall be spaced, drilled, operated, and prorated in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. Each well completed or recompleted in the Four Lakes-Pennsylvanian Pool shall be located on a unit containing 80 acres, more or less, which consists of the N/2, S/2, E/2, or W/2 of a single governmental quarter section; provided, however, that nothing contained herein shall be construed as prohibiting the drilling of a well on each of the quarter-quarter sections in the unit.

RULE 3. For good cause shown, the Secretary-Director may grant an exception to the requirements of Rule 2 without notice and hearing when the application is for a non-standard unit comprising a single quarter-quarter section or lot. All operators offsetting the proposed non-standard unit shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application if, after a period of 30 days, no offset operator has entered an objection to the formation of such non-standard unit.

The allowable assigned to any such non-standard unit shall bear the same ratio to a standard allowable in the Four Lakes-Pennsylvanian Pool as the acreage in such non-standard unit bears to 80 acres.

RULE 4. The initial well on any 80-acre unit in said pool shall be located within 150 feet of the center of either quarter-quarter section or lot in the 80-acre unit. Any subsequent additional well on the 80-acre unit shall be located within 150 feet of the center of the other quarter-quarter section or lot in the unit.

RULE 5. An 80-acre proration unit (79 through 81 acres) in the Four Lakes-Pennsylvanian Pool shall be assigned an 80-acre

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CASE No. 2632
Order No. R-2326

proportional factor of 5.67 for allowable purposes, and in the event there is more than one well on an 80-acre proration unit, the operator may produce the allowable assigned to the unit from the wells on the unit in any proportion.

(2) That the Special Rules and Regulations herein promulgated shall become effective October 1, 1962; provided, however, that no well shall receive an 80-acre allowable prior to the date of filing with the Hobbs office of the Commission Form C-128 showing thereon 80 acres dedicated to said well. Form C-128 shall be accompanied by Form C-116, Gas-Oil Ratio Test Report, substantiating the ability of the well to produce the allowable requested.

(3) 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



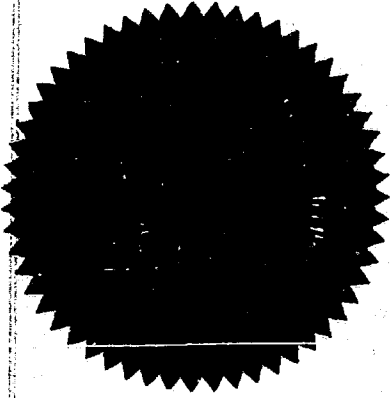
EDWIN L. MECHEM, Chairman



E. S. WALKER, Member



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



esr/

Case. 2632

Heard 9-11-62

Rec. 9-21-62

Grant Kumble request for 80 ac.
spacing in the 500 Acres -
Penn. Oil Pool.

Suggest we use the S. Lease Penn.
rule as a guide for this order.
R-2253. Page. 128 Byrums.

Grant use 7 depth factors.
check of 5.67 for 10 to 11 ft.

for 1 ft?

Thurs. 10/1/62

DOCKET: EXAMINER HEARING - TUESDAY - SEPTEMBER 11, 1962

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

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

CASE 2612 (Continued)

Application of Texaco Inc. for a tubing exception, Lea County, New Mexico. Applicant, in the above-styled cause, seeks permission to produce its C. C. Fristoe (b) NCT-2 Well No. 6, located in Unit H of Section 35, Township 25 South, Range 37 East, Lea County, New Mexico, North Justis-Devonian Pool, through a string of 1 1/2-inch OD tubing run with a packer inside of a 2 7/8-inch OD casing.

CASE 2626: Application of La Plata Gathering System, Inc., for a dual completion at an unorthodox gas well location, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval of a Basin Dakota-Blanco Mesaverde dual completion at an unorthodox location 1680 feet from the South line and 734 feet from the East line of Section 19, Township 32 North, Range 5 West, Rio Arriba County, New Mexico.

CASE 2627: Application of La Plata Gathering System, Inc., for an unorthodox gas well location, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox Blanco Mesaverde well location 1,790 feet from the North line and 790 feet from the East line of Section 24, Township 32 North, Range 6 West, Rio Arriba County, New Mexico.

CASE 2628: Application of Marathon Oil Company for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox gas well location in the Atoka-Pennsylvanian Gas Pool at a point 990 feet from the North line and 990 feet from the East line of Section 30, Township 18 South, Range 26 East, Eddy County, New Mexico.

CASE 2629: Application of S. P. Yates Drilling Company for approval of a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Pecos River Deep Unit Agreement comprising 17,257.82 acres, more or less, of State, Federal and Fee lands in Township 19 South, Ranges 26 and 27 East, and Township 20 South, Range 26 East, Eddy County, New Mexico.

Docket No. 26-62

Examiner Hearing September 11, 1962

CASE 2630: Application of Gulf Oil Corporation for a triple completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks permission to complete its Graham State (NCT-I) Well No. 1, located in Unit M of Section 19, Township 21 South, Range 37 East, Lea County, New Mexico, as a triple completion (conventional) in the Paddock, Blinebry and Drinkard Oil Pools with the production of oil from all three zones to be through parallel strings of tubing.

CASE 2631: Application of Moran Oil Producing and Drilling Corporation for a triple completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order authorizing the triple completion (conventional) of its Owen Well No. 1, located in Unit E, Section 14, Township 21 South, Range 37 East, Lea County, New Mexico, in such a manner as to produce Blinebry oil, Tubb gas, and Drinkard oil through parallel strings of tubing.

CASE 2632: Application of Humble Oil & Refining Company for an order establishing special rules and regulations for the Four Lakes-Pennsylvanian Pool, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order establishing special rules and regulations for the Four Lakes-Pennsylvanian Pool, Lea County, New Mexico, to include provisions for 80-acre oil proration units therein.

CASE 2633: Application of General American Oil Company of Texas for expansion of a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks expansion of its waterflood project in the Loco Hills Pool by the conversion to water injection of its Beeson F Well No. 10, located in Unit B of Section 31, Township 17 South, Range 30 East, Eddy County, New Mexico.

CASE 2634: Application of Ambassador Oil Corporation for approval of a unit agreement and waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks permission to institute a waterflood project in the Grayburg-Jackson Pool, with the initial injection of water to be through six wells located in Sections 22, 23, and 26, Township 17 South, Range 30 East, Eddy County, New Mexico, said project to be governed by Rule 701. Applicant further seeks approval of the Grayburg-Jackson Unit Agreement embracing 1600 acres, more or less, of federal and State lands in Township 17 South, Range 30 East, Eddy County, New Mexico.

Docket No. 26-62

Examiner Hearing September 11, 1962

CASE 2635: Application of L. R. French, Jr. for an order creating a new pool and establishing temporary rules or extension of the South Lane Pennsylvanian Pool, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order creating a new pool for Pennsylvanian production; the discovery well for said pool is the Gulf-State Well No. 1, located in Unit A of Section 18, Township 11 South, Range 34 East, Lea County, New Mexico, completed in the Bough "C" zone of the Pennsylvanian formation. Applicant further seeks establishment of special rules and regulations governing said pool, including 80-acre proration units. As an alternative, applicant seeks extension of the South Lane Pennsylvanian Pool to include said Gulf-State Well No. 1.

CASE 2639: Application of General American Oil Company of Texas for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of a pilot waterflood project in the Upper San Andres formation, Grayburg-Jackson Pool, Eddy County, New Mexico, by the injection of water into its Keeley "B" Well No. 13, located in Unit H, Section 26, Township 17 South, Range 29 East.

CASE 2640: Application of General American Oil Company of Texas for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of a pilot waterflood project in the Grayburg zone of the San Andres formation, Grayburg-Jackson Pool, Eddy County, New Mexico, by the injection of water into its Keeley "C" Well No. 25, located in Unit O, Section 25, Township 17 South, Range 29 East.

CASE 2641: Application of Continental Oil Company for a non-standard gas proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of a non-standard 80-acre gas proration unit, Blinbry Gas Pool, Lea County, New Mexico, said unit to comprise the NW/4 NW/4 and SE/4 NW/4 of Section 10, Township 21 South, Range 37 East, and be dedicated to applicant's State 10 Well No. 1, located in the NW/4 NW/4 of said Section 10.

ir/

J. M. HERVEY 1874-1953

HIRAM M. DOW
CLARENCE E. HINKLE
W. E. BONDURANT, JR.
GEORGE H. HUNKER, JR.
HOWARD C. BRATTON
S. B. CHRISTY IV
LEWIS C. COX, JR.
PAUL W. EATON, JR.
CONRAD E. COFFIELD
HAROLD L. HENSLEY, JR.

LAW OFFICES
HERVEY, DOW & HINKLE

HINKLE BUILDING

ROSWELL, NEW MEXICO

August 20, 1962

TELEPHONE MAIN 2-6510
POST OFFICE BOX 10

Mr. A. L. Porter, Jr.
New Mexico oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Dear Mr. Porter:

Comes now Humble Oil & Refining Company and applies to the Commission for an Order establishing special rules and regulations for the Four Lakes-Pennsylvanian Pool, Lea County, New Mexico. Humble seeks an Order establishing special rules and regulations for the Four Lakes-Pennsylvanian Pool, Lea County, New Mexico, to include provisions for 80-acre oil proration units therein.

Will you please set the above matter for hearing before an Examiner at the earliest possible date, it being my understanding that such date would be September 11th.

If there is any question about the Application or about setting the matter for hearing at the above date, please call me.

Very truly yours,

HERVEY, DOW & HINKLE

Howard C. Bratton
Howard C. Bratton

HCB:lm

cc: H. E. Meadows
Humble Oil & Refining Company
P. O. Box 1600
Midland, Texas

*Rechecked
Mailed
8/31/62*

GOVERNOR
EDWIN L. MECHEM
CHAIRMAN

State of New Mexico
Oil Conservation Commission

LAND COMMISSIONER
E. S. JOHNNY WALKER
MEMBER



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

P. O. BOX 871
SANTA FE

October 3, 1962

Mr. Howard Bratton
Harvey, Dow & Hinkle
Attorneys at Law
Box 10
Roswell, New Mexico

Re: CASE NO. 2632 and 2635
ORDER NO. R-2326 and R-2325
APPLICANT:
Humble Oil & Refining Company and
R. L. French, Jr.

Dear Sir:

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

Very truly yours,

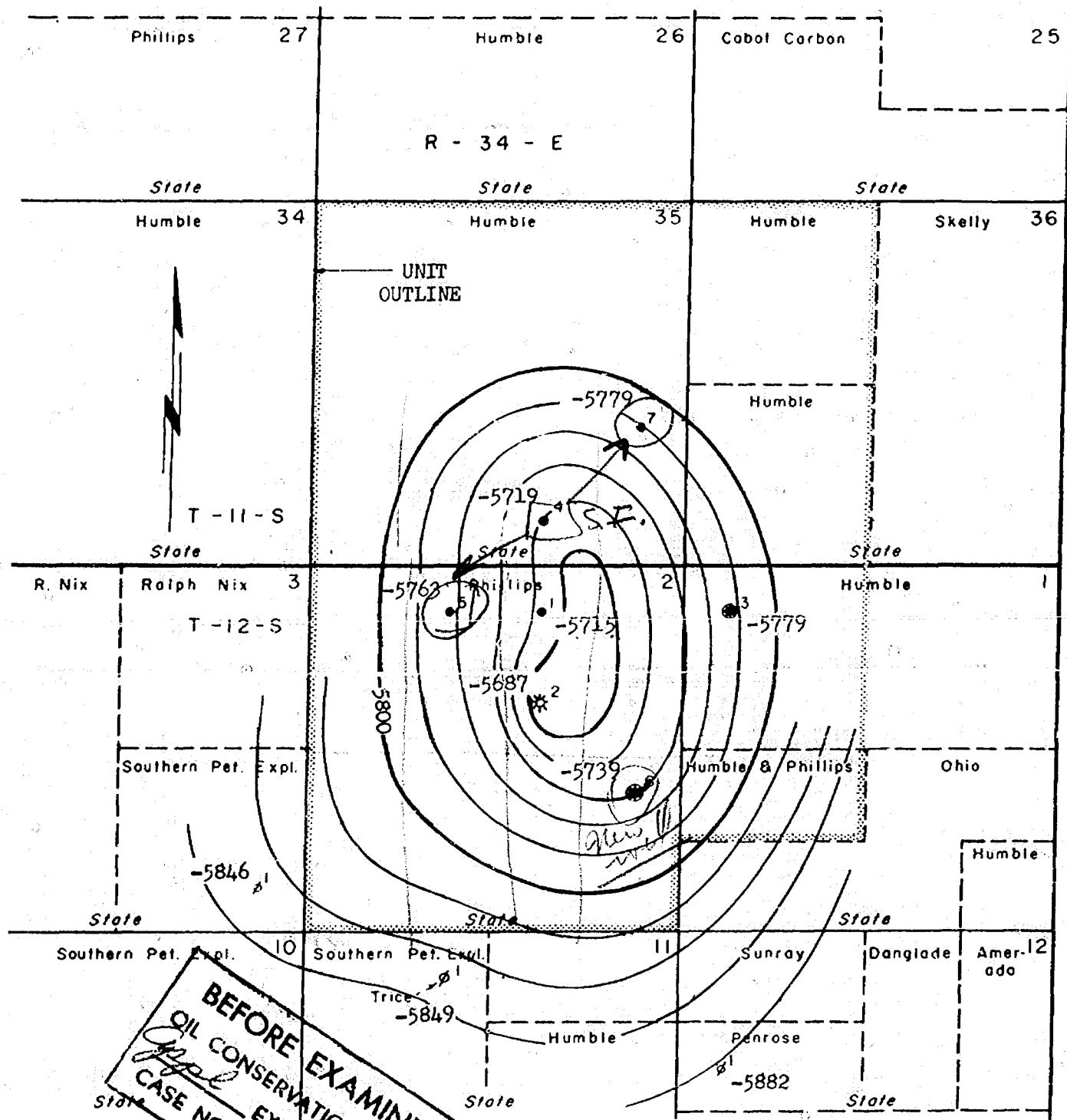
A. L. Porter, Jr.
A. L. PORTER, Jr.
Secretary-Director

ir/

Carbon copy of order also sent to:

Hobbs OCC x
Artesia OCC
Aztec OCC

OTHER



BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
CASE NO. 2632-1
EXHIBIT NO. 1

- Penn Oil Well
- ★ Devonian Gas Well
- Devonian Gas-Penn Oil (Dual)

Contour Interval: 20'

0 2000' 4000'
 SCALE

Ex. No. 1

HUMBLE OIL & REFINING COMPANY
 SOUTHWEST REGION
 EXPLORATION DEPT. MIDLAND AREA
 STRUCTURAL CONTOUR MAP
 on top of
 CISCO MARKER
 FOUR LAKES PENNSYLVANIAN FIELD
 Lea County, New Mexico

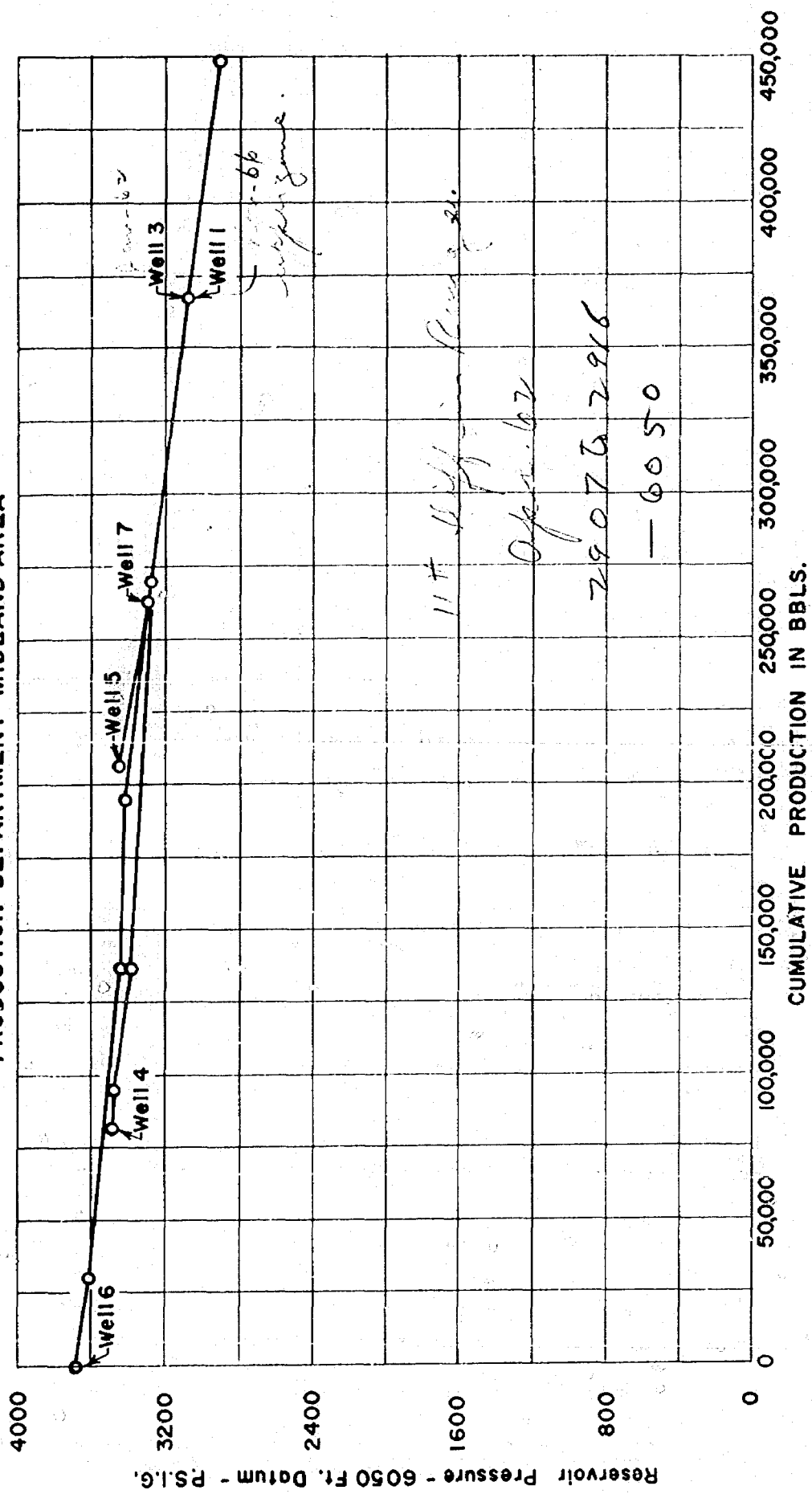
HOBBS DISTRICT

JANUARY 16, 1962

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 4
CASE NO. 2632

PRESSURE HISTORY
FOUR LAKES PENNSYLVANIAN FIELD
HUMBLE OIL & REFINING CO.
SOUTHWEST REGION

PRODUCTION DEPARTMENT MIDLAND AREA



Ex. No. 4

DRILLING ECONOMICS
FOUR LAKES PENNSYLVANIAN FIELD

	80-Acre Spacing (One Well)	40-Acre Spacing (Two Wells)	Loss From Closer Spacing
Ultimate Recovery, Bbls.	199,348	199,348	---
Initial Investment	\$ 172,000	\$ 344,000	\$ 172,000
Ultimate Profit	\$ 328,546	\$ 136,421	\$ 192,125
Payout Period, Years	0.9	1.3	---
Profit to Investment Ratio	1.9	0.4	---
Present Value Profit (5%)	\$ 282,084	\$ 103,181	\$ 178,903
Present Value Profit (10%)	\$ 242,695	\$ 74,210	\$ 168,485

120,000 by vol. method.

Core Data: 30% H₂O
Por. 10%
Perm. 55 md.

H₂O Drive

Rec. Factor 40%

BEFORE EXAMINER UTZ	
OIL CONSERVATION COMMISSION	
App. EXHIBIT NO.	6
CASE NO.	2632

Midland Area
Reservoir Engineering Section
CFS/evd 9-7-62

Ex. No. 6

SPECIAL RULES AND REGULATIONS FOR THE
FOUR LAKES PENNSYLVANIAN POOL

IT IS ORDERED:

- (1) That 80-acre proration units be and the same are hereby established for the Four Lakes Pennsylvanian Pool; further, that all wells drilled to and completed in said Four Lakes Pennsylvanian Pool shall be located on 80-acre proration units embracing two adjacent governmental quarter-quarter sections or lots within a single governmental section; further, that the aforesaid 80-acre proration units shall run either North and South or East and West. The well thereon may be located on either quarter-quarter section or lot comprising the 80-acre unit, but shall not be closer than 330 feet from the boundaries of such quarter-quarter section or lot.
- (2) That Form C-128 filed in conformance with Rule 1104 shall outline the acreage dedicated to any projected well.
- (3) That individual well allowables for wells drilled in conformity with the 80-acre spacing rules herein provided for the Four Lakes Pennsylvanian Pool shall be established in accordance with the 80-acre proportional factor for a depth range of 10,000 to 11,000 feet, and with the other provisions of Rule 505 of the Rules and Regulations of the Commission. Provided, however, that the date of assignment of an allowable to a newly completed well shall be governed by the provisions of Rule 503 (c) and the date of receipt by the Commission of the Commission's Affidavit of Communitization Agreement, if applicable.
- (4) The allowable for any well completed in the Four Lakes Pennsylvanian Pool and to which is assigned any governmental quarter-quarter section or lot containing less than 39-1/2 acres or more than 40-1/2 acres shall have its allowable decreased or increased in the proportion that the total number of acres assigned to the well bears to 80 acres.

File

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
<i>Appel</i> EXHIBIT NO. <u>8</u>
CASE NO. <u>2632</u>

Ex 16.8