CASE 3708: Application of BTA OIL PRODUCERS for special area rules, Lea County, New Mexico

Case No.

3708

Application, Transcript,

Small Exhibits, Etc.

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE No. 3708
Order No. R-3376

APPLICATION OF BTA OIL PRODUCERS
FOR SPECIAL AREA RULES, LEA COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on January 10, 1968, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 8th day of February, 1968, 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, BTA Oil Producers, seeks the promulgation of special rules and regulations for that area of Lea County, New Mexico, including the Vada-Pennsylvanian, Lane-Pennsylvanian, and a portion of the Middle Lane-Pennsylvanian Pools, and described as follows:

TOWNSHIP 9 SOUTH, RANGE 33 EAST, NMPM
Section 36: All

TOWNSHIP 9 SOUTH, RANGE 34 EAST, NMPM
Sections 15 through 22: All
Sections 27 through 33: All

TOWNSHIP 10 SOUTH, RANGE 33 EAST, NMPM
Sections 1 through 3: All
Sections 10 through 12: All
Section 13: N/2
Section 14: N/2
Section 15: N/2

TOWNSHIP 10 SOUTH, RANGE 34 EAST, NMPM
Sections 4 through 9: All
Section 16: N/2
Section 17: N/2
Section 18: N/2

(2) That the applicant proposes the adoption of 160-acre proration units for the above-described area, or within one mile thereof, for the Bough "C" zone of the Pennsylvanian formation with each proration unit to be assigned an 80-acre proportional factor of 4.77 for allowable purposes and that the rules presently contained in Commission Order No. R-3179-A, Temporary Rules, Vada-Pennsylvanian Pool, be adopted and made permanent for the above-described area, or

(3) In the alternative, the applicant proposes that certain of the above-described lands be deleted from the Lane-Pennsylvanian and Middle Lane-Pennsylvanian Pools, and that the Vada-Pennsylvanian Pool be extended to include all of the above-described lands therein.

(4) That the evidence presently available indicates that the above-described area contains acreage that has been proven non-productive of oil or gas, or both oil and gas, in the Bough "C" zone of the Pennsylvanian formation; that the subject area also contains extensive acreage that has not been proven productive of oil or gas, or both oil and gas, in said zone.

(5) That the evidence presently available, therefore, does not establish that the above-described area constitutes a common accumulation of oil or gas, or both oil and gas, in the Bough "C" zone of the Pennsylvanian formation.

(6) That the application seeking the promulgation of special rules and regulations, including a provision for 160-acre proration

units, for the above-described area is premature, would not otherwise prevent waste or protect correlative rights, and should be denied.

IT IS THEREFORE ORDERED:

(1) That the subject application is hereby denied.

(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

DAVID F. CARGO, Chairman

GUYTON B. HAYS, Member

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

esr/

Case 3708.
Heard 1-10-68
Rec. 1-17-68.

The area requested here for 160 Ac. spacing is far in excess of the known producing area of the Vada Lane & Middle Lane-Penn oil pools. Also the Lane & Middle Lane pools are cut ~~into~~ in two parts by the boundary of the requested acreage. This would leave portions of these pools on 80 Ac spacing with 160 in the balance of the pools. The consolidation of the pools would leave the 40 & 80 acre area with reduced allowables when they had drilled & developed on 80 Ac. spacing.

The Vada is on 160 spacing and can be extended as development occurs. The Lane pool can be reduced if necessary. I therefore recommend the request be denied.

GOVERNOR
DAVID F. CARGO
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

February 8, 1968

Mr. Jason Kellahin
Kellahin & Fox
Attorneys at Law
Post Office Box 1769
Santa Fe, New Mexico

Re: Case No. 3708
Order No. R-3376
Applicant:
BTA OIL PRODUCERS

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.
Secretary-Director

ALP/ir

Carbon copy of order also sent to:

Hobbs OCC x
Artesia OCC
Aztec OCC
Other Mr. J. B. Jordan, and Mr. Dick Morris

CLASS OF SERVICE
This is a fast message unless its deferred character is indicated by the proper symbol.

WESTERN UNION TELEGRAM

W. P. MARSHALL, CHAIRMAN OF THE BOARD — R. W. McFALL

(57).

SYMBOLS
DL=Day Letter
NL=Night Letter
LT=International Letter Telegram

The filing time shown in the date line on domestic telegrams is LOCAL TIME at point of origin. Time of receipt is LOCAL TIME at point of destination

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NEW MEXICO OIL CONSERVATION COMMISSION=
S L O BLDG SANTA FE NMEX=

ATTN A L PORTER JR RE CASE 3708. PLEASE BE ADVISED THAT SOUTHLAND ROYALTY CO APPROVES AND SUPPORTS THE APPLICATION OF BTA OIL PRODUCERS APPLICATION FOR SPECIAL AREA RULES FOR THE VADA-PENN LANE-PENN AND MIDDLE LANE PENN POOLS LEA COUNTY NEW MEXICO. SOUTHLAND ROYALTY CO RECOMMEND 160 ACRE PRORATION UNIT FOR THESE POOLS=

ALTON C GOODRICH SOUTHLAND ROYALTY CO=

=3708 160=

69 JAN 9 AM 10 26

WU1201 (1-62-65) THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

Docket No. 1-68

DOCKET: EXAMINER HEARING - WEDNESDAY - JANUARY 10, 1968

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 3690: (Continued from the November 29, 1967, Examiner Hearing)

Application of Roger C. Hanks, Ltd., for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the Bar-U Pennsylvanian Pool, Lea County, New Mexico, including a provision for 160-acre spacing units and the establishment of 80-acre allowables for said 160-acre units.

CASE 3707: Application of William B. Barnhill for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of his Keohane Well No. 1 located in Unit N of Section 6, Township 20 South, Range 38 East, Lea County, New Mexico, to produce oil from the Skaggs-Grayburg and undesignated Blinebry pool through parallel strings of tubing.

CASE 3708: Application of BTA Oil Producers for special area rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special rules for that area of Lea County, New Mexico, including the Vada-Pennsylvanian, Lane-Pennsylvanian, and a portion of the Middle Lane-Pennsylvanian Pools, and described as follows:

TOWNSHIP 9 SOUTH, RANGE 33 EAST
Section 36: All

TOWNSHIP 9 SOUTH, RANGE 34 EAST
Sections 15 through 22, and 27 through 33: All

TOWNSHIP 10 SOUTH, RANGE 33 EAST
Sections 1, 2, 3, 10, 11 and 12: All
N/2 Section 13;
N/2 Section 14;
N/2 Section 15;

TOWNSHIP 10 SOUTH, RANGE 34 EAST
Sections 4 through 9: All
N/2 Section 16;
N/2 Section 17;
N/2 Section 18;

Applicant proposes the adoption of 160-acre proration units for the above-described area, or within one mile thereof, for the Bough "C" zone of the Pennsylvanian formation with each proration unit to be assigned an 80-acre proportional factor of 4.77 for allowable purposes.

Applicant proposes that the rules presently contained in Commission

Order No. R-3179-A, Temporary Rules, Vada-Pennsylvanian Pool, be adopted and made permanent for the above-described area or, in the alternative, that the above-described land be deleted from the Lane-Pennsylvanian and Middle-Lane Pennsylvanian Pools and the Vada-Pennsylvanian Pool be extended to include said lands therein.

CASE 3246: (Reopened)

In the matter of Case No. 3246 being reopened pursuant to the provisions of Order No. R-2935-A, which order extended special pool rules for the Mesa Queen Pool, Lea and Eddy Counties, New Mexico. All interested parties may appear and show cause why the gas-liquid ratio limitation of 5,000 cubic feet of gas per barrel of liquid hydrocarbons should not be reduced and why the special rules and regulations should not be discontinued.

CASE 3709: Application of Kerr-McGee Corporation for special pool rules, San Juan County, New Mexico. Applicant, in the above-styled cause seeks the promulgation of special pool rules for the Akah Nez-Devonian Oil Pool, San Juan County, New Mexico, including a provision for 80-acre oil proration units.

CASE 3252 (Reopened)

In the matter of Case No. 3252 being reopened pursuant to the provisions of Order No. R-2917-A, which order extended 640-acre spacing units for the McMillan-Morrow Gas Pool, Eddy County, New Mexico, for a period of 18 months. All interested parties may appear and show cause why said pool should not be developed on 320-acre spacing units.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
January 10, 1968

IN THE MATTER OF:

Application of BTA Oil Producers for special area rules, Lea County, New Mexico.) Case No. 3708

BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

MR. UTZ: Case 3708.

MR. HATCH: Case 3708, application of BTA Oil Producers for special area rules, Lea County, New Mexico.

MR. KELLAHIN: If the Examiner please, Jason Kellahin, Kellahin and Fox, appearing for the applicant. We will have two witnesses I would like to have sworn at this time.

MR. UTZ: Are there other appearances in this case?

MR. JORDAN: J. B. Jordan, Union Oil Company of California, Roswell, New Mexico. I will have a statement at the conclusion of the testimony.

MR. MORRIS: I am Dick Morris of Montgomery, Federici, Andrews, Hannahs and Morris, Santa Fe, appearing for Midwest Oil Corporation. We will have just a statement to make at the end of the case.

MR. UTZ: Will you swear the witnesses, please?

(Witnesses sworn.)

MR. KELLAHIN: I call as our first witness, Mr. W. G. Kern.

(Whereupon, Applicant's Exhibits 1 through 11 marked for identification.)

W. G. KERN

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

A William G. Kern.

Q By whom are you employed and in what position, Mr. Kern?

A BTA Oil Producers, Midland, Texas, as a reservoir engineer.

Q Have you testified before the Oil Conservation Commission and made your qualifications a matter of record?

A I have.

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

MR. UTZ: Yes, sir, they are.

Q Are you familiar with the application of BTA in Case Number 3708?

A I am.

Q Briefly, what is proposed by BTA in this application?

A What we are requesting here is a hundred sixty

acre spacing with eighty acre allowable in any development well to be located on any quarter, quarter section.

Q In the alternative do you ask for an extension to include this area involved here in the Vada-Pennsylvanian Pool?

A We did.

Q Would the Vada-Pennsylvanian Pool rules be substantially the same as you are proposing here?

A They are the same.

Q Now referring to what has been marked as Exhibit Number 1, would you identify that exhibit, please?

A Exhibit 1 is a lease plat showing BTA's acreage outlined. First of all, it shows the area outlined that we are requesting one hundred sixty acre spacing. It also shows BTA's acreage and Midwest's acreage.

Q How are various acreages shown, what color?

A BTA's acreage is shown in yellow and Midwest's is shown in green and the total of the two companies own about forty-five per cent of the area outlined.

Q Are there several other companies then that have the remaining acreage?

A There are.

Q Does the exhibit show the producing wells in the

area at the present time?

A It does. It shows all the producing wells.

Q Has the area involved in this application been developed to date on the basis of a hundred sixty acre spacing or eighty acre spacing?

A Essentially this area has been developed to date on the basis of one hundred sixty acre spacing.

Q Is there any exception to that?

A There is one location in Section 10 of 10, 33 where there are two wells on a hundred sixty acres but it is my belief that one of these wells has been temporarily abandoned and the production will come from the other well which puts the entire area on a hundred sixty acre spacing at this time.

Q Then if the application is approved as requested, it would require no exception at least to date for any well locations, is this correct?

A That is correct.

MR. UTZ: Which well are we speaking of there in Section 10?

A In Section 10, the Skelly State, I believe the Skelly State Number 1 has been temporarily abandoned and Skelly State Number 2 is a producing well. This can be

verified by Midwest during their testimony.

MR. UTZ: Your map here would show just the opposite, wouldn't it?

A No, my map shows both wells are producing at this time.

MR. UTZ: That's in 10, 33 Section 10?

A Right. Section 10, 10, 33.

MR. UTZ: That's in the north half?

A Right.

A Right.

MR. UTZ: No, I'm sorry. You've got Skelly State in the north half as well as the south half and one and two in both halves so it's the south half you're speaking of.

A It's the south half I'm speaking of.

MR. UTZ: I see. Okay.

Q (By Mr. Kellahin) That would be the only unit that has more than one well on one hundred sixty acres, is that correct?

A That's correct.

Q Now, referring to what has been marked as Exhibit Number 2, would you identify that exhibit?

A Exhibit Number 2 is the structure map on top of the Bough C zone. We have outlined the area that we have

requested one hundred sixty acre spacing for and also on this map we have outlined some key wells which we will refer to in a later exhibit.

Q Now, what primarily does this exhibit show to you?

A This exhibit shows primarily the structure of the Bough C zone but it also shows the continuity of the zone through the entire area and fairly well developed giving good control among the points.

Q The structure map is based on actual records from wells that have been drilled to this zone, is that correct?

A That's true.

Q And approximately how many wells are involved there?

A In the area that we are talking about there are a total of thirty-six wells. Outside the area I would say there is another fifty to sixty wells at least.

MR. UTZ: That are completed in the Bough C?

A Right, yes sir.

MR. UTZ: How many in your area?

A In our area there are a total of thirty-six wells. Twenty-seven are producers, nine are now drilling.

MR. UTZ: Outside of your area completed in the Bough C you say there is how many?

A I would estimate fifty wells through the whole area.

Q (By Mr. Kellahin) What pools would those other wells be located in?

A The other wells would be located in the Simanola, the Jenkins-Wolfcamp, the Jenkins and the Lane and Inbe Pools.

Q That would be the Jenkins-Cisco?

A Jenkins-Cisco.

Q Not the Jenkins-Wolfcamp?

A Right.

Q Now, referring to what has been marked as Exhibit Number 3, would you identify that exhibit?

A Exhibit Number 3 is a north-south cross section running from the Lane and Middle Lane field up through the Lane field into the Vada area. Now this cross section shows the continuity of the Bough C zone through the entire area.

Q The Bough C is a well defined area as shown by this exhibit, is that correct?

A It is. It's the zone that we have marked red on

this exhibit.

Q And are geologists generally in agreement on the Picode of this zone without any question?

A I believe so.

Q Does this indicate to you that the producing horizon is continuous throughout the area of this application?

A It is continuous throughout the entire area.

Q And referring to what has been marked as Exhibit Number 4, would you identify that exhibit?

A Exhibit 4 is an east-west cross section running from the Jenkins-Cisco field over to the Lane field. It has the Bough C again outlined in red on the cross section. It illustrates the continuity of the Bough C through the entire zone, east and west.

Q Now, with reference to Exhibits 3 and 4, Mr. Kern, they both cover more than the area we are talking about here. They go into different pools, do they not?

A They do.

Q With reference to Exhibit Number 3, does that cover the Lane, Middle Lane and Vada-Pennsylvanian Pools?

A It does.

Q Are any of those presently under a hundred sixty

acre proration units?

A Vada Pool is presently under temporary hundred and sixty acre proration units with an eighty acre allowable.

Q Now, the Lane and Middle Lane, are they on eighty acre spacing?

A Yes.

Q And they lie to the south of the area for which you are seeking special rules, is that correct?

A That's correct.

Q Are those two pools essentially developed at the present time on eighty acre spacing?

A The Lane --

Q Lane and Middle Lane?

A The Middle Lane are on eighty acre spacing at this time.

Q Is that the reason you selected the point you did as the southern limit of the area you are asking for rules for at the present time?

A That is true.

Q Because it's already developed?

A It is already developed on eighty acres.

Q Now, Exhibit Number 4, the east west cross section runs into more than one pool, does it not?

A It does. It runs from the Lane over through into the Jenkins-Cisco Pool.

Q Now, the Lane, as you said, is on eighty acre spacing?

A Right.

Q And has been substantially developed in that fashion, is that correct?

A That is true.

Q And the cross section then crosses the area involved in this application?

A Right.

Q And extends into the Jenkins-Cisco?

A Right.

Q What is the spacing in the Jenkins-Cisco?

A The Jenkins-Cisco Pool is presently on a hundred sixty acre spacing with eighty acre allowable.

Q That is, it has a four point seven seven proportional factor --

A That is true.

Q -- for allowable purposes. Now, referring to

what has been marked as Exhibit Number 5, would you identify that exhibit?

A Exhibit Number 5 is a well-data map showing the outline of the area we are considering for a hundred sixty acre spacing. On this data map we have the date of completion, the datum of the Bough C zone, any pressures that have been taken during drillstem tests on the Bough C zone and the cumulative production to date. If wells have been drilled later than 10/1/67, we do not have cumulative production shown. We have shown our initial potentials or drillstem test results in that zone.

Q Now, on the exhibit you have placed an orange triangle with a number around some of the wells?

A These are what we consider the key wells in this area. In Section 1 of 10, 33 we have outlined Sunray's 1-F This was the original well in this area and in December of 1955, a drillstem test in this zone had a bottom hole pressure of thirty-five seventy-five.

Q That would be considered then the virgin pressure for the reservoir?

A We consider that the virgin pressure.

Q Is that the purpose for showing the information

on this particular well?

A That is true.

Q Now going to the well you have marked as Number 2, would you locate that well and discuss the significance of the information shown there?

A Number 2 is located in Section 21 of 9, 34. This was a well drilled by Union in 1963. The pressure here as shown is thirty-four fourty-four.

Q Now, where was the nearest production at the time that well was drilled?

A At the time that well was drilled it was three miles from production and it has shown a pressure draw-down.

Q Well, it showed a pressure draw-down initially. You say it has shown one since?

A Not since.

Q This only shows the initial pressure?

A Right. This was drilled as a dry hole, plugged at that time.

Q But it does show a significant pressure draw-down?

A It does show a pressure draw-down.

Q Now, referring --

MR. UTZ: Excuse me just a minute. It shows a

pressure draw-down from what?

A From the initial well. The original well, 1-F in Section 1 of 10, 33, the original reservoir pressure being thirty-five seventy-five. This second well drilled in here in 1963 without any production in the vicinity of this well had a bottom hole pressure of thirty-four forty-four.

MR. UTZ: Well, now, how much production did you have from the 1-F? Do you show that anywhere?

A This would be on our later exhibit which would be a bottom hole pressure versus cumulative.

MR. UTZ: Then, what you are saying here then, the Number 1-F produced enough to lower the pressure you believe in the Number 2 Well.

A Essentially there has been enough production from the developed area which has lowered the pressure in this area.

MR. UTZ: You didn't bring the production into it?

A The production will be shown on a later exhibit.

Q (By Mr. Kellahin) The production you are talking about was not confined to the production from the 1-F was it?

A No, it wasn't the single well, it was the entire area.

Q Production in the area?

A Right.

Q Now referring to what has been marked as Number 3 Well.

A Number 3 Well, as we have outlined our Number 3 key wells was located three miles from production. It was drilled by Cactus in eight of 1965. The pressure here had an additional draw-down to thirty-one and a hundred and ninety-three pounds.

Q What would the reduction in pressure on that well be attributable to?

A This is also attributable to the withdrawals from wells located three to four miles away.

Q And primarily in what directions?

A Primarily in the southwest, to the southwest.

Q Now, the Number 4 Well.

A Number 4 Well is a discovery well in the Vada field. This was drilled in 1966 by Midwest. Pressure here was thirty-one seventeen in 1966. It may be interesting at this point to point out the additional development in this area later. For instance, BTA Number 1-A in Section

21 of 9, 33 was drilled in 10/7/67 and the pressure here had further draw-down to twenty-seven eighty-one. Also in Section 27, BTA's C Number 3 which was drilled in 11/67, had an additional draw-down to 2605.

Q What was the closest production to those two wells?

A The closest production would have been, oh, a mile to three quarters of a mile away illustrating that the wells can drain in excess of one hundred sixty acres.

Q Well, it indicates they are actually draining in excess of a hundred sixty acres.

A That's true.

Q Now, referring to the well you have marked as Number 5, the Enfield Well.

A Well Number 5 is located in Section 28 of 9, 34. This well was drilled in 10 of '66. The pressure here was twenty-nine fifty-seven.

Q Number 6 Well.

A Well Number 6 located in 10, 34 was drilled by BTA in December of '67, shows a pressure of twenty-seven sixty-five during the drillstem test in the Bough C zone and Well Number 7 located in Section 30 of 9, 34, drilled during December of 1967 by BTA shows pressure of three

thousand nineteen pounds. This well was approximately a mile and a half from production at the time it was drilled.

Q Number 6 Well, how far was it from production when it was drilled?

A It was a mile from production.

Q And it showed twenty-seven sixty-five pounds.

A Yes, sir.

Q What do you conclude on the basis of this pressure information, Mr. Kern? What conclusion do you reach by examining this pressure information as to drainage?

A This pressure information illustrates that a well can drain in excess of a hundred sixty acres. We have lowered the pressure a distance of several miles and we can see instances where wells have drained in excess of a hundred sixty acres.

Q Referring to what has been marked as Exhibit Number 6 would you identify that exhibit?

A Exhibit Number 6 is the tabulation of the bottom hole pressure and production history for the entire area that we have outlined. We have shown here all the drillstem tests which we have used in our bottom hole pressure versus cumulative production in a later exhibit and also we have put in here drillstem tests, recorded bottom hole pressures

by conventional bottom hole pressure recording methods to illustrate the validity of the drillstem test.

Q Now, the column headed corrected bottom hole pressure fifty-five hundred feet, should that be a minus fifty-five hundred?

A That should be a minus fifty-five hundred feet.

Q So all the pressures are corrected to --

A To a datum of fifty-five hundred feet.

Q And what does this exhibit indicate to you?

A This is the exhibit used in preparing our exhibit for bottom hole pressure versus cumulative production. It does illustrate a pressure draw-down with cumulative production history which we will see when we get the Exhibit Number 9.

MR. UTZ: These wells are listed in order of completion?

A These are chronologically in order.

Q (By Mr. Kellahin) Now, referring to what has been marked as Exhibit Number 7, would you identify that exhibit?

A Exhibit Number 7 is the tabulation of production from the Lane-Wolfcamp, Middle Lane-Simanola, Jenkins-Cisco, and Vada fields which we have used to come up with a total

area of production and cumulative production used in constructing our curves.

Q And that would be shown further on Exhibit Number 8 and 9, is that correct?

A That would be on Exhibit 9.

Q Now, referring to Exhibit Number 8, would you identify that exhibit?

A Exhibit 8 is a bottom hole pressure versus time plot with the key wells outlined with a red triangle and numbered 1 through 7.

Q Those are the wells which you showed on the Exhibit Number 5, is that correct?

A Those are the same wells. This exhibit shows the pressure draw-down in these drillstem tests with respect to time.

Q This, based on a chronological order in the pool shows a steady decline?

A Steady decline throughout the area.

Q Now, referring to what has been marked as Exhibit Number 9, would you identify that exhibit?

A Exhibit Number 9 is our pressure versus time cumulative curve. We have on here the same key wells outlined with the red triangles and numbered 1 through 7. This

curve illustrates the initial pressure and the pressure draw-down with respect to production from this area.

Q Now, what do you take as the bubble point on this area?

A We believe the bubble point is thirty-two hundred pounds.

Q So you had an immediate drop according to your information to the bubble point?

A That is true.

Q And from there on it followed the consistent pattern in the decline in your opinion?

A It did.

Q At what stage of depletion is this reservoir at the present time?

A We believe this reservoir is approximately eighteen and a half per cent depleted.

Q By that you mean you have produced approximately eighteen and a half per cent of the primary recoverable oil?

A That's right.

Q And give no consideration to any secondary recovery?

A No, that's true.

Q Approximately what percentage of production of the oil in place do you think this pool will recover?

A We estimate that it can recover thirty-five per cent.

Q By primary?

A By primary methods.

Q And already eighteen and a half per cent of the thirty-five per cent has been?

A That's true.

Q Now, based on the information you have and the exhibits which have been presented here, do you reach any conclusions on the nature of this reservoir as to the ability of one well to efficiently and economically drain and develop one hundred sixty acres?

A We believe one well certainly will drain a hundred sixty acres. The data presented shows the continuity of the Bough C zone extending through the entire area and the production from the developed areas has drawn down the pressure into the undeveloped areas as far as three to four miles away. Now, the development of the entire area on a hundred sixty acres will adequately drain the entire reservoir.

Q Now, Mr. Kern, you are asking for the assignment of an eighty acre allowable or four point seven seven factor for proration purposes, is that correct?

A That is true.

Q Have you any reason for not asking for one hundred sixty acre allowables?

A We believe that the equipment in the well will only physically handle the eighty acre allowable.

Q Would the recovery efficiency be any better if you had one hundred sixty acre proration allowables?

A No, it would not be any better.

Q Were Exhibits 1 through 9 prepared by you or under your supervision?

A They were.

MR. KELLAHIN: At this time, I offer in evidence Exhibits 1 through 9 inclusive.

MR. UTZ: Without objection, Exhibits 1 through 9 will be entered into the record of this case.

(Whereupon, Applicant's Exhibits 1 through 9 were offered and admitted in evidence.)

MR. KELLAHIN: That's all I have on direct examination, Mr. Utz.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Kern, referring to your Exhibit Number 9, your last exhibit --

A Yes, sir.

Q -- I notice one of your key wells, Well Number 2 and three others which are in that grouping above your line of decline. Pressures in those wells appear to be almost equal to or a little higher than the two shown over about the two hundred production line. How far away were those wells from the older production? In other words why were they so much higher? Is it because they were further away from the production?

A Right. They were quite a distance from the area that was being produced at that time and there were no withdrawals around that particular well. If you will notice, we have a color coded this according to areas and the Vada, the well that you refer to there on the second dot was in the Vada area. This would have been Union's Well in Section 1, twenty-nine, thirty-four. That was the first well drilled in that area and the second well in that area without any production from that particular area, the second well in that area is the second yellow dot there which is shown as approximately one million four hundred thousand barrels would be the Cactus Well which we have labeled Well Number 3 and there has been a considerable draw-down between those two wells without any production

from that particular area.

Q It is your belief then that these pressure declines are due to production?

A That's true.

Q In other words, you feel the communication in the pool is such that this could have occurred and it's not due to these being various pools?

A No, we believe that this is all interrelated pressure-wise through the entire pool. I believe that these same two wells illustrate that fact with the Cactus Well. First of all, the Union Well in Section 21, 9, 34, then the second well drilled in there with no production from that area, a further draw-down in the Cactus Well of Section 32, 9, 34 where in this graph it looks like about thrity-one fifty to thirty-four fifty, about three hundred pounds draw-down in that area with no production from the area.

Q Let's look at these cross sections a little bit. That would be Exhibits 3 and 4. Now these are all hung on the minus fifty-three hundred datum?

A Yes, sir, that is true.

Q Now, this would indicate no structure, is that correct? In other words, what type of pool is this? Is

it a structure or stratigraphic trap?

A We believe this is a stratigraphic trap with an updip porosity pinchout.

Q On your east west cross section where you actually have an inverted bowl, that is, there is no structure to it, is that right?

A That is true, very little structure on the Exhibit Number 4. The main structure is coming in on the west side as you go up on top of the Lane field over there.

Q And on your north south trending cross section your fourth well from the south which would be the Cities Service State AY 1 --

A Yes, sir.

Q -- is the highest well in your cross section, is that correct?

A That is true.

Q And the wells on each side of that are lower to the south and to the north?

A That is true.

Q This would also indicate no structure and stratigraphic trap, is that right?

A Yes, sir.

Q And you still feel, in view of the fact that these

wells do vary from the datum that they are still connected?

A We do. We believe they are. I might point out at this time that our geologists believe this is normal dipping throughout this area.

Q Now, let's look at your Exhibit Number 2 for a moment. Now, that is contoured on top of the Bough C?

A Yes, sir.

Q And the area that you are asking for to be spaced in this application is roughly in the center of these contours, is that correct.

A Yes, sir.

Q Now, nowhere on your exhibits have you plotted the extent of the pools in this area you have portions of three pools, is that correct?

A Yes, sir.

Q The Lane-Pennsylvanian, Middle Lane, and Vada-Penn?

A Yes.

Q And do you agree that the Lane-Penn is not included entirely in your area but only about half of it?

A Excuse me?

Q Do you agree that the horizontal extent of the

Lane-Pennsylvanian Pool as defined by the Oil Commission, is approximately half to two thirds within the area outlined on your Exhibit 2 and some of the pool is to the north and outside of your area?

A I wasn't familiar with that but I believe that's right. I believe that's true.

Q And in regard to the Middle Lane Pool there is some of that pool to the south of your area requested also, is that correct?

A There is some south of it. That to the south has been developed to date mostly on eighty acre spacing.

Q That is your reason for not including it in the area?

A That is the reason that we have considered this particular area, yes, sir.

Q In other words if I understand you correctly, the area that you have requested here is the area that has not been drilled up on eighty acre spacing or any other spacing?

MR. KELLAHIN: If the Examiner please, I think it includes portions of the Vada-Pennsylvanian Pool which has been drilled on a hundred sixty acre spacing and it omits part of the Middle Lane Pool which has already been developed on eighty acre spacing but includes that portion which has

been drilled up to date on a hundred sixty acre spacing. In our application we ask for spacing of an area including Vada-Pennsylvanian, portions of the Vada-Pennsylvanian Pool, the Lane-Pennsylvanian Pool, and the Middle Lane-Pennsylvanian Pool or in the alternative the deletion of those portions of those pools and their inclusion in the Vada-Pennsylvanian Pool which would automatically make the Vada rules effective for this area.

MR. UTZ: Do you have any information here that would say that these pools aren't designated as they should be? In other words, that we don't have communication in the pools as designated now? Otherwise, the point I am trying to make here is that I don't see how we can include some of these pools within your spacing area and not the rest of them.

MR. KELLAHIN: The only thing I can say is, I agree with you but it's been done.

RE-DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Mr. Kern, would you say that the area involved in this application is one common source of supply?

A I would say that it is one source.

Q Would you say also that it is connected with

and subject to withdrawals from the adjacent pools the Lane, Middle Lane, and Jenkins-Cisco?

A I believe we have shown that.

Q So in effect, it's really all one area, is it?

A That is true.

Q That is a common source of supply in your opinion?

A Yes, sir.

MR. KELLAHIN: I think that's the only answer we could give you, Mr. Utz. As a practical matter if a portion of it has been developed on an eighty acre spacing, we can't undrill those wells and we certainly don't want to interfere with the operation of those wells under the rules they are now operating under but in the interest of economical and orderly development of the balance of the area, we submit that the Commission should adopt one hundred sixty acre spacing here. Now in that connection on the Nomenclature Case set for hearing on January the 17th, I believe it is a portion of this land involved here, let's see, in 10, 33 a part of Section 11 and in 9, 34 portions of Sections 20 and 21 are affected by the Nomenclature Case, Section 11.

MR. UTZ: Quarter section there.

MR. KELLAHIN: Yes, the northeast quarter of Section 11 in 10, 33 is proposed to be included in the Middle

Lane Permo-Penn Pool. The other two, Sections 20 and 21, in nine, 34, are proposed to be included in the Vada-Pennsylvanian Pool. That would be the southeast quarter of Section 20 and northeast quarter of Section 21 and they are advertised for that.

MR. UTZ: Yes.

RE-CROSS EXAMINATION

BY MR. UTZ:

Q Now, Mr. Kern, would you, from the engineering standpoint, can you say whether you think that portions of these pools, as defined and are outside of the area requested here, are drained or in communication with the portion of the pool within the area?

A I believe that the area we have outlined here is in communication, the total area we have outlined. As far as any areas outside of this, I couldn't say they are or aren't in communication with this area. I would believe that the area to the south probably is in communication with this area.

Q Now, you made some cross sections here that go considerably beyond your area, haven't you?

A That is true, we have gone down into the Lane area and according to the cross sections in that area they would

be in communication.

Q Supposing the Commission would act upon your alternative request here consolidating these pools in a logical manner, I presume you are aware that the Commission is reluctant to include non-productive acreage within pool boundaries and this is historically true, so if we should connect these pools in the manner shown by proven production with one hundred sixty acre spacing rules and on one hundred sixty acre spacing rules in the past we have given a two mile limit on the outside of the pool wherein the pool rules must be abided by, the spacing. In other words this protects you within a two mile limit. Would that cover enough area to suit you in your purpose?

A I believe that would be adequate.

Q I haven't made a study of it but I think it would cover more area than you are requesting here.

A I believe it would, too.

MR. HATCH: I think generally it is within one mile of the pool rather than two.

MR. UTZ: On a hundred sixty?

MR. HATCH: Yes, sir.

MR. UTZ: That's six forty. That would go too, then.

MR. HATCH: I believe it's one mile on all of them.

MR. UTZ: Well, say one mile.

A I believe that would be adequate.

Q But you are not contending here that the area defined by the Oil Commission are not all in the same pool. That is each of these three pools here?

A No, sir.

Q You made the statement, I believe, that you believe that you can recover thirty five per cent of the oil in this area?

A Yes, sir.

Q By a primary means?

A That's right.

Q Have you made any study as to how this type of spacing would effect secondary recovery?

A No, we haven't studied that.

Q Is it your contention now that wells drilled on hundred sixty acre spacing will recover oil as efficiently, drainage will be as efficient as the eighty acre spacing?

A Yes, sir. In this particular reservoir, I believe the pressure communication is good enough that you can recover as efficiently on one hundred sixty acre spacing as

you can with the eighty.

MR. UTZ: Are there other questions of the witness? You may be excused.

(Witness excused.)

R. L. HALVORSEN

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

A R. L. Halvorsen.

Q By whom are you employed and in what position, Mr. Halvorsen?

A BTA Oil Producers as chief engineer and general manager.

Q Have you testified before the Oil Conservation Commission and made your qualifications a matter of record?

A I have.

MR. KELLAHIN: Are the witnesses qualifications acceptable?

MR. UTZ: Yes, sir.

Q (By Mr. Kellahin) Mr. Halvorsen, have you made a study of the area involved in the application in Case

Number 3708?

A Yes, I have.

Q Have you prepared some reservoir data on the basis of that study?

A Yes, I have as Exhibit 10.

Q Now, referring to what has been marked as Exhibit 10, would you discuss the information shown on that exhibit?

A The data shown, the reservoir data shown on Exhibit 10 are applicable to this entire trend from the Middle Lane up through the Vada-Penn. Porosity ranged betwen five and ten percent from log calculations with an average of eight per cent. Water saturations are estimated at thirty percent. Formation volume factor from Borden's correlations is one point five and recovery factor is estimated thirty-five percent. This is common for the Bough C reservoir.

Net pay thicknesses range between four feet and twelve feet with an average of ten feet and we have estimated from reservoir pressure data on Exhibit 9 the bubble point in the vicinity of thirty-two hundred pounds. We estimate reservoir abandonment pressure at five hundred pounds. This pressure will range between five hundred and one thousand pounds. For our purposes we used five hundred. Gravity of the oil is forty-six degrees API at sixty degrees

Fahrenheit. Our gas gravity is point eight two five, that's specific gravity. Solution gas oil ratio from well test data is one thousand cubic feet per barrel. From these factors we have calculated oil in place of one hundred ninety barrels per acre foot or a thousand twenty barrels per acre. This put on an eighty acre basis is equivalent of eighty-one thousand six hundred barrels per eighty acres or one hundred sixty-three thousand two hundred barrels for one hundred sixty acres. This assumes that there is no depletion in the reservoir. The data that we have presented here indicates some depletion. To establish the estimated amount of depletion we have used a bubble point at thirty-two hundred and the present average pressure of this reservoir at twenty-seven hundred pounds and we have divided the difference there which is five hundred pounds by the difference between the bubble point pressure and the abandonment pressure which is the difference between thirty-two hundred and five hundred pounds or twenty-seven hundred pounds. This indicates eighteen and a half per cent depletion. Applying this depletion factor to the remaining oil to be recovered, we maintain that as of January 1, 1968, eighty-one and a half per cent of the recoverable

reserves remain so that this would reduce the reserves to eighty acres or for eighty acres to a total of sixty-six thousand five hundred barrels or one hundred thirty-three thousand barrels for one hundred sixty acres.

Q Now, you don't show any permeability factor on this exhibit. Do you have any information on that?

A We had no core data available to us. However, data available on the Inbe field which is probably the south end of this trend, indicates permeability in excess of one hundred millidarcies.

Q Now, you have shown the recoverable oil on one hundred sixty acres as being twice the recoverable oil on eighty acres. Do you agree with Mr. Kern's testimony that the efficiency of operations on a hundred sixty acres will be equal to those on eighty acres?

A I do.

Q Do you think the recovery will be as great as if there were two wells on the unit instead of one?

A I do.

Q Now, referring to what has been marked as Exhibit Number 11, would you discuss that information, please?

for the same cost of development giving net profit of two hundred one thousand dollars. This would be a return of two dollars and fifteen cents per dollar invested. Assuming that our estimates of depletion are correct and valid the total net income for an eighty acre well would be reduced to one hundred fifty-three thousand dollars and would result in a loss of twelve thousand dollars per well and on one hundred sixty acre spacing this total net income would be reduced to three hundred six thousand dollars for net profit of one hundred thirty-one thousand dollars per well which gives a dollar seventy-five return per dollar invested. I think this essentially shows it uneconomical to develop this area on eighty acre spacing.

Q Is that due primarily to the fact that there has already been drainage in this area?

A Even if there were no drainage in this area it would be unattractive economically to drill on eighty acres.

Q If the pressures were virgin?

A That is correct.

Q Were Exhibits 10 and 11 prepared by you?

A Yes, they were.

MR. KELLAHIN: I offer Exhibits 10 and 11 and

I don't believe I offered Exhibits 1 through 9.

MR. HATCH: Yes, they were entered already.

MR. KELLAHIN: I offer Exhibits 10 and 11.

A If I might make a further comment on this economics generally used for this purpose, the working interest income is eighty-seven and a half per cent. There is very few leases up there where the working interest requires eighty-seven and a half per cent. It's usually around seventy-five to eighty per cent of the net income.

Q Do you have any recommendations to make as to the adoption of pool rules, Mr. Halvorsen?

A Yes, I recommend the acceptance of one hundred sixty acre spacing pattern for this entire area as developed, if the Commission prefers, and that each well should be located within one hundred fifty feet of the center of any Governmental quarter quarter section and that the standard proration unit of a hundred sixty acres be assigned the four point seven seven allowable factor.

Q Are those the same rules that are in effect on the Vada-Pennsylvanian Pool?

A Yes, they are.

MR. KELLAHIN: I don't believe 10 and 11 were

admitted yet.

MR. UTZ: Without objection, Exhibits 10 and 11 will be entered into the record of this case.

(Whereupon, Applicant's Exhibits 10 and 11 were offered and admitted in evidence.)

MR. KELLAHIN: That's all I have on direct examination.

CROSS EXAMINATION

BY MR. UTZ:

Q Referring to your Exhibit Number 11, your economics --

A Yes, sir.

Q -- assuming no depletion of reserves on your eighty acre basis, you would have a net profit of thirteen thousand.

A That's correct.

Q And the next one do I understand that that is the depletion of reserves that has already occured?

A Yes, sir. This assumes that eighty-one and a half per cent of the reserves remain at this time.

Q So, on eighty acres there would be a twenty-five thousand dollar difference in income due to the current depletion of reserves?

A That is correct.

A Exhibit Number 11 reflects economics of drilling for oil in this reservoir. A gross income for oil and gas is three dollars and twenty cents a barrel. Assuming a normal royalty interest of twelve and a half per cent leaving a working interest income at eighty-seven and a half per cent, this gives two dollars and eighty cents per barrel operating cost and taxes are fifty cents a barrel so that the net working interest income is two dollars and thirty cents per barrel.

Applying these income figures to the reserves established on the previous exhibit, it shows that the total net income for a well drilled on eighty acres assuming no depletion of reserves, no previous depletion of reserves, one hundred eighty-eight thousand dollars. Development cost per well is one hundred seventy-five thousand dollars per well. So therefore the net profit on eighty acre spacing would be only thirteen thousand dollars per well. This gives a ratio of income to investment of 1.07 which is essentially a money back deal.

On one hundred sixty acre spacing the total net income would be three hundred seventy-six thousand dollars

Q It seems a little high;since you figured them I guess you would know. And on the hundred sixty acre spacing due to the reserves that have already been depleted you would go from a two point fifteen ratio of income to investment to one point seventy-five.

A Yes.

Q You have no idea of what the permeabilities are in this reservoir except by your pressure drop method. Is that about the way it boils down?

A That is correct.

Q You have made no calculations on -- well, I can't think of the methods right now but no calculations based on this pressure drop as to what the permeability might be?

A No, I have not. Actually the only restriction to our productivity is mechanical condition of the well. That is, if we could install large enough pumps in these wells which virtually all these wells in this trend produce some water and they have to be pumped, if we could install large enough equipment in there, we could produce any volume of fluid we wished. So this indicates a tremendous PI productivity index which would reflect excellent permeability.

Q Do you happen to know what percentage of wells in this area are marginal?

A Are marginal?

Q Yes. That is, would be marginal under your proposed eighty acre allowable.

A So far as I know, none of them are. In other words they are all capable of producing very close to the eighty acre allowable. BTA has one well in this area that is situated in the Section 1, 10, 33. It is the re-entry of the Cities Service AY State. That well only produces four hundred barrels of oil a day. Excuse me. Forty barrels of oil per day with about nine hundred barrels of water per day. However, we expect that the well will improve in its oil productivity. It could be considered a marginal well at the present time.

Q I believe you said that consolidation of these pools with the one mile provision would probably be satisfactory as far as you are concerned?

A Yes, sir. It would meet, I believe, our requirements or our desires to develop this thing, this area on an orderly hundred sixty acre pattern.

Q I'm not sure what your application reads and I don't think it's been brought out here, but you are requesting temporary rules, are you not?

A We are requesting temporary rules for this area, enclosed in red for establishment of permanent rules in the

Vada area, is that correct?

MR. KELLAHIN: Yes.

A With the Vada rules to be extended to include this area, the balance of the production in this area.

Q It would be a little difficult to have temporary rules in part of it and permanent rules in the rest of it in the same pool?

MR. KELLAHIN: If the Examiner please, I think our application proposes in the alternative.

MR. UTZ: Are there other questions of the witness? Witness may be excused.

(Witness excused.)

MR. UTZ: Statements in this case.

MR. JORDON: Mr. Examiner, J. B. Jordon, Union Oil Company of California at Roswell and I would like to state that Union supports BTA's application for one hundred sixty acre spacing and the eighty acre allowable.

MR. UTZ: Mr. Morris.

MR. MORRIS: Mr. Examiner, although Midwest has no testimony to offer in this case, we would like to clear up one matter of evidence that came up during the presentation by BTA that concerns one of Midwest's wells in Section 10 down in the southwest corner of the pool. The Well Number 1

in the extreme southeast corner of Section 10 is temporarily abandoned due to mechanical difficulties. Midwest's position in this case is simply that as the owner of a substantial portion of the acreage that is involved in the application, it whole-heartedly supports the application of BTA in this case.

MR. UTZ: Are there other statements?

MR. HATCH: The Commission has received a telegram from the Southland Royalty in support of the applicant.

MR. UTZ: Other statements. The case will be taken under advisement and we will have a ten minute recess.

(Recess.)

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, KAY EMBREE, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

Witness my Hand and Seal this 30th day of January, 1968.

Kay Embree
NOTARY PUBLIC

My Commission Expires:

November 19, 1971

I do hereby certify that the foregoing is a complete record of the proceedings in the examiner hearing of Case No. 3725, heard by me on 1-10-68.

....., Examiner
New Mexico Oil Conservation Commission

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JASON W. KELLAHIN
ROBERT E. FOX

TELEPHONE 982-4315
AREA CODE 505

December 14, 1967

Case 3708

MAIN OFFICE OCC

'67 DEC 15 AM 8 25

The Oil Conservation Commission
of the State of New Mexico
Post Office Box 2088
Santa Fe, New Mexico

Re: IN THE MATTER OF THE APPLICATION OF BTA OIL PRODUCERS FOR ADOPTION OF SPECIAL RULES, LEA COUNTY, NEW MEXICO

Gentlemen:

Enclosed you will find original and two copies of the above application.

Please set this down for hearing.

Yours very truly,

Jason W. Kellahin

JASON W. KELLAHIN

jwk;peg
Enc.

DOCKET MAILED

Date 12-28-67

BEFORE THE

OIL CONSERVATION COMMISSION OF NEW MEXICO

MAIN

IN THE MATTER OF THE APPLICATION OF BTA OIL PRODUCERS FOR ADOPTION OF SPECIAL RULES, LEA COUNTY, NEW MEXICO

'67 DEC 15 AM 8 25

A P P L I C A T I O N

Comes now BTA OIL PRODUCERS and applies to the Oil Conservation Commission of New Mexico for the adoption of special rules for an area in Lea County including the Vada-Pennsylvanian Pool, Lane-Pennsylvanian Pool and a portion of the Middle Lane-Pennsylvanian Pool, covering and including the following-described lands, to-wit:

Township 10 South, Range 34 East, N.M.P.M.

N/2 Section 16, N/2 Section 17, N/2 Section 18
All of Sections 4, 5, 6, 7 and 9

Township 10 South, Range 33 East, N.M.P.M.

All of Sections 1, 2, 3, 10, 11 and 12
N/2 Section 13, N/2 Section 14, N/2 Section 15

Township 9 South, Range 33 East, N.M.P.M.

All of Section 36

Township 9 South, Range 34 East, N.M.P.M.

All of Sections 15, 16, 17, 18, 19, 20, 21, 22, 27, 28, 29, 30, 31, 32 and 33

all as shown within the area outlined in red on the plat attached to this application and made a part hereof, or in the alternative, the deletion of lands from the Lane-Pennsylvanian and Middle Lane-Pennsylvanian Pools and their inclusion in the Vada-Pennsylvanian Pool.

Applicant proposes the adoption of 160-acre proration units for the entire area for each well completed or

recompleted in the Bough "C" zone of the Pennsylvanian formation or within the above-described area or within one mile thereof, with each 160-acre proration unit to be assigned an 80-acre proportional factor of 4.77 for allowable purposes.

Applicant proposes that said rules, as presently contained in Commission Order No. R-3179-A be made permanent for the above-described area, or that in the alternative, said area be treated as one pool for development purposes and temporary orders be adopted for the entire area to assure uniform development of the Pennsylvanian formation.

In support of this application, applicant would show said order is necessary to prevent the economic loss caused by the drilling of unnecessary wells, to avoid the augmentation of risk arising from the drilling of an excessive number of wells and to otherwise prevent waste and protect correlative rights, and that in the area described in this application, one well will efficiently and economically drain and develop a proration unit of 160 acres.

WHEREFORE, applicant prays that this matter be set for hearing before the Commission or its duly appointed examiner, and that after notice and hearing as required by law, the Commission enter its order adopting the rules prayed for.

Respectfully submitted,

BTA OIL PRODUCERS

BY: James W. Kellahin

Kellahin & Fox
Post Office Box 1769
Santa Fe, New Mexico

ATTORNEYS FOR APPLICANT

C. W. TRAINER

PHONE 397-1518 or 393-9716 P. O. BOX 1100

HOBBS, NEW MEXICO 88240

January 8, 1968

New Mexico Oil Conservation Commission
Santa Fe, New Mexico

GMH

Letter was not read into the record as it arrived after the hearing.

Re: BTA hearing for 160 acre
spacing - 80 acre allowable
Vada - Lane Bough "C" area
Lea Co., N.M. 1-10-68
Docket 168 Case 3709

Gentlemen:

I wish to support BTA because Superior Oil Company et al, I am one of the et als, completed our Hutcherson Unit #1 in NE/4 NW/4 Sec. 27-9S-34E last month to find that severe drainage had already occured. Our well is over 1 mile from any production and more than 2 miles from any appreciable accumulative production. Our DST bottom hole pressure in the new well was about 800 psi lower than the DST pressures on the same zone in the two old dry holes within a mile. I believe a current pressure measurement on these old wells would now show a similar decline.

Superior has asked that our lease be included in the Vada Field which will make it subject to this rule in any event. The BTA request should be granted to promote conservation and protect correlative rights in this thin, highly permeable reservoir.

Yours very truly,

C W Trainer

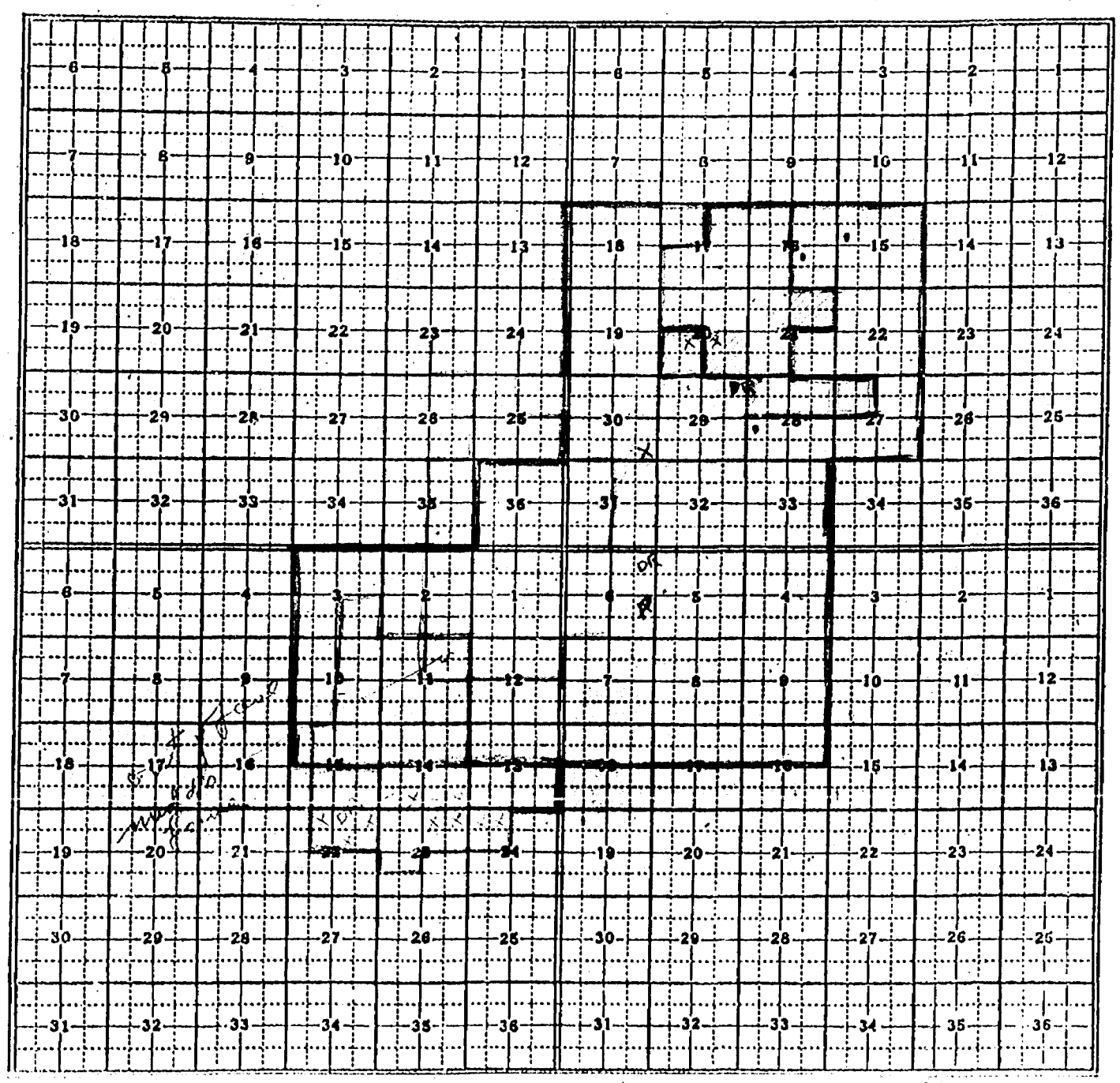
C. W. Trainer

_____ County, _____

Township_____ Range_____ Township_____ Range_____

Township_____ Range_____ Township_____ Range_____

Form 104—(Four on Township)



LANE TO VADA TREND

BHP AND PRODUCTION HISTORY

COMPANY & WELL	DATE	LOCATION S-T-R	CORRECTED BHP (5500')	CUMULATIVE AREA OIL PRODUCTION BBL.
Sunray #1-F	12/10/55	1-10-33	3,623	
Sunray #2-F	4/9/56	1-10-33	3,583	18,778
Sunray #1-I	7/5/56	36-9-33	3,577	39,045
Aztec #1-LW	9/1/56	2-10-33	3,520	59,788
Tenneco "Lane Unit" #1	11/22/56	1-10-33	3,366	116,105
Cities Service #1-AY	1/28/57	1-10-33	3,378	165,129
LL & E Midwest #1	9/28/62	14-10-33	3,354*	
LL & E Midwest #1	10/8/62	14-10-33	3,178	1,021,575
Amerada Anderson #1	5/6/63	30-9-35	3,409	1,030,988
Union #1-21	6/1/63	21-9-34	3,454	1,037,287
Midwest #1-B	7/3/64	11-10-33	3,046	1,043,612
Del Apache "Hileman Est" #1	5/15/65	24-9-34	3,346	1,285,134
Midwest Skelly St. #1	8/3/65	10-10-33	2,802*	
Del Apache	8/13/65	25-9-34	3,313	1,346,776
Cactus #1	8/22/65	32-9-34	3,161	1,374,339
Superior "Mannsey" #1	10/23/65	24-9-34	3,170	1,439,754
Amerada "Ainsworth" #1	2/6/66	25-9-34	3,131	1,548,394

COMPANY & WELL	DATE	LOCATION S-T-R	CORRECTED BHP (5500')	CUMULATIVE AREA OIL PRODUCTION BBL.
Del Apache "SE Anderson" 1-A	2/10/66	19-9-35	3,140	1,560,142
Del Apache "SE Anderson" 1	5/23/66	30-9-35	3,092	1,765,256
Enfield #1	10/8/66	28-9-34	2,932	2,049,887
Midwest #1	10/18/66	20-9-34	3,121	2,139,415
Midwest State A #1	1/12/67		1,819*	
Cabot #1	1/27/67	20-9-34	2,933	2,428,515
Midwest I #1 (Humble AM #1)	7/29/67	11/10/33	2,831*	
Ralph Lowe D #1	8/10/67	16-9-34	2,750	3,173,924
C. B. Reed #1	8/10/67	3-10-33	2,960	3,173,924
BTA Vada A #1	10/7/67	21-9-34	2,764	3,546,677
BTA Vada A #1	10/11/67	21-9-34	2,534*	
Midwest State J #1	10/14/67	11-10-33	2,144*	
Midwest State K #1	10/21/67	2-10-33	2,698*	
BTA Lane A #1	10/21/67	21-9-34	2,915*	
BTA Vada B #2	11/13/67	20-9-34	2,567*	
Midwest Skelly St. #2	11/15/67	10-10-33	1,732*	
BTA Vada B #2	11/21/67	20-9-34	2,555	
BTA Vada C #3	11/26/67	21-9-34	2,624*	
BTA Vada C #3	11/30/67	21-9-34	2,600	
BTA Anderson A #1	12/6/67	6-10-34	2,821*	
BTA Anderson A #1	12/11/67	6-10-34	2,715	

- - - - Estimated Production - - - -

COMPANY & WELL	DATE	LOCATION S-T-R	CORRECTED BHP (5500')	CUMULATIVE AREA OIL PRODUCTION BBL.
BTA Max #1	12/11/67	30-9-34	3,035*	Estimated Production
BTA Lane C #4	12/14/67	6-10-34	2,868	
BTA Lane C #4	12/19/67	6-10-34	2,888*	
Superior Hutcherson #1	12/20/67	27-9-34	2,818	
BTA Max #1	12/20/67	30-9-34	3,014	
BTA Vada D #4	12/26/67	28-9-34	2,693*	3,846,677

* Indicates Conventional BHP Recording.

MIDDLE LANE TO VADA (PENN) TREND

RESERVOIR DATA

POROSITY	Range	5-10%
POROSITY	Average	8%
WATER SATURATION	Estimate	30%
FORMATION VOLUME FACTOR		1.50 (Borden's Correlation)
RECOVERY FACTOR	Estimate	35%
NET PAY	Range	4-12'
NET PAY	Average	10'
BUBBLE POINT - EST.		3200' (From Reservoir Pressure Performance)
RESERVOIR PRESSURE @ ABANDONMENT		500
OIL GRAVITY		46° API @ 60°
GAS GRAVITY		0.825
SOLUTION GOR		Est. 1000 CF/Bbl.
OIL IN PLACE		$= \frac{7758 \times 0.08 \times 0.70}{1.50}$
		= 290 Bbl/Acre Ft.
ESTIMATED ULTIMATE RECOVERABLE OIL		= 290 x 35% or 102 Bbl/Acre Ft.
		= 102 x 10' or 1020 Bbl/Acre
		= 81,600 Bbl/80 Acres
		=163,200 Bbl/160 Acres
ESTIMATED % DEPLETED		$= \frac{3200 - 2700}{3200 - 500} \times 100$ or 18.5%
THUS RECOVERABLE OIL @ 1/1/68 @ 81.5% is:		= 66,500 Bbls/80 acres
		=133,000 Bbls/160 Acres

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 12
CASE NO. 3708

MIDDLE LANE TO VADA (PENN) TREND

ECONOMICS

GROSS INCOME (OIL & GAS)	$3.20/Bbl.
WORKING INTEREST INCOME @ 87.5%	2.80/Bbl.
OPERATING COSTS AND TAXES	0.50/Bbl.
NET WORKING INTEREST INCOME	$2.30/Bbl.

ASSUMING NO DEPLETION OF RESERVES:

ACRES PER WELL	80	160
ESTIMATED RECOVERY - BBLS	81,600	163,200
TOTAL NET INCOME	$188,000	$376,000
DEVELOPMENT COST PER WELL	$175,000	$175,000
NET PROFIT PER WELL	$ 13,000	$201,000
RATIO OF INCOME TO INVESTMENT	1.07	2.15

ALLOWING FOR ESTIMATED DEPLETION OF RESERVES:

ESTIMATED RECOVERY - BBLS	66,500	133,000
TOTAL NET INCOME	$153,000	$306,000
DEVELOPMENT COST PER WELL	$175,000	$175,000
NET PROFIT (LOSS) PER WELL	($ 12,000)	$131,000
RATIO OF INCOME TO INVESTMENT	0.87	1.75

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 11
CASE NO. 3202