CASE 5493: TEXAS WEST OIL & GAS CORPORATION FOR COMPULSORY POOLING, LEA COUNTY, NEW MEXICO

CASE NO.

5493

APPLICATION,

TRANSCRIPTS,

SMALL EXHIBITS,

ETC.

NEW MEXICO OIL CONSERVATION COMMISSION

COMMISSION HEARING

SANTA FE, NEW MEXICO

Hearing Date OCTOBER 23, 1975 TIME: 9:00 A.M.

NAME	REPRESENTING	LOCATION
Jason Kellahin	Continental Oil Co	Santa Fe
[illegible]	Texas West [illegible]	Roswell
Harold Hensley	" "	"
J. Scott Hickman	Texas West	Midland, Tex
Gordon Page	Office of State Geologist	Santa Fe
[illegible]	Conoco	Hobbs
JAIME A. LESCARBOURA	CONOCO	PONCA CITY, OK.
RONALD McWILLIAMS	CONOCO	HOBBS
Victor T. Lyon	"	"
William J. [illegible]	Phillips Petr. Co	Odessa, Texas
Fred Dischler	Texas West O & G	Midland, Tex
PAUL THOMPSON	CONOCO	Hobbs
[illegible]	Texas West O&G	Midland
Fred O. [illegible]	Conoco	Houston, Tex.
Mildred A. Broman	Part owner Seyashwest [illegible]	Santa Fe

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
October 23, 1975

COMMISSION HEARING

IN THE MATTER OF:

Application of Texas West Oil & Gas Corporation for compulsory pooling, Lea County, New Mexico. CASE 5493

BEFORE: Joe D. Ramey, Director
Emory C. Arnold, Member

Daniel S. Nutter
Richard L. Stamets

TRANSCRIPT OF HEARING

APPEARANCES

For the New Mexico Oil Conservation Commission:	Thomas Derryberry, Esq. William F. Carr, Esq. Legal Counsels for the Commission State Land Office Building Santa Fe, New Mexico
For the Applicant: (Texas West)	Clarence Hinkle, Esq. Harold Hensley, Esq. HINKLE, BONDURANT, COX & EATON Attorneys at Law Hinkle Building Roswell, New Mexico
For the Protestant: (Continental)	Jason Kellahin, Esq. KELLAHIN & FOX Attorneys at Law 500 Don Gaspar Santa Fe, New Mexico Fred Hull, Esq. Continental Oil Company Houston, Texas

I N D E X

EXHIBIT INDEX

EXHIBIT INDEX CONTINUED

MR. RAMEY: The Hearing will come to order. We will take the first Case on the docket at this time.

MR. CARR: Case 5493, application of Texas West Oil & Gas Corporation for compulsory pooling, Lea County, New Mexico.

MR. RAMEY: We ask for appearances at this time.

MR. HINKLE: If the Commission please, Clarence Hinkle and Harold Hensley, Hinkle, Bondurant, Cox and Eaton, appearing on behalf of Texas West.

MR. KELLAHIN: If the Commission please, Jason Kellahin, Kellahin and Fox, Santa Fe, appearing on behalf of Continental Oil Company and in association with me, Mr. Fred Hull of Houston, Texas, who is a member of the Texas Bar.

MR. RAMEY: Any other appearances?

May I ask that all of the witnesses stand and be sworn at one time, please?

(THEREUPON, the witnesses were duly sworn.)

MR. HINKLE: We have fourteen exhibits, I believe it is, isn't it? Here is the original set. The rest of them will be in here in just a minute, he is putting them in order.

MR. RAMEY: That will be fine.

(THEREUPON, a discussion was held off the record.)

MR. RAMEY: You may proceed, Mr. Hinkle.

MR. HINKLE: If the Commission please, the application

that is before the Commission today was originally filed when we had an Examiner's Hearing, and at that time and at the subsequent hearing de novo, I made a motion that referenced to J. M. Clark and Dale M. Thompson be deleted from the application. In the original application these parties were mentioned as having a small interest that was not committed to the Bell Lake Unit. After the application was filed, we learned that these interests had been committed to the Unit. Because this is a separate record, to also show that these interests have been deleted from the application.

MR. RAMEY: Okay.

L. M. DUNNAVANT

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

DIRECT EXAMINATION

BY MR. HINKLE:

Q. State your name, and your residence.

A. My name is L. M. Dunnavant, I'm president of Texas West Oil & Gas Corporation whose business address is 609 Midland National Bank, Midland, Texas.

Q. What is your connection with Texas West?

A. I am president of the corporation.

Q. Are you a petroleum engineer and geologist?

A. Yes, sir, I am, I'm a petroleum engineer.

Q. State briefly your educational background and your experience as a petroleum engineer?

A. I was graduated from Oklahoma State in 1954 with a B. S. in engineering. After graduation I was with Phillips Petroleum Company for four years as an engineer trainee and petroleum engineer. I then joined Arco Oil Corporation in Midland, Texas for three years as a petroleum engineer and coordinator of engineering and geological. After that I was with Rodman, an oil corporation, for four years as production manager. I was co-founder and manager of operations of Southwestern Natural Gas in 1965; co-founder and manager of operations for Western States Producing Company in 1969. I became independent and formed Texas West Oil & Gas Corporation in June of 1971.

Q. Are you familiar with the area that is involved in this Case?

A. Yes, sir, I am.

Q. Have you had any experience in drilling operations in the area?

A. Yes, sir, quite extensive.

MR. HINKLE: Are the qualifications of the witness acceptable?

MR. RAMEY: Yes, they are.

Q. (Mr. Hinkle continuing.) Are you familiar with the application of Texas West in this Case?

A. Yes, sir.

Q. What is Texas West seeking to accomplish?

A. Texas West is requesting compulsory pooling of all of the mineral intersts in the Pennsylvanian formation underlying the east half of Section 5, Township 24 South, Range 34 East. This is referred to as the South Bell Lake Field area in Lea County, New Mexico.

The acreage is to be dedicated to a well to be drilled at an orthodox location, nineteen eighty from the north and east lines of Section 5.

Texas West is seeking further considerations for the cost of drilling and completing this well and the allocation of those costs, as well as the operating cost and the cost for supervision.

Q. As well as being designated the operator?

A. Texas West is requesting to be designated as operator and further that the maximum risk factor allowed by statute be applied in the drilling of this well.

Q. Have you prepared or has there been prepared under your direction certain exhibits for introduction in this Case?

A. Yes, several exhibits.

Q. These are the ones that have been marked One through Eight?

A. Yes, sir.

Q. Refer to Exhibit One and explain what this is and what it shows?

A. Exhibit Number One is a structure map based on top of the Morrow formation. It reflects the producing wells, producing from the Morrow and the Bell Lake area and the Antelope Ridge area.

It also reflects the proposed location of Texas West Oil & Gas Corporation in the east half of Section 5, and the acreage to be pooled is colored yellow, which reflects the east half of Section 5.

Q. Does this show the outlines of the Bell Lake Unit and the Antelope Ridge Unit?

A. Yes, sir, it does.

Q. The east half of 5 as given within the boundaries of the Bell Lake Unit?

A. Yes, sir.

Q. Do you have any further comments with respect to Exhibit One?

A. Exhibit Number One really is presented to merely show the structural configurations of the area involved. Actually this map -- you can go from the east to the west and north to south and you see Morrow production high on the structure, you see Morrow production lower on the structure. However, you look in here and you can see some wells that are not completed in the Morrow, surrounded by wells lower on the

structure that are producing from the Morrow. In other words, you can get high and have a pinch out of the sand that would be nonproductive. In some cases you can be low and get a dry hole or a noncommercial well. Structure doesn't really mean too much as far as the Morrow formation is concerned. It may or may not be a factor, you cannot depend on it. On any other formations ordinarilly you can depend on structure to show you or indicate productive prospects. Here we are looking at a different animal, you cannot use structure as a guide in picking locations or predicting productivity.

Q. Refer to Exhibit Number Two and explain what this is and what it shows?

A. Exhibit Number Two is a cross section running from the west side of the Bell Lake Field which is represented by Continental Bell Lake Unit Number 5 well and extending over through our proposed location in the east half of Section 5, continuing on over to the easternmost well or location, which is on the east side of the field, which is Texas West Oil & Gas Corporation State Number 1 well.

This cross section is really an important exhibit because it really shows the heterogeneous nature of this reservoir that we are working with; it shows the lenticularity of the Morrow sands that are involved and are contained in what we call the Morrow formation.

Starting over on the west side in Continental's

Bell Lake Number 5 well, this was, under current-day prices, what would be a commercial well, and from the Number Four zone produced two point seven billion cubic feet of gas and it is my understanding that this well is now plugged and abandoned.

Going to the second well east of the Number 5 well, we have a --

Q. That's in Section 6?

A. That is in Section 6, the northwest quarter of Section 6. We have a complete absence of productive sands in the Morrow formation.

We also want to point out here that in going across the -- using these wells in this cross section, that we include a couple of wells that I think dwell on the risk involved in drilling down to the Morrow sands. There are many variable risk factors involved in drilling the Morrow sand, but there is a great deal of risk involved in just getting down to it, which is one of those.

Now this Number 4 well blew out after reaching the Morrow, and actually the well north of this particular well, which is not shown on the cross section, in the same section, referred to as Continental's Number 1, it also blew out. But you can see in this particular well, we have no productive sands, they are all tight or pinched out and have not been production tested or drill stem tested to our knowledge.

Going on over to the east --

MR. RAMEY: Excuse me, Mr. Dunnavant, you say these wells blew out before they got to the Morrow?

MR. DUNNAVANT: This well here did, yes, sir, and I think the Number 4 did too, I'm not sure. I know this well blew out and burned. The Number 1 well did blow and burned the rig.

MR. RAMEY: It didn't blow out in the Morrow zone?

MR. DUNNAVANT: No, sir, not in the Morrow, no, sir.

MR. RAMEY: Thank you.

A. (Continuing.) Continuing across with the cross section, going down to southeast and the northeast quarter of Section 7 to Continental's Number 16 well. Here we have a well that is producing from the Number Two sands, as I think correlates with Continental's description of the Number Two, the location of the Number Two sands.

This is an interesting well, due to the fact that in the previous hearings this lower Number Four zone had not been tested out. We did have testimony presented by Mr. McWilliams and Mr. Lyons, whereby they stated they had evaluated this Number Four zone from the logs, and they expected it to produce from the Number Four zone and that also the bottom-hole pressure would prove it to be the same reservoir as the Number 14 well is completed in.

Q. Number 14 is in Section 5?

A. In Section 5, in the northeast. Well, it didn't prove out that way. The Number Four zone tested water through perforations, and as you can see at the bottom of that particular log it does give you the details on it. They perforated that particular zone, the lower-most zone and it flowed six barrels of water per hour with a small spray of gas.

They perforated the next zone above it, which is from fourteen thousand, oh twenty-one to thirty-four, part of the same zone, the Number Four zone. It flowed a small amount of gas for six hours and they set the bridge plug and came on back up to the Number Two zone which had a calculated open, a reported open flow of fourteen million, four hundred and ten thousand.

Well, I think Mr. McWilliams previously testified that it is impossible to predict the size of a Morrow lense from looking at log data alone. Pressure and production data are necessary before the reserves can be established with any degree of accuracy.

There he is talking about reserves and I certainly agree with Mr. McWilliams, we can't even determine if the sand is productive with the logs in hand and all of the updated technical knowledge we have in calculating the factors in the Morrow sands.

This is just, I think, further proof that the Morrow sand is a different animal, that even when you have the logs

in hand, the samples in hand, you drill through it, you have the samples, you have all of the shows, you don't know what you've got until you perforate it and test it, and I think this has been proven pretty much in this well.

Continuing on across with the cross section, we go on over to Continental's Number 14 well. This is a west offset to our proposed location. This well is completed in the Number Four zone. It is a very prolific well, it has a very well developed sand. It also has a prospective zone, which would be the Number Two zone, which has not been tested to my knowledge.

Continuing on across over to our proposed location, we are hoping here again that this little diagrammatic sketch we've got in here pretty well represents what our location -- what our structural position will be when we drill the well, but this again is speculation.

We continued the cross section on over to Shell's Antelope Ridge Number 5 in the southwest quarter of Section 33, which is a dry hole, and in all zones in the Morrow. This well calculated water in the Fourth Zone, which has a beautiful sand development, as you can see.

The interval from thirteen thousand, nine ninety, we've got it colored yellow, the lower-most zone, to fourteen thousand and sixty is a beautiful sand development, but it is calculated at a hundred percent water.

Here again we are going by log interpretation. They didn't think enough of it to even set casing down to that point, they set casing at the top of that sand, and I can assure you, gentlemen, if it had been me I would have run casing down there another couple hundred feet and put a couple of holes in it and just tested it because here again we are talking about log interpretations and depending on logs to tell us what the Morrow sand will do and it just won't do it.

They came back up to the upper-most interval and which would be zone Number Two and this well tested water through perforations. And this is rather interesting, gentlemen, because going across here, as far as the Number Four zone is concerned, going back to the west across this cross section we have the Number Four zone developed and productive and commercial under current day prices in the Number 5 well, yet we come due east of it to a well that has no productive Morrow sand and it is surrounded by commercial wells.

We continue on over to Continental's Number 16 well, it has a beautiful fourth sand. It tested water. We come up to and had the Number Two zone as productive in that Number 16 well.

Going on up to the Number 16, the Number Four sand is beautifully developed and prolific. Taking that same Number Four sand up to the Number 5 well, it is wet.

This is interesting, because here you have a

situation where these zones, structure may or may not mean anything. Direct offsets produce water, inside locations have no productive sands as the Number 4 well indicated, very erratic.

Continuing on with the cross section, we go over to Shell's BE Number 1, which it was originally called, which I think has been changed to the Four Number 2. It is the northeast well in the northeast quarter of Section 4. Now this well is an important well also. This is due east of our proposed location, almost due east, and due east of Continental's Number 14 well, yet this well is completed in the Number One zone and has been a very prolific well.

The Number Two zone, the Number Four zone that are producing over west over here and that is so beautifully developed up in the Number 5, is not present at all in this well. We cannot correlate -- there may be remnants of it, but I tell you, you have to use a great deal of tolerance in showing a remnant of any of those sands.

Here we have got a situation going from the Number 16 to the Number 14 to the Shell Number 5 where these Number Four sands and Number Two sands are beautifully developed, just in a northeasterly direction, and yet you go from the Number 14 well due east, over here to Shell's BE Number 1, and these sands are not developed at all. This certainly indicates that there is a pinch out somewhere between the

Continental Number 4 and the BE Number 1. We don't know where that occurs. We certainly hope that Continental is right and it is way over here somewhere, way east of us, because we think that we have a good location, but again it is the nature of the animal we are working with.

And then we go on over to the east side of the Antelope Ridge Field to Texas West Oil & Gas Corporation State Number 1 well. It is located in the northwest quarter of Section 2. This, gentlemen, has been an expensive well, and a nightmare in trying to get production established. This is another well that blew out before ever reaching the Morrow sand. The well blew out at approximately twelve thousand, two hundred and eighty-two feet. It was necessary for us to set a five and a half inch liner, perforate the Atoka, deplete it and then deepen the well to test out the Morrow sand, which was a financial disaster.

As you can see, we perforated several sand zones in this particular well. We worked on this well for approximately six months attempting to establish production. We did a lot of perforating and squeeze cementing work, which you have to do sometimes and a liner job, we realize this.

We had some beautiful sands which correlated with the north and south offsets. This well is producing less than forty thousand cubic feet of gas per day, and we are preparing to plug and abandon the Morrow to come back up and

try upper zones which are pretty slim above the Morrow.

This is rather interesting looking at this whole cross section, gentlemen, because if you look at it, we have seven wells appearing on the cross section. Of the seven wells, two of them blew out, two out of seven.

If you wanted to, if we had swung our cross section a little bit to the north to include Continental's Number 1 well, we would have had eight wells and three out of eight blew out.

The Morrow sand itself is unpredictable even with all of the advanced technology that we have now days, but just getting down to the Morrow sand out here in this area is an expensive price, expensive and very risky.

Mr. Hinkle, I have another cross section as a follow-up to this.

Q. All right, refer to Exhibit Three and explain that.

A. Exhibit Number Three is a three-well cross section running from south to north and includes our State Two Number 2 in the south half of Section 2, which is a commercial well. At our State Two Number 1, which I previously mentioned on Exhibit Number Two, which is a noncommercial well, on up to the north, our Thirty-five Number 1 in Section 35 which is also a commercial well.

The well you see down to the south is Penroc's well, it is a noncommercial.

Q. You are referring to the little insert?

A. To the little insert at the top. Penroc's well is a noncommercial well also.

This cross section is presented, gentlemen, just to show you the unpredictable nature of these Morrow sands.

The well, our State Two Number 2, the first well we see on the cross section, has four of the five sands open that we have completed, perforated, in our One Number 1 well which is the second well shown on the cross section.

Q. Are these Texas West wells?

A. All three of them are Texas West wells.

The zones are correlative from the Two Number 2, the first well, to the second well which is our State Number 1. And as you can see on our State Number 1, which is the second log, these sands are beautifully developed. Some of them much better than what we had in the first well which is the Two Number 2.

Well, going on to the north most of these, at least three of the correlative sand bodies are perforated in the well. We can correlate all zones in that well back to our One Number 1, and the sands are of comparable quality, they appear to be on the logs, but here again we are talking about log interpretation and some other things that are not applicable, are not real reliable in working with the Morrow sands.

This well, of course we have explained about the blow out, we have explained that here is a situation where you have got a gut cinch. This well is located sixteen hundred and fifty feet from the State Two Number 2 to the south of us, it has all of the zones present, even before it was drilled it should have been a gut cinch, yet it turned out to be a dry hole and a financial and economic disaster.

Q. Do you have anything further with respect to Exhibit Three?

A. No, sir.

Q. Refer to Exhibit Number Four and explain what this shows?

A. All right, sir.

Gentlemen, Number Four is what we are referring to as an Individual Well Data Map and has pertinent information on all wells which drilled to and tested the Morrow formation, drilled to and/or tested the Morrow formation. It is color coded down at the bottom. The green, solid green, refers to producing Morrow wells; the green circle refers to testing; the red circle refers to blow outs, wells that blew out or encountered serious and hazardous drilling or completion problems; and orange represents noncommercial or dry holes in the Morrow.

Gentlemen, going from the north, starting at the north we have, if you will notice, in Section 19 up on the

northwest side of the map, the well in the northwest quarter of Section 19 the Morrow was tested, it was tight and non-commercial. Going on across due east to Section 21, Great Basin Petroleum's well in the southwest quarter of 21 is a prolific Morrow well, but this well encountered tremendous completion problems. They split the casing; they split the tubing; and had quite a bit of remedial work to do. I think it probably lasted in the order of sixty to ninety days before they got the well completed. It was a very hazardous situation at the time, very hazardous condition to those who were working on it and to the economics of the well itself.

Over in Section 22, in the northeast quarter, we have the Morrow was drill stem tested noncommercial. In the southwest quarter the Morrow was tested -- water. Continuing on down in Section 27, we have a commercial well. Going on over west, back west to Section 29, Great Basin is now testing their well up in the northeast quarter of Section 29. Now this well was questionable with the last report we had, it was making approximately a half a million cubic feet of gas per day with fifty-two barrels of water per day. We don't know if that is load water or what, we don't have any current reports on it.

On over in Section 30 the Morrow drill stem tested six hundred feet of gas-cut mud, noncommercial.

Going down to the south and back over to the east

to Section 3, which is Shell's Number 5 well, in the southwest quarter, noncommercial, water.

Going on over to the east in Section 34, Shell's well drill stem tested the Number One zone and it had a very good drill stem test. We think that should make a well, but they haven't completed in that Morrow sand yet.

Our well over in Section 35 is a commercial well. Coming down to the south in Section 1, we have a noncommercial well in our Number 1 well and a blow out as indicated by the red circle. We have a producing well in our Two Number 2, and going to the south, Penroc's well is noncommercial. It will never pay out the cost of that well.

Continuing on back over to the west in Section 4, we have in the northeast corner there, Shell's Number 4 well which blew out before it ever got to the Morrow. It was a very expensive operation. It did make a commercial, a very good well, but the well blew out and they had very serious problems there before they completed it. Shell, of course, has what I would consider a economic well in Section 5, Continental, that is.

In Section 6 we have the two wells, Continental's 1 and 4, which blew out on them as we have stated. The Number 4, the Morrow zones are tight, noncommercial in the Morrow.

Going over to Section 1, we have a commercial well and current day prices, and going down to the 16 in Section 7,

commercial, and on over to our Federal Nine Number 1 which is commercial.

Gentlemen, it is interesting to note here, that we have on this map twenty total wells. We have color coded twenty wells, of these we have eleven producing Morrow wells; we have one that is testing that is undecided; we have eight noncommercial or dry hole wells; and we have five wells out of twenty that blew out or had hazardous completion problems. Four of them blew out, one of them had hazardous completion problems. Percentage-wise, commercial, fifty-eight percent; noncommercial or dryholes, forty-two percent; blow outs, twenty-five percent. Percentage-wise that just gives us a pretty good average of what we can expect in drilling to and chasing out the Morrow sand.

Q. You have indicated that the east half of 5 will probably prove productive?

A. Yes, sir.

Q. In your opinion, is the Continental well in the west half of 5 draining the east half of 5?

A. Oh definitely, I think we would agree with Continental on that, yes, sir, it is.

Q. Refer to Exhibit Five and explain what that shows?

A. All right, sir. Exhibit Number Five is the monthly production as reported in the monthly NMOCC oil and gas production reports on Continental Oil Company's Bell Lake

Unit Number 14 well which is the west offset to our proposed Madera well in the east half of Section 5.

This is presented to you, gentlemen, to show you the production history on this well and how current events have affected the productive status of that particular well. The well first began production, first reported productions, was back in August of 1974. They started out with a daily average and as you can see we have the monthly gas first in the first column and the daily average in the second column. In August of '74 they started out with a seven and a half million per day rate and then the next month, in September of '74, they found a pretty stablized reasonable flow rate of approximately nine point six million a day. It's a little gaudy, but it's reasonable. Going from September through January, and actually through February of '75, they had pretty well stablized this rate at around nine and a half million per day.

Now, if you will notice the sub-notes by the month, beginning in February, we have sub-note one. (Reading.) We mailed our letter to Continental requesting an AFE to drill the east offset on a Madera lease, east offset to this well, on February 28th, 1975. (End of reading.)

Now, in March the production on this well was way down. I don't know what happened, probably they had an accounting problem or something, but if I had an outside

guess, I would say they were changing that equipment or something getting ready to really let this well rip and roar, because that is what it has done since then. I don't know that, but that is my assumption.

In sub-note Two in March. (Reading.) Texas West received an answer to the letter from Continental dated March 26th, 1975, wherein they refused Texas West's proposal of February 28th. (End of reading.)

Then in April they increased the production to ten point two million per day and in April, on April the 29th, Texas West made application to the Conservation Commission for compulsory pooling on the east half of Section 5.

And then in May of '75 they really started getting after it. They increased the production to thirteen million, six hundred and seventy-seven cubic feet per day and if you will note sub-note four. (Reading.) The Hearing on compulsory pooling of the east half of Section 5 was held on May 28th, and the first order was issued on June the tenth. (End of reading.) And look what they did in June. The production was increased to fourteen point four five million a day.

In July they averaged about thirteen and a half million per day, but in July we had our second hearing on compulsory pooling, on the twenty-fifth of that month, and we didn't get an order from the Commission on that July 25th hearing until September 2nd, 1975. That was almost thirty-

seven days.

And look what they did in this period of time, gentlemen, they went back to fourteen point three eight million per day in August and in September they have gone up to sixteen point nine nine three million per day. And, of course, during the period they were producing this well at sixteen point nine million, the Commission agreed to a full rehearing to be held today.

We understand from our field people now that this well, and this cannot be factual, but our field men are sometimes pretty good at this, that this well is now producing close to eighteen million a day.

With forty-five hundred pounds flowing tubing pressure on a thirty-five, sixty-fourths inch choke, the pressures, the flowing tubing pressure of this well when we started these proceedings back in February was in excess of fifty-five hundred pounds. It is obvious, gentlemen, what they are doing with this particular well. They are trying to gut it. They are trying to drain as much of our acreage, that product from under our acreage as they can. It is quite obvious to me the game they are playing. We used to call this delay and drain. I would rather refer to it in this particular instance as delay and steal.

Q Now refer to Exhibit Six and explain what this shows?

A. All right, sir. Exhibit Six is really a follow up to Exhibit Number Five. We just ground out some economic factors here that are pertinent to the Continental Number 14 well and certainly very serious, very costly.

The cumulative gas production of Continental Bell Lake Unit Number 14 well to October 1st, 1975 as reflected on Exhibit Number Five is four billion, five hundred and forty-four million, eight hundred and fifty-six thousand MCF gas total. Using a gross value of this production under current day gas prices of a dollar per MCF, the value of that gas is four million, five hundred and forty-four thousand dollars -- five hundred and forty-four, eight hundred and fifty-six dollars. Four and a half million dollars.

Texas West's net share of this gross value is eight hundred and seven thousand, seven hundred and seventy-seven dollars. We have a net of seventeen point, seven, seven, three, four, three percent of the working interest of twenty-one point eight, seven, five, oh, in a three hundred and twenty acre unit.

Now the mineral interest owner's share of this gross value, and this is the Rupert Madera and Mildred A. Broman, they have a total four point one, oh, one, five, seven percent in a three hundred and twenty acre unit. Their value of this gas is a hundred and eighty-six thousand, four hundred and ten dollars.

Now, gentlemen, we have estimated the cumulative gas production on Continenal Bell Lake Unit Number 14 well to April 6th, 1976, which is the earliest possible date that Texas West Madera Number 1 well can be selling gas, as we have explained below, and that cumulative gas production is based on September's average production of sixteen point, nine, nine, three million per day and it may be more than that.

But as you can see, it is self-explanatory how we arrived at a hundred and eighty-seven days from October the first before our well and in determining the cumulative production and arriving at this April the sixteenth. At that time this well will have produced seven billion, seven hundred and twenty-two million, five hundred and forty-seven thousand MCF of gas. The gross value of that estimated cumulative gas production on April 6th, 1976 as repeated previously, using current day gas price of a dollar is seven million, seven hundred and twenty-two thousand, five hundred and forty-seven dollars.

Texas West's net share of that cumulative gas production, of that cumulative gross value of that production is one million, three hundred and seventy-two thousand, five hundred and sixty-one dollars. The mineral interest owner's net share of cumulative gross value as above will be three hundred and sixteen thousand, seven hundred and forty-six

dollars. Gentlemen, that is lost to these people, it is lost to us, it will not be recovered.

On current day -- Texas West's net share of the current daily gas values, using September's daily average, we are losing three thousand and twenty dollars per day on a minimum basis, ninety-one thousand, eight hundred and eight dollars per month. The mineral interest owners out there are losing six hundred and ninety-seven dollars per day, twenty-one thousand, one hundred and eighty-eight dollars per month and this is money that they will never get back.

Q. You have indicated that you have had some contacts with Continental with respect to drilling a well in the east half of 5, would you explain your contacts in more detail?

A. Yes, sir. Do you want me to start from the original?

Q. Yes, sir, in your correspondence.

A. Yes, sir. I contacted Continental's district landman, Mr. Marshall, that's there in Midland and informed Mr. Marshall of our lease status and we felt that we were being drained and we would like to negotiate an operating agreement for the purpose of getting a well drilled on our acreage to protect our interest. He jumped on it and he called me back and said Continental was not interested and he suggested I write a letter, which I did. On February 28th, 1975, I wrote a letter to Continental, Mr. L. P. Thompson,

division production manager in Hobbs and requested that in order to protect our acreage from drainage across lease lines that Continental submit us an AFE. We further advised that we were willing to participate in drilling a well to the approximate depth of fourteen thousand, one hundred feet, or to a depth to test the Morrow zone, the Morrow zone that is producing in the Continental Bell Lake well located in the west half of Section 5. In that letter and I'm quoting from that particular letter: (Reading.) Texas West Oil & Gas Corporation assumes that Continental, as operator of the Bell Lake Unit, has the authority to commit the interests of the other Unit participants. If Continental does not have this authority, and if it is necessary that Texas West Oil & Gas Corporation contact the other Unit participants direct, we would appreciate it if you would so advise and provide us with a list of the names of the other participants and their addresses as soon as possible. (End of Reading.)

On March 26th, 1975, the date of the letter from Continental, we received -- this was their reply stating that they were not interested in drilling a well, but did suggest that they would give us an opportunity to participate in the Bell Lake Unit, which, of course, we do not desire to do.

Incidentally, in that letter from Continental there is no mention whatever of the list of participants that we had requested. It was then obvious to us that Continental

was acting on behalf of all of the Unit participants.

Another thing too, back earlier in this thing, well, a little bit later, I should say, later, after the first Order Number R-5039 was issued I did contact Mr. Marshall once again by phone and I told him at that time that we would be willing to consider joining Continental in forming a six hundred and forty acre unit and if -- and if -- the Commission approved it, we would join them, and they refused to do this also.

Q. Did you have any particular reason why you did not want to join the unit?

A. Oh, yes, we consider it uneconomical and it was our understanding that this unit was operating in the red. We can't stay in business operating in the red.

Q. What about their proposition to participate in other wells which had been drilled in the unit?

A. Well, they suggested that we do this and pay our proportionate part of all of the wells that had been drilled on a Unit basis.

Q. Now after the Order was entered on September the second, approving the forced pooling --

A. Yes, sir.

Q. Did you send the Commission and Continental a copy of your proposed well costs?

A. Yes, sir, I did, and I have entered this as Exhibit

Number Eight.

Q. All right, refer -- this is a little out of order, but that's all right. Refer to Exhibit Eight and explain what this shows?

A. Well, actually, all right, sir. Did you want it in this order, Mr. Hinkle?

Q. That's all right.

A. Exhibit Number Eight is the letter we wrote pursuant to the Commission Order, addressed to the State of New Mexico and all of the working interest owners in the Bell Lake Unit. We stated in there: Pursuant to the instructions contained in subject Order R-5039-A with reference to Case Number 5493, that we submit herewith an AFE reflecting the drilling and completion related expenses to that particular well which is referred to as the Madera Number 1. We updated our costs because of the current price increases, such as the total well cost was estimated to be one million, sixty-nine thousand, three hundred and four dollars. On the original it was nine hundred and forty-three thousand, one hundred and fifty dollars, such that we had an increase in estimation of one hundred and twenty-six thousand, one hundred and fifty-four dollars. We also attached to that a Form C-102, reflecting the well location of the pooled area, and we explained in there the particulars as far as we were concerned, pertaining to Order Number

R-5039-A. We made the stipulation in this too, we made the statement: Since Continental Oil Company is the operator of the Bell Lake Unit and further since Texas West Oil & Gas Corporation does not have, nor does it have access to a detailed list of the participants and their mailing addresses, and since Continental Oil Company has been the spokesman at all hearings in all matters for the Unit participants, Texas West Oil & Gas Corporation considers this notice to Continental Oil Company as operator of the Bell Lake Unit, the same as if it were direct notification to all participants individually.

This consideration by Texas West is further substantiated by a statement in the form of a question contained in that particular letter from Texas West to Continental, attention Mr. L. P. Thompson, which we have already read.

Q. Was the estimated cost of the well in detail attached to this?

A. It was detailed as AFE Number 108-B.

Q. Did you receive any response from Continental to this letter?

A. No, sir.

Q. Now after you sent the letter and the estimate of the well cost to the Commission and to Continental, did you make any arrangements to start the drilling of the well?

A. Yes, sir. You said after we sent this to the Commission and Continental, actually we started before.

Q. What arrangements did you make for the drilling of the well?

A. Well, we started after the first Order in trying to secure a rig to drill this well. We couldn't find one in the area with the size we needed and the equipment we needed, it was not available. We contacted several drilling contractors, none of which would negotiate a contract with us at that time. We finally found a rig in the general area that was drilling on a well for Adobe, this was A. W. Thompson, Incorporated. They did agree and did execute a contract with Texas West to drill the well.

Q. Now did the AFE which you submitted reflect the cost that you have indicated from this contract for the drilling of the well?

A. Yes, sir, it does.

Q. Have you started drilling operations?

A. Yes, sir, I have.

MR. KELLAHIN: If the Commission please, I'm going to object to any testimony as to the current drilling of this well. Whether it is being drilled or not is not the material issue in this Case. It is a matter which the Commission cannot consider in reaching a decision. If Texas West has assumed the risk of proceeding without an

order to drill this well, that would certainly be their misfortune if the Commission sees fit to issue an order denying forced pooling in the well location and I know that ordinarily the Commission feels that until an order has been extended or reversed it is in effect. Admittedly Texas West did make their application for and filed their notice of intention to drill immediately after the order was entered following the hearing de novo. It was approved by the Commission personnel on September the eighth and on September the twenty-second we filed our application for rehearing and that effectively terminated any order that might have been entered for forced pooling in this tract and the drilling would be without any authority insofar as the dedication of the east half of the section to the well concerned.

Now an application for a rehearing, a reconsideration or modification of a prior determination is not a new procedure, it is another step in the original procedure and when a rehearing is granted as the case of Atlantic Greyhound Corporation versus Public Service Commission, a West Virginia case, 54 S.E.2d, 169, holds that the status of the case is the same as though no hearing had occurred and the original judgment suspended from the date of the filing of the petition for the hearing until and unless it is subsequently adopted by the same tribunal.

The text, 2 Am.Jur. 2d of administrative law, Section

538, is to the same effect and that is well settled law. So any testimony as to what they are doing, how much they spent, how deep the well is, is wholly immaterial to this proceeding and if we are going to have a fair hearing on behalf of Continental, and I feel we are and I'm not inferring in any way that we are not. The Commission cannot consider such testimony and we object to it.

MR. HENSLEY: If the Commission please, I respectfully disagree with Mr. Kellahin and I believe the statute clearly answers his contention in Section 65-3-22 which provides that in the event rehearing is granted that the Commission may, and I stress that, enter a new order or decision after rehearing as may be required, indicating clearly from that context that until such time as a new order has been issued the prior order is in full force and effect. And, of course, also by statute even though it doesn't apply here as the Commission well knows and this would be contrary to the West Virginia authority, the statute specifically also covers the finality of orders pending review, so we respectfully submit that the argument is without merit and that the evidence relating to the drilling of the well is very material to this proceeding.

MR. RAMEY: Mr. Kellahin, I'm going to overrule your objections. In the first place, an order was not signed by Commission personnel, it was signed by a quorum

of the Commission on September 8th.

MR. KELLAHIN: I'm talking about the notice of intention to drill when I refer to September the eighth. The order was September the second and was signed by the Commission.

MR. RAMEY: Our September 8th approval by Commission personnel was in good faith of the Commission Order which we feel is in effect.

We do feel that all testimony as to what has transpired is relevant.

MR. KELLAHIN: If the Commission is going to consider an obligation incurred by Texas West as a material part of this Case, I think we are being severely discriminated against simply by them moving in and starting drilling before they have a final order and they do not have a final order until this hearing, at least, has been concluded and an ordered entered.

MR. RAMEY: Well, I will refer to the Grace case where Grace took the Commission to court on proration in the Carlsbad and the proration stayed in effect during all of the negotiations through the district court and the supreme court.

MR. KELLAHIN: That is pursuant to the statute to which Mr. Hensley just referred. There is no such statute in regard to a rehearing, and I'm talking about just fundamental

fair play in having a hearing and then bringing into consideration factors that did not exist when this case started, the incurrence of obligations, the expenditure of money if that is going to weigh in the Commission's decision that is something that we can't even refute or overcome in any fashion and we do object.

MR. RAMEY: Well, how would your client be prejudiced by this information?

MR. KELLAHIN: If the Commission is going to consider it as a factor in whether they are going to grant the compulsory pooling or not, then we have been prejudiced, yes. If the Commission is going to consider whether just the factors which appear in the statute, which is whether they have an opportunity to produce their just and equitable share, whether it will prevent waste, whether it will protect correlative rights, then that's all we can do and you are injecting something entirely new and different in this Case and we strenuously object to that.

MR. RAMEY: Okay, Mr. Kellahin, we are going to sustain your objection. We do feel that Texas West was operating in good faith on a valid Order of the Commission, but as to actual costs that have transpired to this date in this area, we won't consider that.

MR. KELLAHIN: I agree, they acted in good faith, I wasn't questioning that.

MR. HINKLE: In other words, we are not going to be permitted to show the status of the well?

MR. RAMEY: That's right.

MR. HINKLE: Okay.

MR. RAMEY: Okay, you can show the status of the well, but do not go into any costs.

MR. HINKLE: Okay.

Q. (Mr. Hinkle continuing.) Now, refer to Exhibit Seven and explain what that shows?

A. Exhibit Seven is a copy of our daily drilling report on the Madera Number 1, located nineteen eighty from the north and east lines, Section 5, 24 South, 34 East.

MR. KELLAHIN: If the Commission pleases, I want to renew my objection for the reason that the drilling of the well, whether its costs or not --

MR. HINKLE: If the Commission pleases, we will delete or withdraw Exhibit Seven and let Mr. Dunnavant simply testify as to the present status of the well.

MR. KELLAHIN: We object to that testimony as not being material. It is another factor which the Commission cannot consider in reaching a conclusion in this Case, whether that well is drilling today or is completed today, it is totally immaterial to any issue before the Commission today.

MR. RAMEY: Mr. Kellahin, we previously ruled that

we would not consider any testimony as to the cost, however, we feel that we do need to be advised as to the current status of the well.

A. (Continuing.) We, on nine, sixteen, seventy-five, Allstate Construction Company started making a location. We spudded the well, nine-thirty P.M. on ten, sixteen, seventy-five. We set five hundred and fifteen feet of casing on ten, eighteen, seventy-five. Excuse me. We set five hundred and fifteen feet of sixteen-inch casing on ten, nineteen, seventy-five, and currently on the twenty-third, which is today, we are drilling at twenty-two forty-six in anhydrite and lime.

Q. Have you made any estimate as to the cost of supervision during the period of drilling?

A. Yes, sir, we believe this should be sixteen hundred dollars a month during drilling operations.

Q. Is that in line with what is currently being charged by other operators?

A. Yes, it is. We have contacted several operators and this is in line with two, specifically Monsanto and American Quasar.

Q. What about the monthly operating cost, what would be a fair and reasonable charge for that?

A. We think that two hundred and fifty dollars per month would be a fair charge and this is again using

Monsanto and American Quasar.

Q. In your opinion should a risk factor be assigned in connection with the order approving the forced pooling?

A. Yes, there is no doubt that a risk factor should be assigned. I think what we have presented here pretty well shows, doesn't pretty well, it definitely shows what risks are involved and not only just chasing out the Morrow sand, but just drilling down to the Morrow sand in order to test it out.

As a matter of fact, if we haven't proven here today that drilling Morrow wells in this area is a risky business, then I doubt it ever will be proved.

Q. Is there any risk involved in the completion of the Morrow?

A. We have proved, in several instances out here, at least today in several instances, that completion is a very risky business in itself.

Q. In your opinion what risk factor should be allowed in this Case?

A. Well, five hundred percent, but the State I think the maximum is two hundred percent and I think that is what should be assigned.

Q. Now do you feel that there is any urgency in connection with the drilling of this well?

A. Well, yes, sir, as we have explained, gentlemen,

in the previous testimony, we are being drained excessively while they are producing this well at close to eighteen million cubic feet of gas per day. In previous testimony they stated, there is no doubt they are draining our acreage, they have admitted it. It is just a common fact. Each day the delay in drilling this well increases our risk factor because they are draining our acreage. We already have the risk involved with drilling the Morrow, which are numerous, real and very costly and very severe and this aspect of drainage only increases the risk further and from this standpoint alone I would say this risk factor has probably doubled since we started this proceeding.

Q. Now, in your opinion will the approval of this application be in the interest of conservation, prevent waste and protect correlative rights?

A. Definitely.

MR. HINKLE: We would like to offer into evidence Exhibits One through Eight. There is one that has been deleted, Fxhibit Seven.

MR. RAMEY: Without objection Exhibits One through Six and Eight will be accepted.

MR. HINKLE: We have another witness we would like to call.

MR. RAMEY: We had better cross examine Mr. Dunnavant.

MR. HINKLE: Oh, excuse me.

MR. RAMEY: Let me ask you one question, Mr. Dunnavant. What is Texas West's interest in the east half of Section 5?

MR. DUNNAVANT: We have a seven thirty-seconds undivided interest.

MR. RAMEY: Let's take a ten minute break.

(THEREUPON, a short recess was taken.)

MR. RAMEY: The Hearing will come to order.

Are there any questions of Mr. Dunnavant? Mr. Kellahin?

CROSS EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Dunnavant, on your Exhibit Number Two I believe you started over here with the Bell Lake Unit well?

A. Yes, sir.

Q. And you say the sands are well developed in that well?

A. Yes, sir, we think that the sand located at thirteen thousand three hundred is extremely well developed sand.

Q. Is that where you have the perforations?

A. That is one set of perforations, yes, sir.

Q. Was that a good well?

A. No.

Q. It was not a good well?

A. No, sir, we have never produced it over -- it started out, Mr. Kellahin, about a hundred thousand cubic feet per day and immediately dropped thereafter.

Q. It would not be comparable to the sands that exist in the Number 14 well, would it?

A. No, sir, it would not.

Q. And the next one was a dry hole as I understand?

A. Going to the west?

Q. Yes, sir.

A. No, sir, that was a very prolific producer on Shell's BE Number 4. Are you going from left to right, or right to left?

Q. Left to right on your Exhibit.

A. Your refer to our well on the right?

Q. I think we are going backwards here. Let's go back over to the lefthand side of this Exhibit?

A. Yes, sir.

Q. What kind of a well was this first one?

A. That produced two point seven billion, recovered two point seven billion according to the reports we have.

Q. Do you consider those sands well developed?

A. Yes, sir, I consider that on a very good sand.

Q. It again would not compare to the Number 14 well?

A. No, sir.

Q. Now, the next well, moving to the right?
A. Yes, sir.
Q. That was dry?
A. Yes, sir.
Q. Did that well have a blow out?
A. Number 4 did, yes, sir.
Q. And then the next well had water in the Morrow?
A. Yes, sir, it had water in the Number Four zone.
Q. In the Number Four zone?
A. Yes, sir.
Q. Now that is the Number 16 well that Continental just completed?
A. Yes, sir, the Number Four zone being correlative to the Number Four zone that is currently producing in your Number 14 well.
Q. That was a step out from the Number 14 well by approximately a mile, wasn't it?
A. Yes, sir.
Q. And then the Number 14 well, that was a discovery well for all practical purposes, was it not?
A. Yes, sir, in this particular area.
Q. Would you agree that the reservoir which is being produced by the Number 14 well extends over the east half of Section 5?
A. We sure hope it does.

Q. You do believe it does?

A. Yes, sir, we think there is a good chance of it.

Q. And as a petroleum engineer it is your opinion that it does?

A. It is my opinion, I think it does, but here again, Mr. Kellahin, we are working with Morrow.

Q. Yes, sir. And then the Shell well, that was another dry hole, is that correct?

A. The Shell well up to the northeast? Yes, sir, it had a beautiful sand in the Number Four, but it was wet in both the Number Four and the Number Two zone.

Q. So the next producer was the well in Section 4, is that correct?

A. Yes, sir, that is the Shell BE Number 1, now referred to as the Four Number 2. That is very prolific, by the way, from the Number One zone.

Q. Have you found in the drilling of Morrow wells that you can step out as much as a mile and depend on finding that same sand?

A. Would you repeat the question, please?

Q. In your experience in drilling the Morrow have you found that you can step out as much as a mile and be fairly certain of finding the same Morrow sand?

A. A mile?

Q. Yes, sir.

A. Would you like to say an eighth of a mile?

Q. All right, an eighth of a mile.

A. Mr. Kellahin, I wouldn't say six hundred feet. I feel like, you know, what we have here pretty well indicates the lenticularity of the Morrow and the heterogeneous nature of the reservoirs themselves.

Q. The purpose of your testimony is to show the risk that is being encountered?

A. It is to show the unpredictable nature of the Morrow.

Q. Is there any well shown on your Exhibit Number One or on this Exhibit here which is any closer to a prolific producer as your proposed location, or as close?

A. Oh, no, sir, I don't think so. We are sixteen fifty, our Number 1 well over in Section 1 is sixteen hundred and fifty feet from our Number 2 well, which is not prolific in any sense as your Number 14 by any means.

Q. So that increases your chances of getting production?

A. Yes, sir.

Q. And that is one reason you want to offset it?

A. Yes, sir, it sure is.

Q. Now on your Exhibit Number Three, what kind of a well is that? State Number 2, Two Number 2?

A. The Two Number 2?

Q. Yes, sir.

A. The Two Number 2, we have produced on that well seven hundred and sixty-eight million cubic feet of gas per day. The well is currently flowing with about nine hundred pounds to a thousand pounds flowing tubing pressure. Recently the production has dropped because we've got a scale problem. We are preparing to treat this well for scale. We think the average production on this after treatment, and we have to do this periodically out here because of scale deposition, will be in the order of a million a day.

Incidentally, in this treatment process, Mr. Kellahin, we just treated our Federal Nine Number 1 over here to the southwest in Section 9. The well was down to about four hundred thousand per day, it is currently making one and three quarter million.

Q. After scale treatment?

A. Yes, sir, and this is the problem out here on all of these wells.

Q. But that is a good producer?

A. Yes, sir, it is.

Q. And your Two Number 2 is a good producer too?

A. That is the one I'm referring to, the Two Number 2.

Q. Yes, sir. Now, the next well on there, the State Two Number 1?

A. That is the well that blew out on us, the one that we had to set five and a half inch liner on this Number 1 in

the northwest quarter of Section 1, that is what you had reference to.

Q. Now what was the date of that blow out, approximately? I don't need the day.

A. The date?

Q. The approximate date?

A. Two, eleven, seventy-three.

Q. And that was subsequent to the blow outs that had been experienced by Continental Oil Company?

A. Yes, sir, as your Number 4 was subsequent to your Number 1.

Q. Yes, sir. Did you take into consideration the experience Continental had had at the time you were drilling this well to avoid a blow out?

A. Yes, sir, we, of course, you know, we use the best practices, the best technique, we checked with Continental, we checked with Shell, we do all of these good things, and I know that after your Number 1 blew out you established new procedures and thought they were the best, but it still didn't work.

Q. How long has it been since Continental had a blow out?

A. I don't know, you better ask them.

Q. Has it been approximately ten years since Continental's well was drilled?

A. Well, on this well, yes, sir.

Q. You don't know when their last blow out was?

A. When --

Q. Continental's?

A. No, I don't. I know when these blow outs occurred.

Q. These blow outs that are on your Exhibit?

A. Yes, sir.

Q. When were they?

A. They were prior to, well this well here, excuse me, let me get the date here. This well was -- excuse me, I'll have to refer to another exhibit here. This was back several years ago, probably in excess of ten, twelve, fifteen years ago.

Q. About 1957?

A. Yes, sir.

Q. And they haven't had a blow out since to your knowledge?

A. I don't know.

Q. I say to your knowledge?

A. To my knowledge, no, sir.

Q. Now, I assume, you are fearful of a blow out in your well in the east half of the section?

A. We are always fearful of it, Mr. Kellahin. We rig up, and explaining your question, we rig up with the best blow out preventive equipment we can get and this includes

ten thousand pound test, twenty thousand pound working pressure flow manifold at the wellhead, high drills, rotating heads, we have separation on the equipment on the lease to separate, I mean on the rig, to separate the gas from the mud, we are ready, yes, sir.

Q. So if you did have a blow out that would constitute waste, would it not? A waste of gas?

A. Well, you know, we're concerned about gas, but it is the people involved, you know.

Q. Would it be wasteful if you had a blow out?

A. Yes, sir.

Q. All right. I believe on your Exhibit Number Four you showed the Number 3 well in Section 6 as having a blow out?

A. Exhibit Number Four, the Number 3 well, if it is circled, we have. No, I had the Number 4 and the Number 1 circled.

Q. I think the exhibits are both operated on differently I think. I will hand you the Exhibit that I have and ask you if that is correct as to the two wells in Section 6?

A. This well here?

Q. Yes, sir.

A. And this one?

Q. Yes, sir.

A. Yes, sir, as far as we know, 4 and 1.

Q. 4 and 1?

A. Yes, sir.

Q. I believe the north well you have circled is the Number 3 well?

A. The Number 3?

Q. Yes, sir.

A. Well, if we use the map here that is presented and the well location, where is the Number 1 well?

Q. The Number 1 well is in the next section to the north.

A. That's the 1-A, isn't it?

Q. Both.

A. All right, the 1 and the 1-A, right together where you have eleven?

Q. Yes, eleven is over to the east of the one that is marked.

A. Well, which one is the Number 1?

Q. Number 1 is the western-most well.

A. The one marked eleven?

Q. Yes, sir.

A. Is that the way that you all have it on your plats, is this plat incorrect?

Q. Yes.

A. Okay then we will use this plat as showing the well location. In other words, we will move this circle

from there up six hundred and sixty feet to the north?

Q. That's correct.

A. Okay.

Q. And the Number 3 well, which I believe you called Number 4, would you agree did not have a blow out?

A. This is the one that we have marked, where is your Number 4?

Q. You have 4 marked correctly.

A. Four is correct then and I do not need to change that one.

Q. And the Number 3 well in Section 6 did not have a blow out, you would agree to that, would you not?

A. We never testified to that.

Q. Don't you have it on your Exhibit?

A. No, sir, we didn't. We testified to the Number 1 and erroneously marked it.

Q. On your Exhibit Number Five you show the productivity of the Bell Lake Unit Number 14 well, do you consider this to be an average Morrow well?

A. No, sir.

Q. A well that is capable of that kind of production is an extra ordinarily good well, isn't it?

A. It is a tremendous well.

Q. I believe you testified that this acreage to the east was being drained and that enhanced the risk factor,

would you tell us just how that affects the risk factor?

A. Yes, sir, you all have previously testified and everyone here has agreed that you are draining our acreage. Each cubic foot of gas you draw out of this well you are drawing from our well, and each cubic foot increases our economic risk on this thing. It makes it more of a risk in itself. By the time you get through you will have produced, in our estimation, probably seven and a half or eight billion cubic feet of gas and that will come from under our lease as well as your own.

Q. In that connection I believe you testifed as to volumes of gas that were being produced by this well which you say belonged to Texas West and belonged to the Madera's and --

A. Yes, sir, and I think it does.

Q. And then you are assuming that all of the production insofar as this amount is concerned is coming from the east half of the section?

A. I'm assuming it is coming from both. It is coming from that well and it is coming from our section, the east half of our section.

Q. It is all coming from the east half of your section?

A. No, sir, I think it is -- every cubic foot that you produce over there we should have a part of it because you are draining our acreage.

Q. But the figures you used would indicate that you

thought that all of the production came from the east half of the section?

A. No, sir, I did not infer that.

Q. You said --

A. I'm saying that you are draining us and every cubic foot of gas you drain over there is coming from our acreage as well as your own. We should have our proportionate part of the production from that well.

Q. You couldn't, of course, get it by joining the Unit, could you?

A. Yes, sir, we have experienced financial problems before, but that is like throwing a drowning man an anchor.

Q. Actually under the terms of your lease you could not join the Unit, is that true?

A. Under the terms of my lease?

Q. Of your lease?

A. The terms of my lease indicate that we, Mr. Madera, et al, do not want to join this Unit. We went through the particulars with them and we agreed with them.

Q. You say indicates, does it actually prohibit?

A. Yes, sir.

Q. You couldn't join if you wanted to?

A. I wouldn't want to.

Q. Well, I say you couldn't if you did?

A. I could have rearranged the lease, I could have

gotten a lease that would so state, but I chose not to.

MR. KELLAHIN: I believe that's all. Thank you, Mr. Dunnavant.

MR. DUNNAVANT: Thank you, Mr. Kellahin.

MR. RAMEY: Mr. Stamets?

CROSS EXAMINATION

BY MR. STAMETS:

Q. Mr. Dunnavant, are there other zones productive in the area besides the Morrow zone?

A. Yes, sir.

Q. Then in drilling of that proposed well, would you have the potential for encountering some of these zones even though they may not be productive in offset wells?

A. Yes, sir, very definitely.

Q. And if you do and if the zones were commercial I presume you would produce them?

A. We certainly would.

Q. And would such production prevent waste?

A. I guess it would.

Q. Would you describe leaving gas in the ground as waste?

A. The current day situation, the energy problems we are having, Mr. Stamets, we need to get the gas out of the ground.

Q. Was that an affirmative answer to my question?

A. Yes, sir.

Q. Thank you. Now the Morrow formation itself, is there a potential that you might encounter zones or stringers in the Morrow formation, in your prospective well, that are not being produced in any offset wells?

A. Such as the Number 14?

Q. Yes.

A. They, of course, have the Second zone that is well developed in that well that they are not producing and we think it has merit. We don't have the details on that particular zone other than logs. We know the uncertainties of log interpretation, but it certainly looks good to us.

Q. Could there be even other zones besides that one?

A. Yes, sir, very definitely.

Q. If this gas were not produced, assuming it is there, would that result in waste?

A. Waste as such, I think here I don't know exactly how you mean waste. Leaving it in the ground as long as you are not using it you are not wasting it, but the current energy crisis we've got now, we need it, you know, we've got to have it, we need to produce it.

Q. If the gas were left in the ground forever it would never be beneficial?

A. It would never be beneficial to anybody.

Q. Now, let's assume for the moment that there is no

other productive zone in the Morrow formation except the same zone that is being produced in the Continental well, would the completion of your well in the same zone result in greater ultimate recovery from that zone?

A. Mr. Stamets, in my opinion it would. Now I would leave this up to the engineers because I think you can have economic waste. I think you can spend excess money, you know. I think you can waste money, but I just don't think you can over-drill within reasonable limits. We've got three hundred and twenty acre units established out here in this area and as long as -- I think, using a standard three hundred and twenty acre assignment, you are going to pretty well drain the acreage. Even though these wells are pretty close together it is going to possibly increase the production because we don't know, for instance, that this Number 14 is connected to all of the sand lenses. We may have sand lenses over here east of us that we may prove up and be productive. On this particular zone, the Number Four zone, I certainly think that another well in the reservoir would increase the ultimate recovery.

Q. Now you talked about the Morrow zones, Number Four and Number Two, you have indicated that they are correlative?

A. Yes, sir.

Q. Now does this mean that they are continuous between wells?

A. No, sir, we mean that we can correlate them on the logs, they are correlative zones on the logs, this doesn't mean that they are continuous by any means.

Q. Could there be or do you feel that there are smaller stringers, say inside the Number Four zone which might or might not be continuous between wells?

A. Yes, sir.

Q. So it is possible even though you might find the same zone, you could well encounter stringers in, say the Number Four zone, not being produced in the Continental well?

A. Yes, sir.

Q. I would like to go across this question one more time. You have had an education in engineering, you have had many, many years of experience in the field, is it your opinion, based on your experience, that in the same reservoir, not considering economics, but just considering drainage, that two wells will drain more than one?

A. If you have a homogeneous reservoir, if you are withdrawing from continuous porosity, continuous permeability, if your permeability is great enough, such as you can reach out to the end limits you probably can drain as much from the one well as you could from two in a limited reservoir. By limited I don't know what extent that might be, maybe three hundred and twenty acres, but if you have a heterogeneous or a dissimilar type, dissimilar nature type

reservoir, definitely I think you can improve recovery by additional development.

Q. In this pool do you have the first type of reservoir you spoke of, the homogeneous or the second?

A. No, sir, I think it is heterogeneous as it can be.

Q. Then your answer to my question relative to this particular pool is that two wells will drain more than one?

A. Yes, sir, effectively recover more, yes, sir. Excuse me, ultimately recover more.

Q. Did I understand your testimony correctly, that in your opinion the Morrow formation defies normal engineering and geological procedures for reservoir determination?

A. Well, I think a lot of the new techniques, not new, but the things that have been worked on like reservoir limits, tests and things of this nature have their limits in the Morrow formation because there you work with a homogeneous reservoir and in my opinion this is an animal of a different nature. It is heterogeneous. For instance, as far as log interpretation goes, Mr. Stamets, they proved in 16 exactly that you can't predict even after -- incidentally they cored this well, that is my understanding and they can correct me on this, but the reports show that they cored this Number Four zone, they had the core out and had it analyzed and then even after looking at the logs and the cores indicated that it would be productive and that it would be

continuous with the Number 16 and Number 14 and yet it is wet.

Q. I would assume from your lengthy answer that your answer to my question is affirmative?

A. Yes, sir.

MR. STAMETS: That's all.

MR. RAMEY: Mr. Kellahin.

FURTHER CROSS EXAMINATION

BY MR. KELLAHIN:

Q. In line with Mr. Stamets' questioning, what evidence do you have of the existence of other stringers at the site of your location?

A. Stringers, you mean producing sand?

Q. Yes, other than the Number Four Morrow zone?

A. At our location?

Q. Yes, sir.

A. I don't have the existence of any.

Q. You don't have any evidence?

A. No, sir.

Q. Within the Fourth Morrow zone what evidence do you have that there could be stringers that could be opened in your well that are not open in the Number 14 well?

A. Well, of course, they could be there. In the Number 14 you have stratigraphic conditions, you have

lenticular conditions and this is common throughout this field.

Q. But they are inter-connected within the Number Four zone, aren't they?

A. Well, somewhere they are, somewhere they aren't, you know, they are fingered in and out, yes, sir.

Q. Well, they are certainly inter-connected in the wellbore?

A. At the wellbore itself, right there at that wellbore you are looking at, yes, sir.

Q. They are inter-connected there?

A. Yes, sir, but we are talking about my location and I don't know what we've got over there.

Q. If you encountered the same conditions in your location as were encountered at the Number 14 --

A. I would consider it beautiful.

Q. And the question of fingers in the Fourth Morrow zone wouldn't even be material?

A. I wouldn't care if we got fingered in the Fourth and Fifth and Sixth, you know, I think we will get beautiful conditions.

Q. You have no evidence that the conditions that Mr. Stamets inquired about exist at your site?

A. Well, of course, this was an assumption, we have no evidence that we have a zone at all, we got to drill down

there, and in my opinion that is the only way you will find what you've got down there, is by drilling.

Q. So your conclusions that if there are zones there and if gas is left in there that becomes waste as based on your speculation?

A. Yes, in the Morrow you speculate on anything in the Morrow in my opinion.

Q. One other question. You, I believe, said in your opinion two wells in this type of reservoir would recover ultimately more gas than one? If I'm wrong, correct me.

A. Yes, sir, I think we are looking out here at -- well, we have three hundred and twenty acre units established by the Commission. I think standard spacing is an efficient and effective drainage procedure for this field.

Q. What is the permeability in this Fourth Morrow zone?

A. I have no idea. I know that you have calculated this in previous testimony, we can use that and my engineer will testify later to that if you like.

Q. Is he going to testify to that?

A. He can if you like.

Q. But you are making conclusions as to drainage, but you don't know the permeability?

A. We are making conclusions from experience.

Q. But we are talking about this reservoir. Do you

have any information to show how much one well will drain?

A. Yes, sir, we do. We have your BHP over Z plot, we have your curves, we have your testimony that was presented earlier and we have our own data worked up from the data, the pressures and production.

Q. And that does show that the Number 14 well is draining your acreage?

A. Yes, sir. Yes, it indicates it has got a tremendous reserve, we don't know how far it extends, we are confident that it is draining our acreage, yes, sir.

Q. Now would the second well on there be an economic well from the point of view of recovering gas that would not otherwise be recovered?

A. We think it would. Here again we get back to the heterogeneous nature of this Morrow sand. We don't know what we are going to encounter there, we might have additional stringers. We might as far as this Number Four zone is concerned, I think standard three hundred and twenty acre units is an effective drainage pattern.

MR. KELLAHIN: Thank you.

FURTHER CROSS EXAMINATION

BY MR. STAMETS:

Q. Mr. Dunnavant, considering the Morrow formation as you know it, having drilled wells in the area, would you

consider it more likely that you would find the exact same situation that Continental has in the west half of the section, or more likely that you would encounter other zones in the Morrow not producing in the offset wells?

A. I think we have a very good chance of additional zones. We know the nature of this beast out here, Mr. Stamets, we do know that just short distances away from wellbores you encounter lenticular sands that aren't located in that wellbore. We have the Atoka that can, as you well know, can come and go in very short distances. We think there is a chance of getting additional pay at our location, compared to what they have got in the Continental well.

MR. STAMETS: Thank you.

MR. RAMEY: Any further questions? The witness may be excused.

MR. DUNNAVANT: Thank you, sir.

(THEREUPON, the witness was excused.)

MR. HINKLE: We would like to call the next witness, please?

T. SCOTT HICKMAN

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

DIRECT EXAMINATION

BY MR. HINKLE:

Q. State your name, your residence and your profession?

A. T. Scott Hickman, I reside in Midland, Texas and I'm a consulting petroleum engineer.

Q. Have you previously testified before the Commission?

A. Yes, I have.

Q. And qualified as a petroleum engineer?

A. Yes, I have.

Q. For the purpose of this record I would like for you to state briefly your educational background and experience as a petroleum engineer?

A. I was graduated in 1957 from Texas Tech University with a Bachelor of Science in petroleum engineering. I worked for Texaco as an engineer, principally reservoir engineer for eleven and a half years. During that time I received from Louisiana Tech University a Masters of Science in petroleum engineering in 1968. In December of 1968 I resigned from Texaco, moved to Midland, Texas and went into practice as a consulting engineer for the firm of Leibrock, Landreth, Callaway and Campbell, then approximately three years ago I set up my own practice and I'm currently in a partnership with R. S. Bailey.

Q. As a consulting petroleum engineer?

A. Yes, sir.

Q. Have you made a study of the Bell Lake Pool Field and the surrounding area?

A. Yes, sir, I have.

Q. Has your study included the volumetric calculations with respect to the lands in Section 5, Township 24 South, Range 34 East?

A. Yes, it has.

Q. Relate to the Commission the extent of your study, the methods used and your resulting figures.

A. The Section in question has, of course, been presented here already, has only one well in it that penetrates the Morrow, so I utilized the various parameters such as net pay thickness, porosity as calculated from the logs, water saturation as calculated from the logs, bottom-hole pressure as was testified to in a previous hearing, and the bottom-hole temperatures as determined from the data recorded on the heading of the logs, we used standard methods to calculate a super compressibility factor and in utilizing this data I formed a routine volumetric calculation of, first of all, the recoverable gas that could exist in a standard acre foot of space, assuming that these parameters were all constant and I applied this over a three hundred and twenty acre area and then just doubled it for a six hundred and forty acre area.

For three hundred and twenty acres I calculated recoverable gas, this is ultimately recoverable gas, using a reservoir abandonment pressure of a thousand pounds of

eight point seven eight billion cubic feet. For six hundred and forty acres I calculated the ultimate recoverable gas of seventeen point five seven billion cubic feet.

And emphasizing once again that this is assuming that the properties in the Continental Bell Lake Number 14 to be constant throughout this area. Of course, that is a very hypothetical situation, but this is the approach I used.

Q. From your study of the wells and so forth, in your opinion is this a homogeneous reservoir?

A. Not at all, no, sir.

Q. What is the nature, in your opinion, of the Morrow formation?

A. The Morrow formation is, I think the exhibits previously presented, the completion map and the two cross sections show it is a highly erratic formation, it is totally unpredictable both horizonally as to what stringers might appear and if they do appear whether they are productive or not and it is highly erratic in lateral extent as to if you do find one stringer producing in the well, you know, will it produce in another well. It may not even be present in an adjacent location and if it is present it may not be in pressure communication or at least it may not prove to be commercially productive, so it varies widely and erratically and unpredictably, both horizonally and laterally.

Q. I believe you heard the testimony this morning

with respect to drainage, do you agree that the well in the west half of 5 is draining the east half?

A. If the reservoir extends as it possibly appears that it does under that east half, well then, yes, there would be drainage taking place.

Q. What portion of the recoverable gas, in your opinion, has been produced by the well in the west half of 5?

A. I think the cumulative production is four point seven billion, I believe is what has been entered in the record -- four point five billion, and using my volumetric calculation for the wells on three hundred and twenty acre spacing, that would be a little greater than fifty percent of the recoverable gas, under a three hundred and twenty acre proration unit and if we want to consider the whole six hundred and forty section where I've estimated seventeen point five seven billion feet of recoverable and fourteen point five would be a little over twenty-five percent has been recovered.

Q. In your opinion would an additional well drilled in the east half of 5 recover any additional gas over what can be recovered by that well in the west half of 5?

A. In respect to the Fourth sand only, now?

Q. Yes.

A. Okay, in respect to the Fourth sand or stringer or whatever you want to call it, I think apparently we must be in agreement, I haven't heard any dissension on what it is

being called here. The zone that the Number 14 well is completed in, yes, there would be increased recovery due to two things, one that -- one is economic, in that we have to deal not with the hypothetical research department type of problem, but a well can be produced only down to certain limits and then it becomes uneconomical. The operating costs of a well in the west half, and east half I assume would be somewhat approximate. I think we can assume that both operators will take the well down to about the same limit, so let's say that limit is -- just pick a number -- a hundred MCF a month per well, so if you had two wells in there you could be producing two wells for a total of two hundred MCF for a total, rather than just one and this is just the nature of the reservoir itself. An additional wellbore will give you a greater degree of recovery, now how much depends on the properties of the reservoir, its shape, its permeability and this type of thing. It can vary from almost doubling the recovery to being just a small fractional increase.

Q. In your study of the area what are the chances of encountering other productive sands in this east half?

A. I think the chances are very good, that there will be other stringers found that will have gas in them, as to whether they will be commercially productive or not, it's risky, but I think definetly they will find some other stringers of gas show that they may or may not be able to

complete.

Q. Have you made any volumetric calculations with respect to any other wells in the area, other than the Number 14?

A. Yes, sir.

Q. Have you prepared or has there been prepared under your supervision exhibits which show the results of your calculations?

A. Yes, sir, I would refer to Exhibit Nine, Ten and Eleven and discuss Exhibit Nine first.

This is a plot of pressure divided by different compressibility or Z factor versus cumulative production from the Bell Lake Number 5 well in Section 1 of 24, 33.

I believe this is the same well that appears as the left-most well on the cross section of Exhibit Two, if I'm correct. The pressure production history that is shown here was taken from exhibits that Continental presented at a previous hearing. This is a material, just a gradual representation of the material balance equation for figuring the volume of gas that would exist within a closed area.

In this case by extending to the four data points that are given and they give pretty good alignment and this last point is down low enough to where it should be fairly accurate.

I indicate the original gas in place within this well's drainage area of three point three five billion cubic feet. Now it is my understanding that this well has been depleted at this point, with, I think, something around two point seven billion feet of cumulative production which would be about eighty-one percent or eighty-two percent of the original gas in place, which seems quite reasonable for this type.

This shows this well to have produced from a fairly small and bounded lenticular type reservoir. By taking the well log and making a net pay count on it and using a porosity figure of about ten percent, which I think is a good reasonable assumption, you can back out a drainage area of about two hundred and forty to two hundred and fifty acres. Now that may or may not be meaningful. If we assume that the pay thickness is constant, the porosity remains constant and the water saturation remains constant. It could be more than this or less than this, but basically it is a small, lenticular type reservoir that hasn't been depleted.

Q. Refer to Exhibit Ten and explain that?

A. Exhibit Ten is the very same type of calculation display, the Bell Lake well Number 1-A, Section 31 of 23,34. Here again I used the data that was presented by Continental at the previous hearing, and again there is four data points that give a reasonable looking alignment. From this I

estimate the reasonable gas in place to be two point two, two, five billion cubic feet. Here again taking a rough pay count from this well and applying ten percent porosity and thirty percent water I come up with a little over a hundred acres as the area of this lenticular reservoir. Again this is plus or minus, depending on how consistent the various --

Q. The conclusion is, though, that it is very limited?

A. Very limited and very small.

Q. Now refer to Exhibit Eleven and explain that?

A. Exhibit Eleven is a PZ versus Cum. on the Continental Number 14 which has been much in discussion here this morning, in Section 5 of 24, 34, the well which I think by all concerned agree is an unusually good Morrow well. If we can agree on nothing else, I think everybody would agree on that point. It indicates in place, the original gas in place, within the drainage area which it is presently contacting, of forty billion feet. I might say in relation to this now, that this well is in its fairly early stages of producing history. As you can see the three data points are grouped up pretty close together and a slight variation in these points could -- would have quite a pendulum effect on the tail end of this line which determines what the in place is. A little bit of adjustment in these points could swing it much higher or could swing it considerably lower. So we normally, in the profession, you know, we refer to this

not having as big a degree of contents as these other two curves would that had pressure points distributed down to a lower pressure. Some of the problems involved or perhaps the pressure measurements did not measure the static or of the absolute average pressure of the reservoir and perhaps it was still building up, et cetera. Or maybe the Z calculation was not exactly correct, but nevertheless the three points in this case do line up quite well and do indicate forty billion feet.

And taking the data from the Number 14 well as to porosity, water saturation, net pay, you can calculate out a drainage area of twelve hundred and twenty acres that this well indicates draining. Once again I would have to precaution, you know, that this is plus or minus, whatever you want it to be, depending on how constant its porosity, how constant its water, how constant its net pay.

Also, I think thas when you speak of twelve hundred and twenty drainage you think of a well in the middle of a plot, right in the middle of twelve hundred and twenty acres and that may or may not be the case. The odds would say this is certainly not the case. Perhaps this well is on the far side of the reservoir, on the top side, the bottom side, you know, who can say until other wells are drilled here to establish control.

Q Could it be in a trench where you would have an

elongated pool or field?

A. It's possible, there have been some channels found in the Morrow. I'm not aware of any of this channel deposition, per se, in this immediate area, but this could occur. I think we can rest assured, based on what we have learned in the Morrow in ten years of concentrated drilling it is going to be some odd erratic shaped reservoir.

Q. Now from your study and experience and working with the wells in this particular area, have you formed any opinion as to the risk that is involved in drilling and completing Morrow wells in the area?

A. Yes, sir, I have formed an opinion long ago about the risk of oil field operations in general, having placed a little bit of my own money occasionally in such ventures and I learned that the use of such words as a "gut sense" and a "sure thing" do not really fit the vocabulary. However, as to this particular area, to the Morrow in general, and to this particular area, there is no doubt that there is a high risk. Maybe we could break the risk down into three general categories. I think maybe one is the risk involved in the drilling of the well. Any drilling operation has some degree of hazard to it. We have areas where there is a potential for blow outs, of course this multiplies greatly. Here we have got a situation of having some -- above the Penn section of having some formations with fairly weak fracturing pressures.

And then you go into some of the Penn and you find some highly abnormal pressures. For example, there are a couple of wells in the Bell Lake area with pressure gradients of point seven four. This is in the Atoka. Point seven four psi per foot. One was point seven four and one was point seven one. This would be related to what you consider the normal pressure gradient of point four six five psi per foot, so there we go almost three-quarters more, almost double. And then the Morrow itself, the pressure gradients in the Bell Lake area, I'm talking about the original reservoir pressure, prior to any production, run with gradients of between point six two to point six five psi per foot which in itself is abnormal, but it is mainly these Atoka zones that have caused problems in drilling because they are highly abnormal, and then you've got zones up above, if you wade up to control these Atoka zones then you can see the fracturing pressures of these less competent beds above and you lose your circulation in the well if your luck doesn't hold.

Of course then, along with the drilling there is the normal problems of sticking and twisting off and what not which I think the Commission is well versed on.

And then there is another area that occurs and this is in -- there is a danger -- you get your well down all right, you may find a zone but you may not be able to make a good completion out of it and this is very true of the

Morrow. The Morrow, to my knowledge, has been the toughest thing to complete in in the whole Permian Basin. It is very sensitive to fluids. If you damage the thing while you are drilling it and then you try to correct this damage on completion with acid treatment and fracs and in many, many cases you just enhance the damage. And sometimes by producing a well over a length of time you can clean up some of this damage, but sometimes you don't. It is a very real problem and there is quite a bit in the literature about this, I wasn't going to take up any further time for the record unless it is necessary, but there is considerable in the literature about this, it has been written on at length.

Then you have got the very real risk that, you know, you may not get a commercial zone. This Morrow is very erratic, the zone may be there and it may not be there. It may be productive, it may contain water and I think the exhibits show if you look at that completion map, Exhibit Four I believe it is, well, you just see where you don't have any consistency. You've got a well here in the Fourth zone of the Morrow, a well up here in the Atoka, a well here that tested water out of the Fourth zone, a well here in the second zone. It is very highly erratic in nature, so there is a very real risk here and so you have got to -- well, the Morrow to sum it up, the Morrow really has the worst of all worlds, you've got a very bad drilling situation,

you've got a very bad completion situation and you have got a very erratic formation to start with. So the three elements of risk are all at their height in the Morrow.

Q. In your opinion what would be a reasonable risk factor to be awarded in this Case?

A. You know, I think the maximum allowed by the Commission is certainly not unreasonable in this Case at all, and there is no need to talk anything higher.

MR. HINKLE: We would like to offer Exhibits Nine, Ten and Eleven.

MR. RAMEY: Exhibits Nine, Ten and Eleven will be admitted.

MR. HINKLE: That's all of direct.

MR. RAMEY: Any questions of Mr. Hickman?

MR. KELLAHIN: I have a couple.

MR. RAMEY: Mr. Kellahin.

CROSS EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Hickman, did you make any attempt to determine the extent of the reservoir in which the Number 14 well is located?

A. Well, I calculated the drainage area, the theoretic drainage area.

Q. About twelve hundred acres?

A. Twelve hundred, twelve hundred and twenty acres.

Q. That would be a unique reservoir as far as your experience with the Morrow is concerned, would it not?

A. In this Bell Lake area that would certainly be a larger reservoir than what we have evidence of elsewhere, yes, sir.

Q. And on your exhibit, I think it is Number Eleven, the pressure production decline curve on the Number 14 well, I believe you testifed that that could be swung down to show considerable less productive history?

A. Well --

Q. When you get the pressure points?

A. Well, no, sir, I testified that when your pressure points are this close together, that if there is an inaccuracy involved there and these not being static pressures, that the thing could swing considerably up or down.

Normally what happens is that if your latter pressure is not static then this makes you guess at too low a volume, but it can go either way. But in this case you've got the three points and you line them up and get your line. I don't think you could reinterpret these three points, now, I'm saying that the points may not be correct, but I think most any engineer would come right to the three points and get to the same thing I would.

Q. And that's all you have?

A. Yes, sir, correct.

Q. There is no way you can swing that line to show an uneconomic volume of gas in this well, would there?

A. No, sir, not based on these three points as presented. I don't have a French curve that bends down that much.

Q. Now you said that you made a study of this Bell Lake Pool, what kind of a study did you make?

A. I studied all of the well logs, all of the completion reports, all of the -- now I say all, now it is in the context of what data I was able to gather, which was mainly commercial completion reports from a commercial services or geological libraries.

Q. Did you have access to any core data?

A. No, sir, I saw there was some reference to some coring done, it just said core at a certain interval and didn't describe it, so I did not have access to core data.

Q. I believe your testimony was that the Morrow formation can be damaged in the completion?

A. Yes, sir.

Q. And wouldn't you really have to look at a core to make that determination?

A. No, sir, the Morrow, there is just example after example to be dug up of damage in the Morrow.

Q. In the Bell Lake area?

A. I don't know.

Q. Or in the Fourth Morrow zone?

A. I do not have a fixed example, one of the problems being, we've got some pretty good looking sands, such as that in the Texas West well that turned out to be virtually a dry hole. It looked real good and should produce and yet they are not commercial. The question is, you know, is it the native permeability of the formation itself that is too low, which does not appear to be the case in the log, or the fact that it was damaged, so it is inconclusive.

But if the Bell Lake area is not subject to damage from fluids, particularly fresh water fluids, then it would be extremely unusual. I believe most of the wells I see were drilled with saline muds or something of that nature.

MR. KELLAHIN: Thank you, Mr. Hickman.

MR. RAMEY: Any more questions of Mr. Hickman? He may be excused.

(THEREUPON, the witness was excused.)

MR. HINKLE: That concludes our direct presentation.

MR. RAMEY: Mr. Kellahin, would you like to proceed?

MR. HINKLE: That is all of our witnesses, we might have another one later on.

MR. KELLAHIN: We are ready to proceed.

(THEREUPON, a discussion was held off the record.)

RONALD McWILLIAMS

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. Ronald McWilliams.

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

A. I'm employed by Continental Oil Company as a supervisory reservoir engineer in the Hobbs Division office.

Q. What is your educational background, Mr. McWilliams?

A. I was graduated in 1951 from the Pennsylvania State University with a Bachelor of Science degree in petroleum and natural gas engineering. I went to work for Lion Oil Company and worked for them in various engineering capacities for a three-year period in various assignments in Arkansas and Texas. After that I left Lion Oil Company and went to work for Meni Grande Oil Company in Venzuela for a two-year period where again I was involved in various engineering assignments involving production and reservoir engineering. At the conclusion of my tour in Venezuela I returned to school and received a M.S. degree in petroleum and natural gas engineering from the Pennsylvania State University in

1958. At that time I accepted employment with Continental Oil Company in Roswell and I have been in New Mexico ever since.

Q. Now the district headquarters were in Roswell at the time you were employed by Continental?

A. Yes.

Q. And are they presently located in Hobbs?

A. Yes, they are.

Q. Then you are located in Hobbs?

A. Yes.

Q. Now does the area involved in the application of Texas West come under your jurisdiction as a reservoir engineer for Continental?

A. Yes, it does and also under my jurisdiction as a member of the AGA committee for gas reserves for southeast New Mexico.

Q. And what is the AGA committee, would you explain that, please?

A. The AGA is the American Gas Association. They have a committee that is charged with the responsibility of estimating reserves for gas wells throughout the nation, and I represent a committee specializing in southeast New Mexico, in Lea County in particular with respect to dry gas reserves.

Q. Does that involve the study of gas reserves throughout southeastern New Mexico?

A. Yes, it does.

Q. And are you familiar with the Bell Lake Pool?

A. Yes, I am.

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

MR. RAMEY: Yes, they are, Mr. Kellahin.

Q. (Mr. Kellahin continuing.) Are you familiar with the geology and development history of the South Bell Lake Morrow Pool?

A. Yes, sir.

Q. Would you briefly review this for us?

A. The Morrow formation in the Bell Lake Unit area can be subdivided into four general intervals of sand depositions. Production comes from individual sand lenses scattered throughout the Morrow section. Production was first established in a Fourth Morrow interval in Continental's Bell Lake Unit Number 5 in November of 1958. This well was completed for an absolute open flow potential of seven point six million cubic feet per day.

Exhibit One is a log of the Bell Lake Unit Number 5, showing the four general intervals of sand deposition and the completion interval for this well. The Number 5 well recovered two point seven billion cubic feet of gas over a sixteen-year life and depleted the lense in which it was completed.

Exhibit Two is a graph showing the pressure

production history of the well. This well had an initial bottom-hole pressure of eighty-nine hundred and two pounds and an estimated bottom-hole pressure of about twelve hundred and fifty pounds when it was abandoned earlier this year.

The straight-line relationship between the bottom-hole pressure and the cumulative production indicates that this lense was a volumetric reservoir with no water input. We've talked about it a little earlier.

The second well completed in the South Bell Lake Morrow Pool was Continental's Bell Lake Unit Number 1-A. This well was recompleted from the Devonian to the Morrow formation on July 30th, 1968 and had an absolute open flow potential of one point nine million cubic feet per day. The completion interval for this well is in the first and second Morrow sands shown on Exhibit Three, a log section again showing the four general section of Morrow sands in the well. This well had an initial bottom-hole pressure of eighty-seven hundred and thirty-six pounds and it has produced two point two billion cubic feet to October the first of this year and is currently making about three hundred and thirty MCF a day.

Exhibit Number Four is a graph showing the pressure production history of the Number 1-A. The current bottom-hole pressure in this well is estimated at about twelve hundred and fifty pounds and the shape of the curve indicates that

this well too is producing from a volumetric reservoir.

The third well to be completed in the Pool was Continental's Bell Lake Unit Number 14. This well was completed in the Fourth Morrow interval during April of 1974 for an absolute open flow potential of eighty-two point six million cubic feet per day.

Exhibit Five is a log section for this well showing the Morrow section in the completion. This well had an initial bottom-hole pressure of eighty-six hundred and twenty-two pounds and has produced four point five billion cubic feet to October 1st, 1975.

Exhibit Six is a graph showing the pressure production history of the Number 14.

I also have pressure production history graphs for Shell's Antelope Ridge Unit Number 1 and 2 which are Exhibits Seven and Eight. You will note that they also show the straight line relationship and indicate that these wells are producing from volumetric reservoirs.

Q. Now on Exhibit Number Six --

A. Excuse me.

Q. You have not finished?

A. Also we have Exhibits Nine, Ten and Eleven which represent rate cumulative production wells for the Texas West State Two Number 2, State Thirty-five Number 1 and the Federal Nine Number 1 well. In the absence of pressure data these

plots can sometimes be used to give you an indication of the reserve that a particular well might have and also these indicate that these particular wells are probably in somewhat of a smaller reservoir.

But in summary I think what these exhibits show in both the logs and the production history is that the Morrow reservoirs in the Bell Lake and in the Antelope Ridge area are individual lenses and not a sheet-type sand, so we are looking at small individual reservoirs. We are looking at reservoirs varying in size, say somewhere from the neighborhood of one billion to forty billions?

Q. Now on your Exhibit Number Six, that substantially agrees with the exhibit that was offered by Mr. Hickman, does it not?

A. Yes, sir.

Q. Would you agree with his testimony as to the volumes of gas to which that well is connected?

A. I think we are substantially in agreement.

Q. What figure would you give?

A. Well, we used about thirty-six billion, but I consider that, considering the size, to be in substantial agreement with his work.

Q. Now have you made any estimate of the aeral extent of the reservoir?

A. Yes, we have.

Q. And what is your estimate of that?

A. We estimate about --

MR. HENSLEY: I'll object to that question on the ground that there is no proper foundation for the question. There has been no testimony whatsoever, Mr. Commissioners, of any foundation of this witness.

MR. KELLAHIN: I'll back up and ask him a couple of questions.

Q. (Mr. Kellahin continuing.) Mr. McWilliams, in trying to determine the areal extent of a reservoir underlying a well, what information do you need?

A. Well, you need a porosity, water saturation, pay thickness and pressure, and gas composition.

Q. Have you, using that information, made an estimate of the areal extent of this reservoir?

A. Yes, we have.

Q. Now what figures did you use for well porosity and water saturation and the other factors?

A. Well we used about an average of ten percent porosity, water saturations twenty-five percent and we estimate pay thickness at about twenty-five feet. Then using these numbers we calculate a minimum size for the reservoir that Number 14 has developed of about fourteen hundred and forty acres.

Q. Now would that be the size of reservoir necessary

to contain the reserves you just testified to?

A. Yes, sir.

Q. Another witness will elaborate on this, will he not?

A. Right.

Q. Now you testified as to the nature of this Morrow formation as being lenticular in this area?

A. Yes.

Q. And you agree with the testimony that has previously been given?

A. Yes, I do.

Q. Under those circumstances don't you think that the reservoir could be completely absent in the east half of the section?

A. No, I don't. Exhibit Number Twelve is an east-west cross section through the Bell Lake Unit Number 4 located to the west of Number 14. The line of the cross section is shown on the exhibit, incidentally. This cross section runs from Continental's Bell Lake Unit Number 4 to the Bell Lake Unit Number 14, then we project the Shell Antelope Ridge Number 5 down to the line of the cross section and show it on there and then it terminates in the Shell Antelope Ridge Unit Number 2.

And looking at this cross section there you can see what we appear to have is a channel developed in about the

area of the Bell Lake Unit Number 14 and there the sands thicken and a similar character on the logs of Continental Bell Lake Unit Number 14 and the Shell Antelope Ridge Unit Number 5 and then we see the channel disappear in the Shell Antelope Ridge Unit Number 2. This channel has been confirmed or is postulated on the basis of a stratigraphic study which Continental had performed. We feel that the nature of this reservoir that we are looking at here is a spring channel in this particular instance.

Q. Now there was a reservoir limit test run in this area, was there not?

A. Yes, there was.

Q. And another witness will testify as to this?

A. Yes, he will.

Q. Now in your opinion is there any considerable risk of not encountering production in the east half of Section 5?

A. No, I don't see any risk of not encountering a Fourth Morrow sand in a productive condition.

Q. The east half of Section 5 is within the limit of the Bell Lake Unit, is it not?

A. Yes.

Q. And is it within a participating area of that Unit?

A. Yes, it is.

Q. If the reservoir is as good as you indicate it is, why doesn't the operator desire to drill in the east half of the section?

A. Well we have several reasons. First our objections are pretty much the same as Texas West. Earlier we wanted to make money on this thing and we recognized, as their testimony has brought out, and I think we have elaborated on it further through there, that the lenticular nature of the Morrow indicates that it is a risky development prospect, so what we are attempting to do with our development program in the Bell Lake Unit area, is to take advantage of this large lense that we have found in the Bell Lake Unit Number 14. It is exceptional. I don't believe that any of the wells that we have looked at here today are apt to be as large, so we have also seen evidence that there have been several wells that actually had smaller volumes. Now we know that from economics that you need, from the economic conditions that we are looking at, at any rate, we need a reserve of about four billion cubic feet to pay out a Morrow well in this area.

Now what we are doing, if you drill in the east half of Section 6 and go to the -- Section 5, I guess it is -- and go to the Fourth Morrow and complete only in the Fourth Morrow, you end up with an acceleration project and under the current gas prices and current economic conditions that prevail, this is not an economic venture for the Bell Lake

working interest owners to accelerate this gas reserve.

We have an exceptional well and it is above average and we think maybe it will take about seven and a half years to deplete this lense here.

By drawing a second well to it, we are not going to shorten the life of the reservoir by a sufficient amount to actually make any money on this if you complete only in the Fourth Morrow and make a well, so we are trying to avoid an acceleration if we can.

Q. In your opinion would a well in the east half of Section 5 add any reserves that would not otherwise be recovered?

A. With respect to the Fourth Morrow reservoir, I would like to say that it would be very doubtful that it would add any reserves.

Q. What about other lenses then, is there a possibility that there might be some?

A. Well, there is certainly a possibility.

Q. Have you found any indication that they are present?

A. No, we have one interval that possibly could be productive from the log on this well, but as we have testified as to the nature of the rest of the Morrow, I'm not so sure that it would be productive.

We have drilled a well and we have looked at all

of the Morrow sands. If we drilled a second well seventeen hundred feet away, the chances of us finding another lense something like the Bell Lake are certainly very long odds for us. I don't think the chances are good, only you can't say that you wouldn't.

Q. How many wells has Continental drilled as Bell Lake operator since 1973?

A. We have drilled three wells.

Q. And are any of them a step out of only seventeen hundred feet?

A. No, sir, they have all been greater than seventeen hundred feet.

Q. Have they been in excess of four thousand feet?

A. Yes, they have.

Q. In your opinion is the second well in Section 5 a necessary well from the drainage standpoint?

A. No, it isn't.

Q. Well if it is an unnecessary well from the drainage standpoint, in your opinion would the drilling of such a well constitute waste?

A. Yes, I think it would constitute economic waste.

Q. Now the Unit has just completed drilling a well, has it not?

A. Yes, it has.

Q. In other words, describe that?

A. Well, as I said before, the Unit is attempting to capitalize on the large sand lense that we have discovered in the Bell Lake Unit Number 14. We don't particularly want to accelerate reserves in this thing, but we can use this lense to serve as a back up against drilling an out-and-out dry hole. In other words, what we would like to do is step out in this lense as far as we can and attempt to drill a well in the hope that we would encounter one of these other Morrow lenses that we know to exist in the area. And so using all of the information that we have available, we selected a location for the Bell Lake Unit Number 16 and drilled that hoping to find additional reserves in that well.

Q. Did you find any additional reserves in that well?

A. Yes, we did. Of course, we were hoping to find Fourth Morrow production, but as we testified earlier the zone tested wet in the well, although it did produce some gas.

What we have discovered from the completion of this is first that by actually getting a water sample out of the Morrow which was something nobody had in this particular area, we were able to measure the RW of the formation water, the formation water resistivity and then use this and modify our log calculations, and when we did we found that sure enough the logs indicated that the wells should make water.

So I don't believe that perhaps we are as down on logs as some other operators on it, because we feel that they can be used, and they can be a help to you. And as we testified the Morrow is a tricky formation, you have got to use all of the technology available to you, and logs are one of them and they are a tool and we think they are a very useful tool.

At any rate, the Fourth Morrow ended up wet, so we have recompleted that well in a second Morrow lense, and potentialed it for somewhere around nine million, I believe they testified. We had a through-tubing bridge plug set in the well which began to leak so we are currently in the process of working the well over. We set a permanent bridge plug above the Fourth Morrow and hope to have this well on production soon. We have definitely found production in the Second Morrow in this well.

Q. In your opinion will it be an economical well?

A. Well, it is really difficult to say until you get pressure production history, because we say you can't look at a log and project Morrow gas reserves on it. You are fooling yourself if you think you can. But just taking the log pay that we see and making a calculation there, we think that we might have -- could possibly have about six billion cubic feet of reserves based on three hundred and twenty acre spacing.

Q. Now if you did encounter additional reserves in

the Number 16 well, isn't there a distinct possibility that the same thing could occur in the east half of Section 5?

A. Yes, it is likely, but again at a location only seventeen hundred feet away, you are asking for an awful lot of sand change to occur, since we have already looked at these sands in here. We would prefer to step out further if you are going to drill in the east half of Section 5, we think the possibility of finding additional reserves in zones other than the Fourth Morrow would certainly be enhanced by drilling in the south half or certainly further than the seventeen hundred feet from the Number 14.

Q. Now you said that it was likely that they would encounter an additional zone there, did you mean that or is it possible?

A. No, I said it isn't likely.

Q. It isn't likely?

A. I said it isn't likely but it can't be completely ruled out.

Q. Are the working interest owners planning any further Morrow development in the Bell Lake Unit?

A. Yes, we have plans to drill one additional well this year and three next year.

Q. In the operation of the development of the Bell Lake Unit, what development strategy has Continental followed?

A. Well --

MR. HINKLE: We object to any further questioning with respect to the development and operation of the Bell Lake Unit. It is clear by the record of this Case that Texas West has an undivided seven thirth-seconds which is not committed to the Unit. Any operations under the Bell Lake Unit can have no effect legally whatsoever upon Texas West. All of this evidence is irrelevant and immaterial. It is just as immaterial, in my opinion, as it would be to go into the development of the original thirteen colonies, it is just that foreign. It has nothing whatsoever to do with the issues in this Case and we move that this evidence be stricken with respect to any development under the Unit Agreement and any future evidence we will make the same objection to.

MR. KELLAHIN: If the Commission please, part of the question involved in this Case is why did Continental drill in the east half of Section 5 since it is within the boundaries of the Bell Lake Unit. From that point of view this testimony is material. In addition to that there has been extensive testimony offered by Texas West to the development wells that have been drilled throughout the Bell Lake Area and in the Antelope Ridge area and their policy in offsetting wells and why they offset and the strategy of Continental in the operation of the Bell Lake Unit is material in connection with that testimony and we submit that it is proper testimony

since the whole area we are talking about is within the Bell Lake Unit and Continental Oil Company is the operator of that Unit.

MR. RAMEY: Mr. Kellahin, I think it is relevant that we go over wells that have been previously drilled because I think this has to do with reserves and risk factor, but I can't see any relevancy in future plans for the Bell Lake Unit, we are dealing with a three hundred and twenty acre tract here on forced pooling which is not committed, a portion of which is not committed to the Bell Lake Unit, so I can't see anything to do but sustain the objection.

MR. KELLAHIN: Then the objection is sustained?

MR. RAMEY: Yes, sir.

Q. (Mr. Kellahin continuing.) Now Mr. McWilliams, Texas West's witness testifed that in their opinion the correlative rights of Texas West and the other interest owners who have not committed to the Bell Lake Unit are being impaired. In your opinion are the correlative rights of Texas West being impaired and can they do anything to protect them?

A. I think they can join the Unit and they would have a very easy means of protecting their correlative rights. They would not only share in the production from this well, they would share in the production from other wells now producing in the Unit area and future wells that would be

drilled.

MR. HENSLEY: I move that that testimony be stricken, that it is totally irrelevant to the proceedings that there is no obligation on the part of an uncommitted operator to dedicate his acreage to an existing unit, and that is what that answer presupposes. It is entirely speculative and hypothetical.

MR. KELLAHIN: If the Commission please, it does not presuppose that they have to be forced to dedicate their acreage, but it does say, as they complain their correlative rights are not being protected, then the witness says they can be protected by joining the unit. It is perfectly proper testimony.

MR. RAMEY: Are their correlative rights being violated?

MR. KELLAHIN: He said they were not. He said they could protect them by joining the unit.

MR. RAMEY: I think you asked him: Are their rights being violated and what can they do to protect them?

MR. KELLAHIN: And his answer was that they could join the unit.

MR. RAMEY: He answered the second part, he didn't answer your first question?

I'm going to sustain the objection. We do not feel that this is relevant to a forced pooling that they have.

MR. KELLAHIN: If the Commission please, I would like to discuss that if I may, for the whole thrust of Continental's opposition to this compulsory pooling is to protect the integrity of the Bell Lake Unit.

The Commission has approved the Bell Lake Unit as a proper conservation measure and the statutes provide that the owners in any pool where they have agreed upon a plan for the spacing of the wells whereupon a plan or method for distribution of the allowable fixed by the Commission or for any other plans for the development or operation of such a pool, which plan in the judgment of the Commission has an effect of preventing waste as prohibited by this Act and is fair to the royalty owners in such pool, then such plans shall be adopted by the Commission with respect to such pool, however, the Commission upon hearing and after notice, may subsequently modify that.

There has been no effort to modify the plan and pursuant to that statute the operators have entered into the Bell Lake Unit agreement which was approved by the Oil Conservation Commission on August 28th, 1953, and have been operating under the provisions of that unit agreement ever since.

The Bell Lake Unit agreement is such a plan as contemplated by the statute which I just quoted which is Section 65-3-14 (e).

Now the purpose of unitization is certainly material to the case we have here today. The joint operation of a common source of supply for the greatest ultimate recovery without waste, that is basically the purpose of unitization as stated by Sullivan in his Handbook on Oil and Gas Law, it says it makes possible the development and exploitation of the pool as a single producing mechanism in accordance with accepted scientific and engineering principles. The result is the maximum economic recovery of the oil and gas in place, and the division thereof among the respective owners. The Rule of Catcher is inapplicable because ownership is not conditioned upon reduction to possession through producing operations, but upon the terms of the parties' participation formula in the unit agreement.

And in those instances where unit operations can be instituted advantageously to the purpose of preventing waste or protecting correlative rights, or both, they represent the ultimate in conservation.

Now that is one author's statement on this.

Now I believe in the other order, the Commission found that what we were attempting to do here constituted a collateral attack on three hundred and twenty acre spacing. That is certainly not the intention in any sense of the word and it does not constitute a collateral attack. Continental Oil is the one that asked that Rule 104 be made applicable

to the Bell Lake Unit and we certainly believe in the three hundred and twenty acre spacing. We do, however, seek to protect the integrity of this Bell Lake Unit which has been approved by this Commission, by the Commissioner of Public Lands and by the United States Geological Survey, its plan of development has been approved by all three of these bodies which includes the operation of the unit as it is presently being operated.

The area involved in this Case is in the participating area, which was also approved by this Commission, by the Commissioner of Public Lands and the United States Geological Survey.

If this amounts to a collateral attack on three hundred and twenty acre spacing, it would appear to me that the application of Texas West amounts equally to a collateral attack on Commission Order Number R-355 which approved the Bell Lake Unit and approval of the application would be effectively removed from the Unit, the east half of Section 5, for the purpose of protecting seven thirty-seconds interest which has refused to join the Unit.

Now Continental as the operator has a duty to protect this unit, and particularly its participating area which this is in. The people who own interest in that east half of Section 5 have been participating in the production from the entire unit, and are presently participating in the

production from that Bell Lake Unit Number 14 as these people could do if they wanted to.

Now the purpose of our testimony is to show that correlative rights are fully protected, that is the purpose of the Unit in the first place. The Commission so founded it to protect correlative rights and to say that we cannot now testify to this because it is not pertinent to the issue, is to say that we don't have a unit agreement and this is not the case.

I have one other little item I want to read to you from Williams and Myers treatise on oil and gas law, where they say in Section ninety to ninety-three in regard to the failure of an owner to join in a unit. (Reading.) They say: It is obvious that one reason for the reluctance of royalty owners or operators to join in pooling or unitization agreements is that they expect to reap a greater economic benefit from going it alone than they can hope to reap under the voluntary agreement. That being so, it is also clear that to the extent a regulatory agency or court denies the non-consenting royalty owner or operator certain benefits of going it alone to that extent the agency or court encourages entry into the voluntary agreement. (End of reading.)

Now denial of this application of Texas West does not force them into this unit, they don't have to join. Mr. Madera didn't want to join when the unit was formed, and he

didn't join and he doesn't have to join now, but it is our position that if he wants to share in the production under proper conservation statutes and proper operations, then he should join the unit, but as to another well to be drilled in the east half of the section is unnecessary because his interests are fully protected if he just chooses to exercise his rights and this is the thrust of our testimony and if we are not going to be able to put that into the record, then we have no case.

MR. RAMEY: Mr. Kellahin, I think we will have lunch before we answer you.

(THEREUPON, the hearing was recessed for lunch.)

AFTERNOON SESSION

MR. RAMEY: The Hearing will come to order.

In response to stated objections of Continental Oil Company to the previous ruling of the Oil Conservation Commission sustaining the objection of Texas West Oil and Gas Corporation as to the availability of alternative remedies to Texas West, the following matters deserve mention:

1. Mr. Kellahin cited Section 65-3-14(e) to the Commission. This Section provides that a plan, and I quote, "shall be adopted by the Commission" with respect to a pool "Whenever it appears that the owners in any pool have agreed upon a plan. . ." of development or a unit agreement. Here we are confronted with a case where there has been no such agreement.

2. On August 20, 1953, the Commission approved Order No. R-355 which approved the Bell Lake Unit Agreement. This order merely adopted the unit agreement offer at that hearing and that unit agreement bound only the parties there to. Texas West, or its predecessor in interest, was not and is not a party to that unit agreement.

3. It has been stated that the objections of Continental do not amount to a call for compulsory unitization for primary or development purposes of the interest of Texas West. Such compulsory unitization is not authorized by the statutes under which this Commission operates. If the availability

of joinder in a unit is allowed to be considered as a valid objection to compulsory pooling, non-consenting interest owners within unit boundaries would be forced to join the unit in order to receive any benefits from their interests. This would, for all intents and purposes, be compulsory unitization for primary purposes by administrative order.

4. The statutes under which this Commission operates and all parties are familiar with these statutes, authorize it to compulsorily pool acreage whenever there are certain factors. They are:

a. Multiple ownership, either working interest or royalty interest, within a single spacing or proration unit,

b. interest owners in the proposed unit who have not agreed to pool their interests, and

c. one owner who has the right to drill has drilled or proposes to drill a well.

5. This case was called for the purpose of hearing a compulsory pooling application and the designation of the operator. Both Texas West, as the applicant, and Continental, the protestant, have filed application to force pool the East half of Section 5, Township 24 South, Range 34 East, Lea County, New Mexico. The case was advertised for that purpose and we expect all testimony to be directed and limited to matters properly within the call of this case.

Our previous ruling is reaffirmed, the objection of Texas West Oil and Gas is sustained, and evidence as to Continental's plans for development of the Bell Lake Unit is irrelevant and therefore not admissible. Mr. Kellahin's objections are noted in the record.

MR. KELLAHIN: I would also like to point out among the factors the Commission must consider in compulsory pooling is to avoid the drilling of unnecessary wells, or to protect the correlative rights or to prevent waste, and those factors must also be considered in addition to those you have enumerated.

MR. RAMEY: Yes, sir.

MR. HINKLE: We would like to point out that that is one of the "ors", or is in there twice -- or waste, or correlative rights.

MR. RAMEY: Yes, sir.

MR. HINKLE: We only need one of them.

MR. HENSLEY: Mr. Chairman, may I make inquiry of the Commission, if I understood the statement which you made, did you refer to the application which Continental filed in this case, or in a separate case, where a request that their application be consolidated for hearing whereby they would compulsory pool the interest of Texas West in a unit on the east half and be designated the operator?

MR. RAMEY: Yes, sir.

MR. HENSLEY: I'm glad I understood it that way, because at this time I would like for the record to reflect a motion on behalf of Texas West to dismiss in its entirety the application of Continental Oil Company which was filed on October 20th, if that is the application to which you made reference, for the following grounds:

One, that such application is untimely as a matter of law in that existing Order Number 5039-A is in full force and effect permitting Texas West Oil and Gas to drill a well at a standard location in the east half of Section 5, and will remain in force and effect unless altered or otherwise changed by this Commission as a consequence of this rehearing. As the Commission knows, this order permits Texas West to drill a well at a standard location in the east half of Section 5, and force pool the other mineral owners in the Pennsylvanian formation underlying the east half in conformance with Rule 104.

For such an application by Continental as they untimely filed to even be considered it would have been necessary for it to have been filed prior to June 10, 1975, which was the date of approval of Texas West's application by the hearing examiner.

Now, I would like to digress. I've got several other grounds, but I would like to digress for just two statements on that, to be sure this record contains them.

Each of these applications that Continental has filed in this case have been on the last day. They have a remedy, they had a remedy, it is waived now just like this remedy has been waived. They could have asked for six hundred and forty acre spacing, but they elected not to do that even though they have come into this Commission repeatedly and testified that this well will drain the entire section and I would like the record to reflect the exact sequence of events insofar as what remedy they had and what they have failed and refused to do.

Now the second ground upon which this application should be dismissed is as follows: Continental has waived its right to seek compulsory pooling itself by application for rehearing in this cause.

In accordance with N.M.S.A 65322 it is provided that within twenty days after the entry of an order or decision by the Commission that any person affected may file with the Commission an application for rehearing. As I have already mentioned, they filed it on the last day. The application in question was filed and the rehearing granted and the notice of rehearing published as required by law. Continental has elected this remedy and therefore is bound by it which precludes the Commission from considering their application which filed on October the twentieth, and by the way, after the well by Texas West was already spudded and

drilling, because that application to force pool the east half is totally inconsistent with every other argument they have made at prior proceedings in this cause.

Third, Continental is and should be estopped as a matter of law from filing the subject application for the following additional reasons: (a) It has been given the opportunity from the outset, back in February, to participate in the drilling of a well in the east half of Section 5, and they have repeatedly refused to do so.

(b) That although Continental has consistently taken the position that Well Number 14 located in the west half of Section 5 will drain that section, it has never pursued the remedy which I made reference to awhile ago, and that is for spacing on a six hundred and forty acre base, the only remedy they have got, and the reason they did not pursue that remedy, you can speculate yourself.

And finally that the subject application, as I have already mentioned, was filed after the well which was permitted to be drilled under the prior order of this Commission had already been spudded, and for those reasons, we would respectfully urge this Commission at this time to summarily dismiss this application which was filed on October 20th because otherwise we are looking at further injury to the correlative rights of Texas West, an operator, and the mineral owners who executed the lease covering the

seven thirty-seconds interest in the east half, they will be irreparably damaged if this matter is continued to be pursued on this basis.

MR. KELLAHIN: If the Commission please, we submit in the first place that the order he refers to is not a valid subsisting order as of this time. The application for re-hearing in and of itself terminated that order and the Commission must at the conclusion of this hearing enter a new order either pooling or refusing to pool this acreage.

Now if they do refuse to pool, the Commission does refuse to pool and sustains Continental's position then there is certainly no reason for application for forced pooling on behalf of Continental and should be dismissed.

As far as the timeliness of our filing, we filed according to the New Mexico statutes and they provide that we can file within twenty days and we filed within twenty days and Texas West well knew that we were going to apply for a rehearing, but they assumed this risk and that is their problem, not ours.

If the Commission refuses to grant compulsory pooling we can proceed with ours. Now when Mr. Hensley says that our application is entirely inconsistent to the position we have taken here, I think if he read the application carefully we admit this. I don't think a well ought to be drilled on it, but if a well is to be drilled, it shouldn't be drilled

seventeen hundred feet from the best well in the area, an exploratory well should be drilled in the southeast quarter of that section and not where Texas West is locating their well and that is the reason for the application, so I don't think it would be timely to dismiss the application here.

MR. RAMEY: Mr. Hensley, we think that a ruling on this at this time would be premature. We will rule on that at some later date.

MR. HENSLEY: Thank you.

Q. (Mr. Kellahin continuing.) Mr. McWilliams, I believe that in connection with your testimony we overlooked having you identify Exhibit Number Thirteen; would you please identify that exhibit?

A. Yes, sir. Exhibit Thirteen is a log section from our Bell Lake Unit Number 16 showing the four Morrow sand intervals and the completion interval of our well, as well as the intervals tested.

Q. Now you heard Texas West's testimony, Mr. Dunnavant's statement that in his opinion the highest risk factor permissible should be assigned if they obtain compulsory pooling in this unit. What risk factor do you feel should apply to this well?

A. Well, I agree with Texas West's statement concern- the risk of Morrow development. When you talk about Morrow development, when you talk about Morrow development in

general, but when we talk about the specific location seventeen hundred feet from the Bell Lake Unit Number 14, then I'm in disagreement with them. I think we will present testimony by another witness here who will help substantiate that.

I feel with respect to their well offsetting 14 that there is no risk, a very low risk, and I feel there should be no risk factor assigned to that well.

Q. Mr. McWilliams, were Exhibits One through Thirteen inclusive, prepared by you or under your supervision?

A. Yes, they were.

MR. KELLAHIN: At this time I would like to offer into evidence Exhibits One through Thirteen.

MR. HENSLEY: No objection.

MR. RAMEY: Without objection Exhibits One through Thirteen will be admitted.

MR. KELLAHIN: This completes the direct examination of the witness.

MR. RAMEY: Mr. McWilliams, I would like to ask you one question that your counsel asked you and you didn't answer. Do you feel that the correlative rights of Texas West are being violated at this time by your well in Section 5?

MR. McWILLIAMS: Yes, sir.

MR. RAMEY: Thank you. Any other questions?

MR. HENSLEY: Yes, I have.

MR. RAMEY: Mr. Hensley.

MR. HENSLEY: Thank you,sir. I have just a few brief questions of the witness.

CROSS EXAMINATION

BY MR. HENSLEY:

Q. I take it from your testimony, Mr. McWilliams, that you agree with the witnesses for Texas West in this proceeding, that the nature of the formation that we are dealing with, the Morrow, is stratigraphic in nature and is deposited in lenticular sands, is that correct?

A. That's correct.

Q. Is it a fair statement to say that it is not considered a homogeneous reservoir?

A. Yes, that is correct.

Q. Now you indicated, as I recall, that the areal extent of this reservoir underlying the Bell Lake Number 14 well embraces some fourteen hundred and forty acres, is that correct?

A. Yes, sir.

Q. That calculation assumes, does it not sir, that reservoir in fact is homogeneous?

A. Yes, that is a minimum size calculation. The reservoir could, in fact, be greater.

Q. It could be smaller?

A. No.

Q. The porosity and the thickness of the sand could not be greater than it is underneath the wellbore, surrounding the wellbore; why couldn't it be double a hundred feet from the wellbore?

A. Well, I think that when you look at all of the wells that have been drilled you just don't see that kind of variation within the Morrow section?

Q. But you don't know that?

A. I don't know it specifically.

Q. Actually the exhibits that have been introduced in this proceeding show conclusively, do they not, that there is no homogeneous reservoir characteristic here. These lense phase in and they phase out and they finger inside of each other, they are wet in some areas, they are productive in others, is that not correct?

A. That's true.

Q. So this is a hypothetical assumption that the entire reservoir surrounding the wellbore is in fact homogeneous as you have indicated and that that homogeneous characteristic extends for the entire areal extent sufficient to hold the material balance calculations which you have made?

A. Yes, sir.

Q. And yet we know that such is not the characteristic?

A. Well, I don't know that we know that, that is a possibility.

Q. Now, I believe if I understood your testimony correct, you indicated that in your opinion there was no risk of not encountering production or productive sand in the Fourth zone in the Texas West proposed location? Did I understand that correct?

A. Yes.

Q. Did you have anything to do with the determination to drill the Bell Lake Number 16 Well?

A. Yes, I did.

Q. Did you have the same feeling with respect to the probabilities of encountering a productive zone in the Fourth zone when that well was spudded?

A. We recognized that we were taking a risk because we were moving out some four thousand feet; so, as I say, we recognized that the Morrow is risky and the further you go from a well the more risk you assume, but still we wished to explore and to develop the unit reserves, to evaluate as much of the unit area as we could with that. We felt that we could from development and review of logs that we had a reasonable feel as to the direction that the reservoir that Number 14 is completed in and that is essentially why we drilled there.

Q. Isn't it a fact though when you drilled the Number

your primary objective was, in fact, the Fourth sand?

A. It was a major target for the working interest owners, assuming that we have got a productive well there and found no other zone productive, then it would have been an uneconomical well for the Bell Lake working interest owners, but it afforded us an opportunity to explore at very low risk because although we wouldn't make money, we wouldn't lose a great deal. So rather than risking a million dollars on our development well, we were essentially risking the difference of say, a hundred thousand or something like that.

Q. But it was one of the major objectives?

A. Yes.

Q. You were surprised when it was non-productive, particularly after you saw the log, were you not?

A. Yes.

Q. And there is no reason to believe that same situation won't exist on this proposed standard location on this east half, is there?

A. Yes, there is a reason to assume it won't exist. There is a reservoir limit test which we will discuss in greater detail.

Q. Are you qualified to discuss it?

A. No, we have a witness who is much more familiar with it.

Q. You did confirm the material balance calculations?

A. Yes, sir.

Q. And there is nothing from those calculations whatsoever from the engineering standpoint that would indicate that the Fourth zone would be productive under this proposed location, is there?

A. The material balance merely tells us the size of the reservoir, it doesn't give anything about the direction.

Q. You have no idea in what direction it goes?

A. Not from the material balance sheet, you have to have additional information.

Q. Okay. Now is it your testimony also that the prospect is that the proposed location in the east half would not develop new reserves?

A. I don't think you can say that it would not, I think you can say that the likelihood of it is not as great as if you were to drill farther from the well because you have already drilled through those non-productive sands in the Bell Lake Unit Number 14 and the chances of it changing greatly in that distance are not all of that great, so it is possible, but not likely.

Q. Well, the exhibits you have introduced in this proceeding show at least two reservoirs that I recall, of a very limited areal extent, do they not?

A. Yes.

Q. Is there any reason why those reservoirs might

not be present in the wellbore of the proposed location in the east half and in the number two stringer?

A. I said there was no reason, it is just a question of your judgment of the likelihood of that.

Q. Well the fact of the matter is, you don't know, until you drill it, do you?

A. No, conversely we don't know that they do exist either.

Q. Right. Now I just want to touch on one minor point and that is, there have been several questions asked today and possibly you covered it in your direct testimony. Let me direct your attention, if I may, to the Antelope Ridge Number 2 well which is approximately due east of the proposed location of Texas West, are you familiar with this well?

A. Yes, I am.

Q. What zone of the Morrow was that well completed in?

A. Antelope Ridge 2 is perforated in the First and Second Morrow sands, according to the information I have.

Q. Okay. Is it a prolific well from the First sand?

A. I can't answer that since both sands were opened simultaneously. All I know is that it is a prolific well from the First and Second sand. As to which one is producing I'm not sure. Both are perforated but that doesn't necessarily

imply that both are producing.

Q. You had a calculated open flow on that well of thirty-eight million, is that right?

A. That's right.

Q. How far east does that Number One or Two zone go; does it go over underneath this proposed location for Texas West in the east half of 5? I'm sorry, how far west?

A. I don't know.

Q. It is reasonable to assume that it might, is it not?

A. I guess it would be.

Q. And if it is there then substantial reserves, new reserves, would be found as a consequence of the proposed drilling?

A. Well, I'm not quite sure what you mean by new reserves.

Q. Well, let's put it this way: Your well which is currently -- your number 14 well in the west half of Number 5 certainly would not be draining it?

A. Not at the present time, no.

Q. Well is it productive in the First zone?

A. No.

Q. Okay. So there is no possibility that it could?

A. All right.

Q. Okay, so those would be new reserves if that zone

is there?

A. Well, it would be new, say to that location there, but they are developed in the Shell well and they are being produced there, so I'm not really sure what you call new.

Q. Well, would that location of that Shell well which is over a mile away in your opinion drain the east half of Section 5?

A. If the sand were there it could, I don't know whether it is or not.

Q. You don't know it?

A. No, I don't think anybody does.

Q. Now what about the Number Two zone, I believe there has been testimony in this record that at least you've got reason to believe that it is present in your Number 16 well, do you not? It's producing there?

A. We have -- well, let's just say that a sand in the Second Morrow is producing in our Number 16 well.

Q. Is there any reason why that reservoir surrounding the wellbore of your Number 16 could not be so designed that it reached over into the area where the proposed Texas West well is going to be drilled?

A. No, there isn't any reason. I think that the likelihood would be that it would be greater to the south of the Texas West well if that were one of their concerns.

Q. Why would that be?

A. Well, just by proximity, straight line geology, you might say. We have a second sand producing in 16, you have a second sand that is possibly producing there and just that it is closer to the trend between those two wells and the farther north you go the more apt you are to get off the trend.

Q. This is a hypothetical assumption?

A. Yes.

Q. Is there any basis geologically in the area to assume that these lenticular sands have their deposition in a northeasterly trend?

A. In a northeasterly trend?

Q. Uh-huh.

A. Yes.

Q. And if that were true, your well might intersect the wellbore of the proposed well, is that true?

A. It could be, it's a possibility.

Q. Okay. Is it your testimony that in your opinion that this Bell Lake Unit Number 14 well is going to drain the entire section?

A. Yes.

Q. Why didn't Continental make an application for six forty spacing?

MR. KELLAHIN: If the Commission please, I object to the question. That is asking for a legal conclusion.

MR. RAMEY: Sustained.

MR. HENSLEY: I'll withdraw the question and pass the witness.

MR. RAMEY: Mr. Stamets.

CROSS EXAMINATION

BY MR. STAMETS:

Q. Mr. McWilliams, did I understand your testimony to be that the reservoir for the Number 14 well was a stream channel?

A. We think it is a channel-type deposition in a delta, deltaic environment.

Q. A stream channel?

A. Yes.

Q. In a stream channel, you also refer to that as a large lense, I presume now what you are talking about, you are talking about a large lense, you are looking at the stream channel from the end rather than, say, the long dimension?

A. I was referring to the reserve the thing contained, the thirty-six billion, when I say it was a large lense.

Q. The lenticular shape of the stream channel is the cross sectional area rather than the lengthwise dimension?

A. Yes.

Q. Okay. Are you familiar with other Morrow stream channel pools?

A. One.

Q. What's the name of that pool?

A. Empire Penn.

Q. Are you aware of the drilling in that area; were there wells that tried to intersect this stream channel which did not?

A. Yes.

Q. So when you are drilling for a stream channel you cannot always tell where it is headed?

A. That's true.

Q. Now in answer to one of Mr. Kellahin's questions I understood you to say that the second well, the well in question here, if it encountered the exact same reservoir as found in Continental Number 14 well, that it would not add to the reserves, wouldn't make the reserves any greater?

A. Within that reservoir.

Q. Right. Now did you intend to say that two wells spaced that far apart in that reservoir would not recover more gas from the reservoir than a single well location?

A. I think that the P over Z curve that we have introduced shows that the reservoir is being adequately drained by the Number 14 well.

Q. That wasn't my question. My question is: Will two wells in that reservoir, spaced as proposed, recover more gas than one well?

A. In my opinion, no.

Q. Not a single MCF difference?

A. Well there could be perhaps a very small difference due to economics as Mr. Hickman testified. You have two wells so you could add a small amount that way, it would be a very small amount, in my opinion, insignificant.

Q. But there would be additional recovery from the reservoir, two wells will drain more than one?

A. You have to say very slightly, yes.

Q. If Texas West were the owner and operator in the west half of Section 5 and Continental were the owner-operator in the east half of Section 5, would you recommend to Continental's management that they drill a well in the east half of Section 5?

A. Repeat that again, please.

Q. If Continental were the owner of the east half of Section 5 and Texas West was the owner of the west half of Section 5 and the operator of the Number 14 well, would you recommend to Continental that they drill a well on the east half of Section 5?

MR. KELLAHIN: If the Commission please, I object to that question because it asks the witness to make assumptions which are not true, according to the record here. I'm not talking about the ownership, just swapping the ownership, but there are other factors which enter into the

procedure which would have to be read into the question to be properly answered.

MR. RAMEY: I will sustain your objection.

MR. STAMETS: That's all I've got.

MR. RAMEY: Any other questions of this witness? He may be excused.

(THEREUPON, the witness was excused.)

JAIME A. LESCARBOURA

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. Yes, my name is Jaime A. Lescarboura.

Q. How do you spell Jaime?

A. J-a-i-m-e.

Q. Did I spell Lescarboura correctly?

A. L-e-s-c-a-r-b-o-u-r-a.

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

A. I'm a research scientist with Continental Oil Company in Ponca City, Oklahoma.

Q. How long have you held that position?

A. Since 1967.

Q. What is your educational background?

A. I have a B.S. in chemical engineering, 1959, University of Kansas. M.S. in chemical engineering, 1961, University of Wisconsin. Ph.D. in chemical engineering, University of Kansas, 1967.

Q. What type of work do you do as a scientist for Continental Oil Company?

A. I specialize in well testing. I specialize in running buildup tests, fall-off tests, drawdown, interference tests, pull tests, there is a whole battery of testing I have to do with well testing.

Q. What does a degree in chemical engineering have to do with that type of work?

A. The basics of petroleum engineering and chemical engineering are the same and so we are essentially interchangeable. Excepting the geology, in the fact that reservoir engineering deals mostly with fluid flow and response, pressure responses and the discipline of chemical engineering covers those, as well as petroleum engineering does.

Q. And that is the use you make of your training as a chemical engineer, is this correct?

A. Yes, I got my training as a chemical engineer, but my experience is as a petroleum engineer.

Q. In connection with your experience as a petroleum engineer, what does that consist of, what have you done?

A. Well, initially when I went to work for Conoco I was in well engineering, that is I specialized in well completions and stimulation. In 1971 I was transferred into the area of well testing and I design, conduct and analyze well tests of both types.

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

MR. RAMEY: Yes, they are.

A. I'm also a registered professional engineer in Oklahoma if that has any relevance.

Q. (Mr. Kellahin continuing.) Mr. Lescarboura, at the hearing on July 25th, 1975 before this Commission, Herbert C. Walter testified as to certain well tests that had been made in connection with the Bell Lake Unit Well Number 14. Are you familiar with those tests?

A. Yes, I am the one who designed and analyzed that test under his supervision.

Q. Did you enter into all of the work that Mr. Walter did in connection with that test, or do it yourself?

A. It's the other way around, I did the work and he entered into it by reason of being my supervisor.

Q. The tests were actually performed by you?

A. No.

Q. I mean the information was --

A. Yes, the design of the test and the analysis

were performed by me. The test proper was run by Sperry-Sun and the Hobbs Division of Continental Oil Company.

Q. Would you briefly explain just what was done in connection with this test?

A. If I may, I would like to go back to the initial test that was run in that well and have Exhibits Fourteen and Fifteen passed on, including a copy for me, please.

Q. How many exhibits do you have?

A. I think it's four.

(THEREUPON, a discussion was held off the record.)

A. The only reason we presented the Monograph, an excerpt from the Monograph, is to avoid the need of a blackboard. All I needed was one equation in figure 10.1.

In that well the first thing that was done was a short drawdown followed by a buildup right after the well was completed, and that is what is shown in Figure One, the buildup test following the drawdowns. That one shows a nice gauge straight line, a line from which you can determine the formation capacity which lasted about seven hours. At the end of that the Amerada gauge that I was using on this well ran out of resolution and by resolution I mean the ability to detect. A pressure change was fine. Amerada didn't have enough resolution, with a ten thousand pound gauge you cannot read pressure changes that are, say, smaller

than one pound or something like that.

There is an equation in the Monograph which is really -- in another part -- I think it is equations. Equation 11.2 which is essentially the same as Equation 10.9.

MR. HINKLE: What page is that on?

A. On ninety-five, but I'm not using this equation here in the way it is used here, I am using it in the radius investigation form which is given in 11, the same equation.

And what this equation says, if you have a buildup with a straight line that extends for so many hours, you can plug the hours into this equation, the K that you have determined from the buildup, the porosity which you have determined from cores and logs, the viscosity that you know from sampling the gas and the compressibility that you can calculate, by knowing the gas, and you can calculate how far you have investigated into the formation.

By doing this, and this buildup gives twenty-four hundred feet. In other words, there are no faults within twenty-four hundred feet of this well. Now that is if you use a conventional accepted Monograph formula. Now we know from our experience that this formula is a little bit optimistic and we add a one half in front of it. So what we can really say with this first buildup is that we were able to determine the gauge; we were able to determine the formational capacity; we were able to determine the wellbore

condition, and we are pretty sure that there is no fault within twelve hundred feet of this well. That is all that the first buildup really showed.

Which by the way, also this buildup provided the first point for the P over Z plot and since it was drawdown lightly, it is a very reliable data point.

MR. RAMEY: Are you assuming a circular condition when you say twelve hundred feet?

A. No, all it means is that we know there is nothing within twelve hundred feet, twelve hundred and ten feet if we were that accurate.

Q. (Mr. Kellahin continuing.) Do you mean a barrier?

A. I mean a barrier or a pinchout or a fault, a water-gas contact, anything that terminates a reservoir, that presents a barrier.

MR. RAMEY: This is not in a circular --

A. Not necessarily, no assumption has been made.

MR. RAMEY: Could you have it north and south?

A. No, except in this case, it means that there is a circle of twelve hundred feet that it is impaired. Yes, correctly. This assumes circular movement out.

MR. RAMEY: It couldn't be ten feet wide and twelve hundred feet long?

A. No, this would show in a different shape, you would not get a straight line.

This is what I wanted to refer you to this, rather than drawing on the board, Figure 10.1, page ninety-three. This shows what a barrier would look like in a buildup. That first straight line that you have, the first from eight to five in the log of t plus delta t over delta t plot, this first straight line is the formation flow capacity straight line and then the effect of a barrier will cause a sharp bend upwards which would terminate having a slope twice, the original slope and then as you can see from the Figure 1, there is no such a bend in the data of the first buildup. So that is why we feel we can say that we did not see any barriers or any pinchouts during the first buildup.

Now when this problem was given to me, we were told that we knew that we had a limited reservoir because by then we had drained the reservoir for about a year and the pressure had gone down enough that we had the second P over Z plot at that point. So the question was not anymore to determine the location of a barrier, we knew that we had a fully bounded reservoir. The question was to determine the shape of it and the distance to the nearest barriers. In other words, we knew the shape from the P over Z plot. I don't mean the shape, we knew the size of it from the P over Z plot. And we said the same thing as Mr. Hickman said as well, could this thing be in the middle? And we anticipated that that question would be asked and we

designed a buildup test to show what the distance was to the nearest barrier. I participated in this design with the Hobbs Division and by design I mean, we take the data that we obtain from the first buildup, that is the formation flow capacity, and the information that we have from logs and run a test on paper. We have a computer program that simulates reservoir behavior and we can simulate upon the reservoir and then we run this builup and plot them and see what type of gauge does it take to measure it. In this specific case the design showed that the conventional Amerada type, which is a Bourdon-tube gauge, that is described on a two by five brass shim stock which was blackened was not adequate because we would run out of resolution way before we had a chance to see anything.

The next was the Sperry-Sun high precision gauges which are gauges which have ten to twenty times, actually twenty times the span of an Amerada. They do this by winding. They have the same size shim stock but they go turns, so they can make twenty turns where the Amerada makes only one. That gives it about twenty times more resolution, or twenty times more ability to detect pressure.

And it showed that this gauges would do the job perfectly, so we contracted with Sperry-Sun who is a service company who takes good care of their gauges and are very reliable and well known in the industry to run this buildup

test, which they did and this is the data shown to you in Figure Two.

Now in Figure One the bottom scale was a t plus delta t over delta t. This has to be resorted and buildup analysis when you have a short drawdown. The first buildup was plotted on a t plus delta t over delta t scale and the reason for that is that you must do that when you have a short flow period.

Q. (Mr. Kellahin continuing.) The exhibit you are referring to is Exhibit Sixteen?

A. Sixteen, yes, right. Well, I was referring now to Exhibit Fifteen, going back to the original buildup.

MR. RAMEY: Wait a minute, let's get this straight.

A. The one that you have in your hand is Fourteen, yes.

MR. RAMEY: It's Figure One?

A. That's right, and Sixteen is Figure Two and Seventeen is Figure Four.

In the case of the second buildup because the well had been in constant production at a fairly steady rate for a long period of time there was no need to resort to this t plus delta t, you can plot a straight log of time, shut-in time that is, and you can get this same thing, you get this straight line.

And so to all apparent purposes had we only this buildup here, without knowing that the reservoir was limited, we would have said, "Yes, we have a straight line and we have a deviation upward which would indicate a fault."

But we know this is not so because we know from P over Z and from the lithology and from all of the information that has been testified about the Morrow that this was a large reservoir for the Morrow, but a small reservoir in the formation to what we are used to in general practice, especially abroad.

So we knew that the conventional analysis would not work to determine the size, the shape and the location of the barrier. What we had to do then was resort to technique that is also covered in the Monograph on Page Thirty-two. It is called Drainage Volumes by Curfitting and there is this work here and then there is a figure that I showed. What this says, it says when you have a limited reservoir and you have drained it to the point where you have lowered the pressure sufficiently you then get a curve, the shape of a curve that comes from a common buildup and now by the shape of that curve you can determine the shape of the reservoir. And there has been quite a bit of work and literature on this subject. One of the most important papers is by Henry J. Ramey, Junior and Earl Loffer, Junior,

who at the time were at Stanford and they show a whole bunch of different curves. So by just starting up and by looking at those curves, you can look at your buildup and you can look at the curves and you can make a pretty good estimate of the general elongation that you have to put in your model to be able to match the data that you obtained.

In the case of the Monograph, they say to do it by curve matching, by matching curves. Well, we don't do it by hand because it is a very onerous job and we do it by computer. We have a computer program that reproduces the curves as put in this paper by Hank Ramey and Earl Loffer. We do it by cut and try. You put in a shape. We knew that because of the shape of the curve that it had to be a fairly elongated reservoir and we, of course, knew this because it is of a depositional type reservoir anyway. We started trying different sizes until we finally homed in and got a curve that matched this curve here.

We were able to match a straight line perfectly and we quit when we had a departure that bracketed the one that we observed and actually measured in the field, and the shape of the reservoir is given in Exhibit Seventeen. Seventeen is one of the runs that was made and this one I used as an exhibit because it shows the whole curve from real early time all of the way. As you can see in this highly permeable lense of Well 14, the true formation flow

capacity straight line is established real early and you are actually out of it and another second straight line at the time that we measured this buildup.

So the straight line that we've got in Exhibit Sixteen is not really the true formation for capacities, it is a ficticious thing that gives a little bit high formation flow capacity, but we knew what it was from the first buildup so there is no problem there.

Then we changed the location of the well until we got a match and it turned out that the curve that overshot our departure said that the well was two thousand feet from the nearest boundary and the one that undershot it said that it was twenty-five hundred feet from the nearest boundary. So I think on that basis we can pretty well -- and it was closer to twenty-five hundred feet simulations than it was to the two thousand feet simulations, so we can roughly estimate it to be about twenty-three hundred feet, the nearest boundary, that is the one in the little schematic in Exhibit Seventeen, the one that is to the right. That is the closest one in this case.

This does not tell us what orientation -- and we know it is not a completely retangular reservoir also, it is immaterial, it could be oval shape but the principle still applies. It shows that the nearest boundary is between two thousand and twenty-five hundred feet.

Q. (Mr. Kellahin continuing.) Now would that indicate that there is no barrier between the Number 14 Well and Texas West's proposed location?

A. That is correct.

Q. Would it indicate that Texas West's location should encounter the Fourth Morrow sand?

A. That is correct.

Q. And in your opinion would it?

A. Yes, I think in my opinion if they drill seventeen hundred feet from Well 14 they will encounter the same lense that we are draining in 14.

Q. Do you have anything to add to your testimony, Mr. Lescarboura?

A. No, I don't think so.

Q. Now, has Continental used the system that you have described in other areas?

A. Oh, yes.

Q. Have you had any experience which would indicate that your calculations were correct?

A. Yes, sir.

Q. Could you give us a few examples of that?

A. First I should point out that this buildup test on a long term like that, the people call it reservoir limits testing and I think that is a bad name because reservoir limits testing was originally started on drawdowns and some people

had bad experiences with them and they got a bad reputation. We would rather call them boundary determination tests or just plain buildups.

It can be used for different things. In a well that is fairly new, that you have drained for only a -- a length of time has to be enough to create somewhat of a depletion, but not enough that you can do a P over Z plot. This type of test can be used to determine the volume of the reservoir, but not the shape.

Now when you have a case like this, the same type of test, now when you know the volume then it can be used to determine the shape.

We did a test of the same nature in the Hadlock Number 1 Well in Oklahoma, in western Oklahoma and there was the same type of thing, a lenticularity where the reservoirs were rather limited and the instructions we had from our Division was that we were to prove ten billion reserves because they were going to drill six development wells of about a million a piece and we ran a test which was a six-week drawdown followed by a six-week buildup and we got something similar to this, except that this time the well was fairly centered in the lense so we got a nice, instead of an upward type of swing, we got a downward swing. We used that and we predicted a three point four billion total reserve, causing all sorts of consternation

in the Division, but the extra wells were not drilled, but they kept producing that one so we finally we had the entire well history to abandonment and by the time of abandoment the cumulative production was three point two billion. In view of the fact that you abandon a little bit above zero pressure, our estimate was, I think, right on the money.

We have used the same type of test to detect barriers and find areas that have been undrained. We had a case in Louisiana, I think in St. Martin County, where we have two gas wells, and the geology showed that there was a possibility of Twin Falls, that is kind of slanting like this. Somebody said, what about if we are not draining, if there is no communication between those two wells, we are not draining those two, the space between the Falls, so we ran a dual test on each side, on each well and we found the distance to this fault was such that it showed that there was about, oh, four or five hundred feet between those Twin Falls. We drilled a well right in the center of that, it came in as here they call a prolific well. The pressure on it was two thousand psi I had on either one of the wells on the side, so we were able by this method to find an area that had been completely undrained.

We used this same type of testing in Liquidators Number 1, I think, in Louisiana. This time it was in oil. There was an oil reservoir with a gas-cap drive, and one of

the wells had already turned to gas. Of course, we shut it in because oil being so much more expensive than gas we didn't want to deplete the drive. But the well that we had was a producing well and they said well, why don't we just go and drill one -- I better say graphically, here was the well that was turned to gas, here was the well that was producing two or three hundred barrels of oil a day with very low gas-oil ratio. They said, why don't we drill a well somewhere here in the middle and really, you know, drain this thing rapidly. So what we did, we tried to determine the location of the gas-oil contact. It is not a barrier there, but it changes, the mobility of the fluids change and you can't detect it by this type of test and the tests show that it was rather close to the oil well and we recommended that the well not be drilled, which they didn't do, and about three months later the gas-oil ratio in this well started shooting up and eventually eight or nine months after that they had to abandon because it was just essentially a gas well.

So those are three examples of where this test was eminently successful.

Q. Can this type of technique be used in any type of a reservoir?

A. Yes.

Q. And it is adapted to the Morrow formation in the

Bell Lake Unit?

A. I don't see why not.

Q. And in your opinion does it accurately reflect the absence of any barrier within twenty-two hundred feet?

A. Yes, I think so.

Q. Were Exhibits Fifteen, Sixteen and Seventeen prepared by you?

A. Yes.

Q. And what is Exhibit Fourteen taken from, please?

A. Fourteen comes from the Monograph which is up to 1967, was the accepted -- it is the accepted book on pressure buildup and flow testing wells and there has been a little bit of progress since then, but the basics are contained here. This was put together by two experts from Shell, the review was done by a committee of SPIAE members who are all expert in the area, so this is essentially something that had been approved by the profession in general as a reference.

Q. Do you agree with it as a reference for the type of work you are doing?

A. Oh, yes. There are some areas outside of this that we have disagreement because we have advanced beyond that, but the areas that I have covered, the only progress we have made is to expand the number of shapes of curves and so forth, but the principle is still the same.

MR. RAMEY: Would you identify that by name?

A. Well, it is actually SP Monograph Number One. It is Pressure Buildup and Flow Testing Wells by C. S. Matthews and D. G. Russell.

MR. KELLAHIN: At this time I would like to offer into evidence, Exhibits Fourteen, Fifteen, Sixteen and Seventeen.

MR. HENSLEY: No objection.

MR. RAMEY: Without objection they will be admitted.

CROSS EXAMINATION

BY MR. RAMEY:

Q. Mr. Lescarboura, what effect would a thinning or thickening of pay have on this well?

A. This type of test delivers a volumetric average of whatever you are measuring, so it puts out a KH, it doesn't put out the permeability, it puts out a composite of the permeability and the thickness. So if I had an enhancement of pay by the KH increasing, then it would show you would not get the straight line, the line would change slopes and it would be almost impossible to match it by computer.

Q. But you can pick out the thinning of pay?

A. Up to a certain amount. If it is only a certain percentage of the net pay, no, you cannot pick it out. All it does, it just gives you a -- if it is a thinning out, then

you estimate a reservoir that is actually larger than you see.

Well, here we are working two things out, if it is thinning out then it means that the P over Z method determines a reservoir that is actually larger than they determined and then since I'm using that number I determined that the barriers are actually -- I determined the barriers are closer than they actually are, so that helps and you know, of course, that the contrary thing hurts in that the pay is actually enhancing.

Q. But you do show, according to your chart here, that the nearest barrier is to the east of Well 14?

A. No, I don't show -- do you mean the diagram here?

Q. Yes.

A. This is just a demonstrative diagram. All I show is that I have a reservoir of roughly elongated shape, a rectangle being a good approximation.

Q. But it would be setting in this direction?

A. Oh, yes, definitely.

Q. It is not sitting east-west in this case?

A. No, sir. However, if I believe as I do very strongly, that there is a barrier within two thousand feet, it is immaterial which direction it points out. You still, anywhere you drill within seventeen hundred feet is going to be into this reservoir.

Q But you could detect if you had twenty-five hundred feet for a thousand feet and then it suddenly dropped off to five feet, you would pick up a barrier?

A. Oh, yes, we can pick up pinchouts, they don't have to be total pinchouts for us to detect them and we can also detect improvements in pay.

MR. RAMEY: Thank you. Any other questions?

MR. ARNOLD: Excuse me. In the same connection, I was just wondering how you fixed that ten thousand foot dimension?

A. The shape of the curve determines the size of the, how much originates, in other words, how many more times do I have to be in this direction than in that direction, and it turned out in this case to be four to one, approximately. No, two to one or something like that from the well.

So I determined the fact that this had to have a certain elongation and then knowing the total area from the P over Z plot, then I determined what the shape was, I mean what the distances were.

MR. RAMEY: Mr. Hensley.

CROSS EXAMINATION

BY MR. HENSLEY:

Q If the Commission please, Mr. Lescarboura, are you familiar with the testimony that Mr. Walters gave in

this proceeding?

A. Oh, yes.

Q. Are you using the same calculations he used?

A. What part of the testimony are you referring to?

Q. Well, he came up with a conclusion of some forty-four hundred feet and he said that wasn't very reliable so what he was going to do was take a factor of two and just split it in half.

A. No, that is not what he said at all. I recommend you read the testimony again.

What he said is, he said if you were to take this buildup, as a conventional buildup, not knowing that you had a depleted reservoir, then you would say, okay, I have a deviation here which I will take as I would interpret it based on Figure 10.1 of Exhibit Fourteen, and from that I can calculate the distance to this break and determine the distance of the fault. But that is only applicable if you don't -- this is such a newly drilled well that it has not yet started to deplete the reservoir and we knew by the time we run the second buildup that this wasn't. Now in the first buildup that applies because in the first buildup we did not produce it hard enough to deplete the lense at all.

Q. You are talking about the second buildup being the information reflected by Exhibit Sixteen?

A. That's correct.

Q. Well, that is the exact same testimony that Mr. Walters testified from.

A. Well, Mr. Walter was saying, if we interpreted that that way then it would show that the fault to be forty-four hundred feet and then as I mentioned on this thing, we know that even though it is an accepted standard in the industry it is optimistic. But it is really not applicable in this case because we have a depleted reservoir.

Q. So you didn't divide your results by two?

A. Yes, I did.

Q. Oh, you did?

A. Oh, yes. Not on the computer matches and neither did he. The computer matches and the calculation of the distance to the boundary by the equations on the Monograph are totally different methods of obtaining the same, you know, the same value. All I'm saying is the method of the regular investigation of the distance to a fault is only applicable in what is mathematically called an infinite reservoir, which definitely this is not, it is very finite.

Q. So if your result, and I'll get into this in more detail under your so-called "designed" and I use that in quote, reservoir test, was the conclusion that the nearest boundary was two thousand to twenty-five hundred feet, is that the result of a farther limit than determined by this calculation and then dividing it by half?

A. No, it was not determined by any calculation, it was determined by computer match of the data. In other words, by putting into the computer the appropriate porosity, appropriate fluid properties, the appropriate gauge as calculated from the first buildup and then varying the size of the reservoir until we got a reproduction of the actual data we had obtained.

Q. That is reservoir modeling then is what we are --

A. Essentially.

Q. Which is theoretical?

A. No, it is not theoretical, it has been quite proven as three instances where we have corroboration that our methods are correct.

Q. How long have you been involved, sir, in running these pressure buildup tests and making calculations utilizing these criteria?

A. Four years.

Q. Have you only found that in four years there have been three times that it has proved right?

A. No, and what happens is this: To do one of the tests you have to shut-in the well, this is a very particular case where the gauge is so good that a very short shut-in was sufficient, but even then we had to shut-in for fifty hours and lose that production. It is very difficult, unless there is a need demonstrated like in this case for a hearing,

to talk a division manager into shutting in the production for six weeks like we had to do in this Hadlock well.

Q. You didn't shut this production in for six weeks?

A. No, because I said in this specific case the permeability was very excellent, about a hundred and fifty million dollars.

Q. But you don't know how far that permeability extends from the wellbore, do you?

A. Well, I know that the combination of the permeability and formation thickness extends to at least twelve hundred feet here and at least from that probably twenty-five hundred or more.

Q. Have there been a multitude of circumstances and instances, Mr. Lescarboura, where this formula has utterly failed, as far as the determination of reservoir limits?

A. Generally speaking, whenever this has failed, it is because the tests were not designed properly and they were not run properly.

Q. Well, it also fails, does it not, any time you are dealing with a heterogeneous reservoir, as opposed to a homogeneous reservoir?

A. No, sir, that is not correct.

Q. It's not?

A. No.

Q. You mean these calculations don't presuppose a

homogeneous reservoir?

A. They do. They presuppose a homogeneous reservoir, but it is an averaging procedure. Now if you mean by heterogeneous the more in general, yes, I would say this method would fail. But within the lense, this lense is probably more homogeneous than the rest of the Morrow. It has to be to have the productivity that we have.

Q. Let me just ask you one question before I forget about it. Are you familiar with Continental Bell Lake Unit Number 16 well?

A. No, all I know is what I heard today in this testimony.

Q. Was your office, do you know whether or not of your own personal knowledge, your office was requested to make a reservoir limit study before Continental spudded that well offsetting the Number 14?

A. I'm not sure I understand your question.

Q. Did you run any reservoir limits tests before the Number 16 well was drilled?

A. I don't even know when the well was drilled.

Q. You would know, wouldn't you, whether or not it was drilled?

A. No, not unless -- I provide a service w[illegible]h Bert Walter for the entire Continental Oil Company, including foreign, and I only enter into a situation when my help is

specifically requested.

Q. I see.

A. And usually because of the urgency and the time limits we are given just the information that is in regards for us to do the test that we are required to do, so I cannot speak of things that have not been part of my --

Q. Well, let me be a little more specific. When did you conduct this test?

A. Over the weekend of the Fourth of July, I think.

MR. HENSLEY: I would ask the Commission to take judicial notice of the fact that this reservoir limits tests was performed after the Number 16 well was drilled or at least spudded as can be determined by judicial notice from Exhibit Number Two.

Q. (Mr. Hensley continuing.) Is this the only reservoir limits test you have run in this field?

A. In the Bell Lake 14?

Q. Yes.

A. That is correct.

Q. No more?

A. No more.

Q. Do you normally run reservoir limits tests as an exploratory device?

A. Not generally, unless there is a reason like in the Hadlock to make a six million dollar investment or

something like that.

Q. Why not?

A. I think I have spoken to that, because once you have a well in production the management hates to lose the revenue.

Q. Well, you conducted the test here in great details. As a matter of fact, you told us, this Commission, that you are absolutely satisfied that the nearest boundary from this wellbore is two thousand to twenty-five hundred feet, and you didn't shut this well in very long to make that determination?

A. I didn't say absolutely satisfied, but I said, yes, in my opinion I think that was a very good test, that it shows that the nearest boundary is farther than two thousand feet.

Q. Isn't it a fact, Mr. Lescarboura, that this is not used as an exploration device because it is not dependable?

A. That is not true.

Q. Well, why isn't it used then?

A. Well, I thought I spoke to that. You cannot do one of these tests unless you draw the reservoir sufficiently to create a drawdown that you can measure. And by that I don't mean just for the wellbore, I mean the entire reservoir. In cases like this when you have a lense of limited extent, like again, you people are talking about big lenses, but

this is only big in relation to what you have in the Morrow. And also because of such a high permeability because you see the length of time that you have to shut-in a well to do this test is directly dependent upon the permeability. The Hadlock being in the one million darcy range had to be shut-in for six weeks. This only had to be shut in for fifty hours and we had sufficient data.

Q. Now let's get to these tests that you ran. I'm very confused, if I may say so, so I'll try and straigten out my questions and hopefully the Commission's, if they have the same reservations that I do.

You first started talking, as I understood your testimony, about what you characterized as the conventional reservoir limits test?

A. Uh-huh.

Q. Which is a bottom-hole pressure calculation based on actual bottom-hole pressure from the well, is that correct?

A. No, the conventional limits tests I refer to was designed by a gentleman, Park Jones, is where you produced a well and you have flow data and drawdown data and then you attempt to do what we did here with the buildup, with a drawdown and that way you don't lose any production, you see, that makes it attractive to managers.

Q. Okay, and you did that, as I understand, my

exhibits aren't marked, but you had an exhibit here indicating that information?

A. No, we don't measure the drawdown. You have to have a drawdown before you can have a buildup. We don't waste our time measuring drawdowns because that is completely unreliable and worthless.

Q. I see. Exhibit Fifteen then, does not indicate pressure buildup using this conventional method of reservoir limit testing?

A. Well the conventional method of doesn't involve pressure buildup, it only involves pressure drawdown.

Q. Okay, pressure drawdown. This is not reflected on Exhibit Fifteen?

A. No, because we know it is a completely unreliable method and the reason for that is that nobody can control rates close enough so that the change in rate does not affect your pressure and completely destroy any accuracy you can have.

Q. Well, but as I understand it, you actually applied the conventional limits test to this reservoir and concluded that the nearest fault, as you put it, or barrier I assume, was within twelve hundred feet?

A. No. No, I didn't say that at all. I said that they ran a buildup, I didn't run this one, it was run by the Division as the well was completed. It is a conventional

buildup that is usually run to determine gauge, that is formational capacity and wellbore condition, and that first buildup using the radius of investigation, which is not conventional limits testing. It simply says that if you have gauge straight line for a certain length of time, you can say that you have looked into the reservoir a certain length, and I specify that using a conventional method I could claim twenty-four hundred feet, but since we know that this method is actually too optimistic we divide it by two and therefore I felt that on the first buildup I could claim twelve hundred feet, that is what I said.

Q. Okay. Now, after determining that the conventional reservoir test would not be applicable here, or would not be satisfactory in your judgment, I believe you testified that you designed the reservoir test which you actually used?

A. That is correct.

Q. Do you design a different test every time you make a different calculation or every time you have a different problem?

A. You betcha, yes, sir. That is the only way you can get a reliable test.

Q. I see. And this test was specifically designed for your testimony in this case then?

A. No, the test was designed to find the distance to the nearest boundary in Bell Lake Number 14.

Q. I see. Are there several ways that this reservoir limits could be determined mathematically, other than how you do it?

A. I don't think so. I mean, the only one I'm familiar with is -- you can type curve it, but that is the same thing I did except I did it by computer, just saving time.

Q. Directing your attention if I can, I'm confused by Exhibit Sixteen and Exhibit Seventeen, if you will put those in front of you. Now, if I read these exhibits properly, let's go to your bottom line on Exhibit Sixteen which is your shut-in time in hours?

A. Correct.

Q. And let's extrapolate at the end of three hours, you reflect a straight line curve, is that correct?

A. I would say that the straight line curve begins more at the end of about two point two hours and extends all the way to about twenty hours maybe.

Q. And yet on Exhibit Number Seventeen, again if I read it correctly, you have a distinct break after three hours?

A. The break was put in there to emphasize a point, it is not a distinct break. If you look at the line you will notice that the point is off. It is actually a very gradual change from one straight line to another straight line and then it departs again in a very gradual manner.

There is no distinct break. The break was put in there for the purpose of showing the true gauge straight line versus the second straight line.

Q. Your testimony is that there is not a break reflected by this Exhibit Seventeen?

A. Well, I'm saying there is a break but it was put in there officially by me to emphasize a point.

Q. Why didn't you put it on Exhibit Sixteen then?

A. I did.

Q. Isn't the reason you didn't is because this is a designed test?

A. No, not at all. The fact is not in this case, where would such a break be, such a break may have been a little bit earlier.

Q. Okay, let's go then to Exhibit Number Sixteen. This was started after a shut-in time of what, I can't tell, two point so many hours, two point two hours?

A. How about one point eight hours is really the first data point.

Q. What pressures were immediately encountered after the bomb was on the bottom of the hole and the well shut-in?

A. The pressures that you see in the plot.

Q. Where? I thought that plot was after one point eight hours?

A. Yes, but because of -- actually I know about this

but really it is the competence of the Division engineer. Due to the fact that it is a high-pressure well they have to shut it in to install the lubricator, so they can then run the Sperry-Sun gauges, so once that shut-in is made it is a final shut-in and you run the gauges and miss the first hours of shut-in.

Q. So we don't know what they are?

A. Yes, we do, because we have the first buildup, that is where the first buildup becomes invaluable.

Q. Well, if it is not a straight line and particularly if the slope of this line which you show out here after fifty hours is double in slope, to what the actual slope would be for the first two hours then, in fact, you've got a barrier out here at one point eight hours, don't you?

A. No.

Q. Why not?

A. Because what you were saying, you were saying if the slope was in what direction? The slope of a true gauge straight line is actually a higher slope. A true gauge is less than the one indicated here and it is a reciprocal factor. So the slope that we missed would have been a more steeper slope so the break was downwards, that does not indicate a fault, that indicates an improvement in gauge, more reservoir. It would actually strengthen our case if this was so.

Q. Well, why wasn't that slope put on this Exhibit then?

A. Well, because we did not have the data. We don't have the data, we only report the data that we have measured.

Q. I see. But you are sure that that slope went downward instead of outward?

A. Well, I do because I happen to have the first buildup with a good gauge and then when I did the modeling and I reproduced what the gauge should be down here, it was in very good agreement with the first buildup.

Q. I believe you have already testified that these tests are more realistic in homogeneous reservoirs?

A. That is correct.

Q. And do you question the fact that the Morrow is not homogeneous?

A. No, I don't question that at all.

Q. So there is some degree of probable error which is necessarily built into these calculations?

A. Yes, of course.

Q. What percent, is it fifty percent or fifteen percent or eighty percent, what is it?

A. In the case of a low permeability reservoir it could be quite high, but something as permeable as this, I would estimate that the percentage here is very small.

Q. That's your estimate?

A. You asked me for it, didn't you?

Q. Yes.

It also assumes, does it not, constant porosity and permeability?

A. That is correct.

Q. And you know that doesn't exist in the Morrow formation?

A. That's right, but the information I have from the test and I have essentially an average of permeability. As to the porosity I cannot speak because I only have the value determined at the wellbore.

Q. What if the porosity and permeability is only one half what the average you assigned to it, what effect would that have on these categories?

A. It makes the reservoir actually two times bigger than I calculated it. Now if the porosity was twice what I used then the reservoir would be half the size, but I don't think anybody would claim that the Morrow has a twenty-five percent porosity.

Q. Let me ask you this: Are you familiar with the geological term, channeling, as that term has been used by Mr. McWilliams?

A. Yes, I heard the term.

Q. Are you familiar with it?

A. Yes, I'm familiar with it.

Q. Are these tests that you ran consistent with a channel reservoir?

A. Yes, sir.

Q. They are?

A. Sure they are. That is precisely the reason why I detect an elongated reservoir because it is created by a channel effect.

Q. I see. Now you have already indicated to me that you arrived at this determination of reservoir limits by, at least what I classified as reservoir modeling, is that right?

A. That's correct.

Q. Why don't you explain to the Commission just what that is, I'm not sure I understand, maybe they do?

A. Are you sure you want me to get into that?

Q. Briefly.

A. What we do is we have a computer program that models the reaction of a reservoir to a drawdown and then a buildup and then we use the conventional equation, the I equation, the I function and this mathematical presentation applies until the reservoir sees boundaries. Once you see boundaries you go into what is called semi-steady state and you have to change your equations. While you start draining the well you will have transient fluid until you reach the boundaries and then you go into semi-steady state flow. So

what we do is use the method of mirror images to locate the boundaries. It is a mathematical fiction whereby you create a boundary by locating a duplicate well on the other side of this boundary. This is just a way to do it mathematically and depending on the accuracy you want, you may make mirror images of one hundred, a thousand, we can put in any number we want to as long as we are willing to pay for the computer time.

Q. Is the computer what figured out all of this?

A. The computer took the data that humans had determined and then reproduced the data that was obtained from a true field measure test.

Q. I'm sure that you didn't mean to imply what I interpreted you to say, but is the result different, depending upon how long you leave it in the computer?

A. No. What I'm saying is, if you only put one boundary you get one mirror well. Well, you put a boundary on the other side, one there and then you have to start going back and forth and when you put four boundaries then you need a bigger ray. And you have to make the ray big enough so that there is no error introduced by the cutting off of the image wells and we do that.

Q. Let me ask you this: Did you use volumetric calculations at all in formulating your model?

A. No, but I used the volumetric calculations to make

sure that the size that I was putting in was the correct size.

Q. Okay, so what you do is you model this reservoir limits test to fit in essence, a volumetric calculation which assumes absolutely homogeneous characteristics in the reservoir and then you come up with an answer that says two thousand to twenty-five hundred feet?

A. I think if you put the term absolutely homogeneous you have the entire science of petroleum engineering thrown out the window because there is no such thing as an entirely homogeneous reservoir. The point is that experience has proven and literature is replete with cases where inhomogeneous reservoirs, as long as you don't have major inhomogeneous like non-communicating layers or pinchouts or something like that. This theory that assumes a layer-cake homogeneous reservoir is actually pretty good, a lot of petroleum engineering science is based on that.

Q. Yes, I understand that, it is inexact?

A. Yes, to a certain degree.

Q. Why did you divide this formula by two, is there any reason for that?

A. Yes, an experienced factor is a fudge factor.

Q. A fudge factor?

A. Yes.

Q. Why.

A. Well, because the cases where we have proof, where

we were able to check our calculations like in Hadlock, which show that if we use a formula as given in petroleum engineering literature, we estimate the distance to be twice as far as it should be.

Q. Well, if you divide by three what kind of an answer would you get?

A. You would have one third of the distance.

Q. Twelve hundred feet, eleven hundred feet?

A. Yes, but the point is, we have proved that this one-half is a real good estimate. We have test after test that shows that this is a good estimate.

Q. Is that proved in the three cases which you made reference to?

A. Well, I used three cases because those cases were cases done while I was in this area. There were others done before I was in this area and if necessary I could bring them out, much more than three.

Q. As a matter of fact, directing your attention, if I may, sir, to Page Ninety-five of this treatise, under formula 10.9, I'll ask you if this is not the quotation from the author. (Reading.) This is an approximate formula which generally gives only order-of-magnitude results. (End of reading.)

A. That is correct, but that is not the formula I use. I use a formula that looks exactly the same, but for

a different purpose. This formula is based in estimating the first departure from a straight line. In other words, if you have a straight line and no departure you are not using this formula, you are just using the regular investigation. If you do not have a departure upwards in a semi-infinite reservoir, that is a reservoir which you have not reached drainage boundaries, then the method of Ken Gray which is the one you are quoting here, by the way, says that -- well, I better backtrack a little bit. The common method which is shown in Figure 10.1 is that you wait until you have the doubling of the slopes and then you go back and you extrapolate, only this is called the intercept method and it is a very good method because when you have the fully-developed double slope you know you have only one barrier and that is what you are seeing.

The Ken Gray method appeals to the fact that when you don't run it long enough to get the full two slopes then you estimate when the first departure is noted and then you use this equation to determine the distance to the barrier. The problem is: What is the first departure? The first departure is a function as you can see here, and here we have an extremely accurate gauge, this is where we were talking about the Sperry-Sun which is one of the best.

Q. Okay, let's stay on this a minute, if we can. I don't mean to interrupt you, but I want to be sure that the

record also contains, and I'll get back to this formula.

The next to the last sentence on Page Nine-five, immediately below equation 10.9, and I quote: (Reading.) Generally speaking, it is difficult to infer boundary or fault presence uniquely by a transient pressure test because other factors may cause similar effects. (End of reading.)

Is that true or false?

A. That is correct, but you realize that this is talking about a single fault in an infinite reservoir. It is not talking about a boundary, a bounded reservoir where you are using the shape of the curve. This is a different thing altogether.

Q. Let's talk about that, let's look at Exhibit Number Sixteen. I'm not an engineer, but it sure looks to me like up here after about twenty-four hours that you've got a definite break in this curve. In fact you can draw right down the center line of it, is that correct?

A. Yes.

Q. Why then didn't you use this formula?

A. Because the formula is only applicable to a semi-infinite reservoir, that is a reservoir that has not seen the drainage boundaries. You are misapplying the formula.

MR. HENSLEY: I'll pass the witness.

MR. RAMEY: Anymore questions of the witness?

You may be excused.

(THEREUPON, the witness was excused.)

MR. RAMEY: I think we should take about a ten minute break.

(THEREUPON, a short recess was taken.)

MR. RAMEY: The Hearing will come to order. You may proceed, Mr. Kellahin.

VICTOR T. LYON

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. Victor T. Lyon, L-y-o-n.

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

A. I'm conservation coordinator for Continental Oil Company for the Hobbs Division, located in Hobbs, New Mexico.

Q. Mr. Lyon, what is your educational background?

A. I have a B.S. degree in general engineering from the University of Oklahoma, received in 1945. I received an M.B.A. degree from Eastern New Mexico University in August of this year.

Q. And subsequent to completion of your education and obtaining your Bachelor's degree, what work have you done?

A. After spending a couple of years in the Navy I went to work for Continental Oil Company in 1946 and was employed in the proration engineer's office as an engineer until 1950. I was transferred to Oklahoma City as regional proration engineer and in 1953 I was transferred to Fort Worth as regional proration engineer, at which time I began working with New Mexico proration and I was moved to Roswell, New Mexico as production engineer in 1956 and to Eunice, New Mexico as district engineer which had the responsibility of the Bell Lake Unit area. In 1962 I was transferred to Roswell as senior production engineer and then in 1964 or late '63 I was transferred to Hobbs in my present capacity.

Q. In connection with your work at the present time do you have anything to do with the production, operation and drilling of wells?

A. Not directly, I'm in a staff position dealing with conservation which involves liaison between Continental and this Commission, the Commissioner of Public Lands, the USGS, and I have served on several industry committees appointed by this Commission. I served on the committe which wrote the initial gas proration rules for Southeastern New Mexico and the committee which consolidated the gas proration rules into Order R-1670. I served on the commingling committee which developed the commingling rules that the Commission has.

Q. Are you familiar with the development and the operation of the Bell Lake area?

A. Yes, sir. I might also mention that I am a registered professional engineer in New Mexico.

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

MR. RAMEY: Yes, they are acceptable.

Q. (Mr. Kellahin continuing.) Mr. Lyon, are you familiar with the Bell Lake Unit?

A. Yes, I am.

Q. Would you briefly give us the history of the Unit?

MR. HINKLE: If the Commission please, we object and pose an objection again to this type of testimony, anything relating to the Unit is, in our opinion, irrelevant, and immaterial and should not be admitted. I think we have given our reason for it and the Commission has already ruled on it and we request that this testimony be excluded.

MR. KELLAHIN: If the Commission please, here again we are talking about the development of an area in which the operators of the Bell Lake Unit have expended several millions of dollars in attempting to discover new gas reserves. Now we are talking about dealing with correlative rights in this case and certainly the correlative rights of these operators that own some seventy-five percent of the east half of Section 5 are matters that should be

considered by the Commission and in that connection we think it is quite pertinent that the efforts that have been made, the problems that the Unit has had and the expenditures that have been required in order to discover the very well that the applicant seeks to offset and we think it is pertinent to the testimony.

MR. RAMEY: Mr. Kellahin, we can't see any relevancy into going into the history of the Bell Lake Unit. We already ruled that the costs on the Texas West well were not relevant and we have already ruled that we would not accept testimony of this kind, so I will sustain the objection.

MR. KELLAHIN: Well, just for the record --

MR. RAMEY: This should be confined to the three twenty involved.

Q. (Mr. Kellahin continuing.) Mr. Lyon, are you familiar with the ownership of Section 5 that is the subject matter of this Hearing?

A. Yes, I am.

Q. And how is it owned?

A. The east half of Section 5 is Tract 72 in the Bell Lake Unit and it is committed to the Bell Lake Unit.

Q. And is it in a participating area?

A. It is in a participating area for the Morrow formation.

Q. Are the owners in the east half of Section 5

who have committed their interest to the Unit receiving revenue as a result of the Well Number 14?

A. Yes, they are. I think it has already been pointed out that twenty-five thirty-seconds of the east half of Section 5 is committed to the Unit, the seven thirty-seconds is not committed to the Unit.

MR. RAMEY: Twenty-five thirty-seconds is receiving revenue from the well and seven thirty-seconds is not?

A. That is true. And in addition to that, as to the royalty interests of those seven thirty-seconds, that money is being suspensed by Continental Oil Company for their account and the working interest is being applied against the expenses that we have paid out on their behalf during the development of this Unit.

Q. (Mr. Kellahin continuing.) Now is this escrowed money available in the event that the seven thirty-seconds were to join the Unit?

A. Yes, it is.

Q. Can you say how much has been escrowed?

MR. HENSLEY: I object to that, it is totally hypothetical.

A. It isn't hypothetical at all.

MR. HENSLEY: Because the testimony is uncontroverted in this proceeding, if the Commission please, that neither Texas West, nor the mineral owners desire to commit

to the Unit, nor have the mineral owners ever desired, and this is just hypothetical.

MR. KELLAHIN: It isn't hypothetical.

MR. HENSLEY: The question presupposes the joinder of the Unit. There is no testimony in this record indicating any desire on the behalf of the seven thirty-second interest owners to commit. It assumes a fact not in evidence.

MR. RAMEY: Sustain the objection.

MR. KELLAHIN: I would like to note an exception to the ruling.

MR. RAMEY: So note, Mr. Kellahin.

MR. KELLAHIN: If the Commission please, in view of the Commission's ruling I think we will have to remove some of the exhibits involved here possibly and if we can have a couple minutes here I think we might move along a little faster?

MR. RAMEY: Yes, sir.

(THEREUPON, a short recess was taken.)

MR. KELLAHIN: If the Commission please, we can't do it that way. We will just go ahead and objections can be made as we come to them.

Q. (Mr. Kellahin continuing.) Mr. Lyon, referring to what has been marked as your Exhibit Number Eighteen, would you identify that Exhibit, please?

A. Exhibit Eighteen is a copy of the South Participating

Area.

Q. Just a moment. Eighteen is the first exhibit.

A. Oh, I'm sorry, I don't have it marked.

Okay, Exhibit Eighteen is a plat showing the entire Bell Lake Unit area, the wells that have been drilled and the participating areas which have been formed.

Q. Referring to what has been marked as Exhibit Nineteen, would you identify that, please?

A. Exhibit Nineteen is a plat which shows the South Participating Area for the Bell Lake Unit in which this --

MR. HINKLE: We renew our objections again. This has nothing whatsoever to do with the issues in this case. The participating areas in the Bell Lake Unit have nothing whatsoever to do with the issue here that you join as to whether or not the east half should be force pooled.

MR. KELLAHIN: If the Commission please, I know that the Commission has ruled that the participating area and these other factors are not pertinent to the compulsory pooling and again I have to renew my statement that what we are talking about here has a profound effect on the Bell Lake Unit, a very, very profound effect on the Bell Lake Unit in that it will enable these operators, Texas West, to capture far, far in excess of any gas that underlies the fractional acreage which they own. Now this is pertinent to the Hearing and if we can't lay a foundation for this testimony

with some discussion of what has happened in the Bell Lake Unit then we are not being permitted to present our testimony.

MR. RAMEY: Mr. Kellahin, all I can see that you would use this exhibit for would be to point out the area of your Well 14 and the acreage involved in the remainder of the section.

MR. KELLAHIN: Well, we will submit it for that purpose then.

MR. RAMEY: But I will sustain the objection.

MR. KELLAHIN: You won't accept it just to show the acreage?

MR. RAMEY: Yes, I will, as long as there is no reference made to the participating areas, such as that. You can use it for the purpose of showing the well location, the percentage interests and such as that which are relevant to this forced pooling case.

Q. (Mr. Kellahin continuing.) Mr. Lyon, Continental has drilled some wells in the Bell Lake area, has it not?

A. Yes, we have.

Q. Could you describe briefly what wells have been drilled?

A. You mean all of them, or the area we are talking about?

Q. The area we are talking about, let's confine it to that.

A. Well, the well which brought this particular application into being was Bell Lake Unit Number 14 which was drilled sixteen hundred and fifty feet from the north line and sixteen hundred and fifty feet from the west line of Section 5, and a participating area was established which determined the people who are involved in this forced pooling, the royalty owners, as well as the working interest owners and in regard to the east half of Section 5.

I assume that the Commission is looking out for everybody's correlative rights in the east half of Section 5.

MR. RAMEY: I think the purpose of this Hearing is to determine what is right, yes, sir.

Q. (Mr. Kellahin continuing.) Referring to what has been marked as Exhibit Number Twenty, would you identify that Exhibit, please?

A. Exhibit Number Twenty is an updated pay-out status of the Bell Lake Unit which we have submitted in the two previous hearings.

MR. HINKLE: Again we object. This has no bearing whatsoever on the issue of this case?

MR. RAMEY: Sustained.

Q. (Mr. Kellahin continuing.) Referring to what has been marked as Exhibit Twenty-one, would you identify that Exhibit, please?

A. Exhibit Twenty-one is a bar graph showing the effect on the correlative rights of the owners in the Morrow participating area for the Bell Lake Unit.

MR. HINKLE: Again we object, it has no bearing. The participating area is not related to this forced pooling at all.

MR. KELLAHIN: If the Commission please, if he is talking about the participating area let's forget for a minute that there is even a unit. These people represented by Continental own seventy-five percent of the east half of Section 5 and they have got correlative rights to protect and if this is immaterial then the whole Hearing is, we are not here for any purpose if we can't protect correlative rights.

MR. RAMEY: I think that if this exhibit or exhibits show what would happen to the royalty and working interest owners in the remainder of the east half of Section 5, I think this exhibit would be relevant, Mr. Kellahin, but this covers the whole participating area and I can't see the relevancy of it.

MR. KELLAHIN: It refers to the percentage of reservoir production allocated to uncommitted interest in the east half of Section 5 if the forced pooling takes place.

MR. HENSLEY: But this presupposes the designated area in the Unit, which has no materiality whatsoever in

this proceeding.

MR. RAMEY: I have to concur with that, Mr. Kellahin.

MR. KELLAHIN: It is a part of the Unit and you can't close to it.

MR. HENSLEY: It is not.

MR. KELLAHIN: Could I have a five minute recess, please?

MR. RAMEY: Yes, sir.

(THEREUPON, a five minute recess was taken.)

MR. KELLAHIN: If the Commission please, we make an offer of proof that Exhibit Twenty-one relates to the percentage of the reserves in the reservoir to which there has been much testimony, what percentage of those reserves will be captured if a well is drilled in the east half of Section 5 and that is our purpose in offering this. I don't feel that the Commission can close its eyes to the fact that this is the Bell Lake Unit property that is being force pooled, we are not force pooling the seven thirty-seconds, the seven thirty-seconds is attempting to force pool the interest owners in the Bell Lake Unit, the twenty-five thirty-seconds. They certainly have their rights and Continental as operator of the Unit has a duty to represent them here and show what the effect is going to be on those people if this well is drilled, and I think it's pertinent

to the Hearing and if the Commission is going to hamstring some of this testimony we want the record to clearly show that we object to it.

MR. RAMEY: Mr. Kellahin, we think it is irrelevant, but if you would like to summarize what this exhibit will show --

MR. KELLAHIN: Mr. Lyon is the one who will summarize it if you will let him testify to it, I can't.

MR. HINKLE: This is just offered as tendered testimony?

MR. KELLAHIN: Yes, sir.

MR. HINKLE: Just for the purpose of the record?

MR. KELLAHIN: Well, we'll go ahead and --

MR. HINKLE: With the understanding that it is held to be irrelevant and immaterial.

Q. (Mr. Kellahin continuing.) For the record, Mr. Lyon, would you state what the purpose of Exhibit Twenty-One is?

A. Well, Exhibit Twenty-one shows the ownership which the Bell Lake Unit -- now this is in the pair of bars in the lefthand side. It shows the interest that the royalty and the working interest owners are entitled to under the Bell Lake Unit. I don't see how I can state it without saying that.

The second bar represents the amount of the

reservoir which is being allocated to the east half of Section 5 in the uncommitted interests only, just the seven thirty-seconds of the east half of Section 5 will receive this amount of the reservoir based on the fact that Bell Lake Unit 14 is producing and their well will be producing.

Now the rest of it, as I understand the Commission's instructions, would not be admissible because it shows the effect of drilling additional wells in which in order to equalize the density of drilling we could begin to protect our correlative rights.

MR. RAMEY: In other words, a well drilled on the east half of Section 5 would recover some ten plus percent of the gas in the reservoir?

A. In the seven thirty-seconds interest.

MR. RAMEY: Yes.

A. Would receive that.

I have deducted the twenty-five thirty-seconds that would go to the Bell Lake Unit owners.

MR. RAMEY: Is that assuming that you don't drill any offset wells to that?

A. Y[illegible]he additional bars as we move from left to right represent how the correlative rights would be affected by additional drilling in the Bell Lake Unit, in this reservoir.

MR. RAMEY: So then if this reservoir was

developed on three hundred and twenty acre spacing the percentage that you show on your bar graph with two wells would be reduced?

A. I'm sorry, I didn't understand that?

MR. RAMEY: I say if this reservoir were developed on three hundred and twenty acre spacing, which is the standard spacing for a Pennsylvanian gas well, then the percentage you show as ten plus percent in this case would be reduced somewhat by the influence of other wells?

A. Yes, as shown by the succeeding bars in reading from left to right. The three wells is where there is two wells in the Bell Lake Unit. The next bar marked four wells, there are three wells drilled by the Bell Lake Unit and the last bar on the right where the Bell Lake Unit drills four wells into this same reservoir.

Q. (Mr. Kellahin continuing.) In other words, it would require the Bell Lake Unit to drill additional wells in order to equalize the advantage gained by the drilling of this one well?

A. Yes, that is correct.

MR. RAMEY: It would require that you develop the reservoir on three hundred and twenty acre spacing?

A. Yes.

Q. (Mr. Kellahin continuing.) Now turning to what has been marked as Exhibit Twenty-two, would you identify that,

please?

A. Exhibit Twenty-two is a simple map showing the relative distances that we moved out to drill Number 14 from Well Number 1-A, five thousand and twenty-six feet and the distance we have moved out in drilling 16, four thousand eight hundred and seventy feet and the distance which is being stepped out by the applicant in this case in drilling their proposed well, which is sixteen hundred and eighty-three feet.

Q. What is the purpose of that exhibit, Mr. Lyon?

A. Well, the purpose is to show that the less distance you move out the less risk you are undertaking.

Q. Does that have some bearing on the risk factor to be allocated to the Texas West well if it is approved?

A. That is the purpose of this exhibit, to draw a comparison of the degree of risk taken by the applicants here as opposed to what we have undertaken in our development.

MR. RAMEY: Mr. Kellahin, may I interrupt. This is not still part of the tender of proof?

MR. KELLAHIN: No. It pertained only to the previous exhibit unless somebody wants to --

MR. RAMEY: Excuse me, go ahead.

Q. (Mr. Kellahin continuing.) Now have you made a bar graph showing the risk factor based on distance?

A. Yes, Exhibit Twenty-three is a bar graph which just shows bars in proportion to the distances shown by the arrows on Exhibit Twenty-two. It is a comparison of risk undertaken by the applicant here compared to the risks of distance moved out by the Bell Lake Unit working interest owners in drilling Number 14 and Number 16.

MR. HENSLEY: I object to that. That doesn't mean anything, it has no conceivable relevance to this proceeding. Distance alone can't conceivably be a factor.

MR. KELLAHIN: If the Commission please, even their own witness, I believe, testified that if you get closer to a good well you will be better off.

MR. RAMEY: I'll overrule that objection.

Q. (Mr. Kellahin continuing.) Now referring to what has been marked as Exhibit Twenty-four, would you identify that, please?

A. Exhibit Number Twenty-four is an evaluation of the economic impact of Order Number R-5039-A. We began with the recoverable gas in the reservoir which has been testified to as thirty-six million MCF. The recoverable gas per acre foot is one thousand MCF. The estimated cost of the well, this is based on our experience, and if they don't have any trouble in that well, I think they may be able to drill it for one and a quarter million dollars. We estimate the price of the gas because we don't have any information on

whatever contractor they may have or are negotiating, of seventy-two point eight cents per MCF because this is the area rate price approved by FPC plus the thirty percent bonus for a small operator, and I hope it's more than that, I hope it is a lot more than that.

We estimate that their well will produce ten million cubic feet a day and I used ten million because it is easy to work with. I don't know what their well will make. And I also assume in making this comparison that Bell Lake 14 will also produce at the same rate.

The royalty rate, when you consider the royalty payable by Texas West to their lessor, and the excess burdens in the seventy-eight percent of the Bell Lake Unit which represents this spacing unit averages out about fourteen and a half percent.

I estimate their direct operating cost at seven and a half percent, including severance tax. We estimate their drilling supervision charge of sixty-four hundred dollars, that is four months at sixteen hundred dollars a month. Estimated producing supervision, two hundred and fifty dollars a month.

We estimate their monthly revenue, net, of one hundred and seventy-two thousand, six hundred and twenty-three dollars or five thousand, six hundred and seventy-eight dollars per day.

Adding the drilling supervision and the production supervision to the well cost, you come out with the amount of money which is necessary to pay out the well and at the revenue stream that we have, I calculate that it would take two hundred and twenty-two days, at which time the well would have produced two million, two hundred and twenty thousand MCF.

The estimated penalty cost at one hundred and fifty percent is one million, eight hundred and seventy-five thousand dollars, plus the additional producing supervision which applies during the additional time to pay out this penalty, which gives three hundred and thirty-one days to pay out the penalty, during which time three million, three hundred and ten thousand MCF of gas will be produced.

Then assuming that Bell Lake 14 will have produced seven point five four billion cubic feet as of April the first, which is the date I assume that their well will go on production and assuming that the Texas West well and our 14 will be producing at the same rates and dividing the remainder of the reserves equally between the wells and applying the seven thirty-seconds to the production estimated to be produced from the Texas West well, they will receive an additional one million, eight hundred and forty-eight thousand MCF for a total production of seven million, three hundred and seventy-eight thousand MCF.

Now, if you look at this on an acreage basis, assuming that the reservoir is of uniform thickness, twenty-five feet, and the reservoir area is fourteen hundred and forty acres, there would be twenty-five thousand MCF per acre in the reservoir, in place, recoverable, and Texas West's lease covers sixty-nine point nine five acres which is four point eight five percent of the reservoir. In order to pay out the well that well must drain eighty-eight point eight acres, which is six point two four percent of the reservoir.

In order to pay out the penalty, plus the cost of the well, it would have to drain two hundred and twenty-one point two acres, which is fifteen point five percent of the reservoir.

By the time of depletion their interest will have drained from the reservoir two hundred and ninety-five point one two acres, which is twenty point seven three percent of the reservoir.

Since I prepared this exhibit I have learned of two things which make it incorrect. One is I misapplied the penalty. I took one hundred and fifty percent of the total cost and as I read the order, only the prorated share of those who are non-consent is applied to that, so I have applied an excess penalty.

I have also had communication from Transwestern Pipeline Company and our attorneys who deal with the FPC,

and they tell me that in their opinion, the seventy-eight percent of the gas which belongs to the people in the Bell Lake Unit cannot be sold to anybody except Transwestern and at the price they pay us, which is fifty-six cents, and I don't agree with this, but my opinion doesn't count for very much that way, but this is what they tell me they are certain the situation is.

The next exhibit, this is Exhibit Twenty-four that I have been testifying from. Exhibit Twenty-five shows the changes that I have made in trying to get as close as I can to what the impact of this will be.

You will note that the estimated monthly revenue will be reduced to four thousdand, six hundred and fifty-seven dollars per day. The estimated penalty has been reduced to one million, four hundred and sixty-four thousand, eight hundred and forty-four dollars, about a million and a half dollars.

The days to pay out are increased to three hundred and fifteen days, during which time three million, a hundred and fifty thousand MCF will have been produced. Excuse me, I said that wrong. The pay out is two hundred and seventy days and two million, seven hundred thousand MCF will be produced. To pay out the penalty it would be three hundred and fifteen days and three million one hundred and fifty thousand MCF will be produced.

And then again I have divided the remainder of the reservoir between the two wells equally so that the total estimated production of Texas West is seven million, six hundred and seventy-two thousand MCF.

Now the acreage they have under lease still amounts to four point eight five percent. The acres drained at pay out under this condition is one hundred and seven point two or seven point four four percent. The acres drained at total pay out, that is the cost of the well, plus the penalty, two hundred and thirty-three point two acres, sixteen point one nine percent of the reservoir and to depletion two hundred and ninety-five point one two acres, twenty-one point three one percent.

Q. Does that indicate that Texas West will get more than its share of gas underlying the east half of Section 5, under the provisions of the order?

A. More than four times as much.

Q. Now referring to what has been marked as Exhibit Twenty-six, will you identify that, please?

A. Exhibit Twenty-six is a diagram, again using a simple plat and showing the -- since we don't know the direction and the actual dimensions of the reservoir and so forth, I have depicted this reservoir as a circle containing fourteen hundred and forty acres. I have also enscribed around well Number 14, a circle depicting the

nearest boundary which we have determined from our boundary test.

Q. Mr. Lyon, you say the nearest boundary, in light of the previous testimony, do you mean that or do you mean the absence of any boundary at that distance. Did they find a boundary, is what I'm saying?

A. We did find a boundary.

Q. You did?

A. Yes, we did find a boundary and it is as Mr. Lescarboura said, more than two thousand, less than twenty-five hundred feet and closer to twenty-five hundred than to two thousand and so I have chosen the figure twenty-three hundred feet.

Q. Okay, go ahead.

A. Then around the proposed location of Texas West, I have drawn a series of circles, the inner one is colored blue and this represents the amount of acreage that they hold under their lease. The yellow ring around that represents the excess gas they will produce in paying out their well. The red ring surrounding that represents the gas they will produce in paying out the penalty. The purple ring, the outer ring, represents the total acreage which they will drain under this order.

Now, I have also shown, because sometimes when people look at circles they have a tendency to look at the

diameters or radii and so I have shown the same information by a bar graph on the lefthand side. I have shown by prorata lengths of the bar the same information that is shown by the circles. On the left the acres drained, on the right the percentage of the reservoir which is being drained under this order.

Now the second bar represents the amount of the reservoir that Texas West would drain if there were no penalty at all assessed the working interest owners. In other words, if they recouped all of their costs until the well paid out and then the working interest owners came in for their seventy-eight point one two five percent, this is the amount of the reservoir that they would drain. They would drain one hundred and ninety-three point four acres, thirteen point four percent of the reservoir.

The bar at the right hand is the amount of gas, the percent of the acres they would drain, the percentage of the reservoir that would go to Texas West if we all joined in and communitized the east half of Section 5. There is no penalty, everybody puts in their money, everybody shares in the production.

MR. RAMEY: Which figure is this, Mr. Lyon?

A. This is the one hundred and twenty-two point eight acres and the eight and a half percent.

MR. RAMEY: That's for the seven thirty-seconds?

A. That is what goes to the seven thirty-seconds, yes.

Q. (Mr. Kellahin continuing.) Mr. Lyon, referring to what has been marked Exhibit Number Twenty-seven, would you identify that, please?

A. Well, I don't see how we can avoid this discussion because as I have stated in the previous hearings and I started to explain here. Monies have been escrowed or suspensed for uncommitted interests in this thing because the participating areas have treated these interests as if they were in the unit.

MR. HINKLE: If the Commission please, we object to this testimony, it is about the Unit, about the operation of the Unit which is immaterial and irrelevant.

MR. HENSLEY: Which presupposes committment which has not and will not occur.

A. No, it presupposes that it will not be committed. If you will let me explain just a little bit and then you can rule, but we are going to have to change our ownership. If this well is drilled, we must consider it as an irrevocable decision that this interest will not be committed. We have been treating it as if it had been committed, now we must change the ownership in the Unit because it is not proper anymore to suspense this money.

MR. HINKLE: Objection, that's operations under

the Unit and it has nothing whatsoever to do with this forced pooling.

MR. KELLAHIN: If the Commission please, it goes to show the effect of the forced pooling on the operators and the owners of this seventy-eight percent and it is material.

MR. HINKLE: That's their problem.

MR. RAMEY: I'll sustain the objection.

Q. (Mr. Kellahin continuing.) Now referring to what has been marked as Exhibit Twenty-eight, would you identify that exhibit please?

A. Exhibit Twenty-eight is a tabulation of supervision charges of three units in which Continental has an interest. The first is the Bell Lake Unit for which these supervision charges were established, as of March 1st, 1969 and the drilling supervision is eight hundred and fifty-five dollars per month; the producing well supervision is one hundred and forty-three dollars per month per well.

The James Ranch Unit Number 7 was effective on June 25th, 1974. The drilling supervision is thirteen hundred and forty-two dollars per month; the producing well supervision is one hundred and seventy-five dollars per month.

The Brennan Stool Unit which is operated by American Quasar was effective September 1st, 1974. It calls for drilling supervision of fifteen hundred and eight dollars per month; producing well supervision of one hundred and

seventy-five dollars per month.

And I have also listed on there what Continental Oil Company's headquarters instructions to the Division are of the charges that we can offer or accept. This is thirteen hundred and seventy dollars per month for drilling; one hundred and seventy-five dollars per month per producing well.

Q. What would you consider a reasonable charge for supervision of a drilling well in the Bell Lake pool?

A. I think admittedly in the Bell Lake Unit our drilling supervision is on the low side and I would think that the James Ranch Unit is a reasonable compromise, which is thirteen hundred and forty-two dollars per month drilling and one hundred and seventy-five dollars per month producing.

Q. Mr. Lyon, you have heard testimony as to the risks of drilling this well, what risk factor, in your opinion, would be a proper one?

A. I think a ten percent risk factor would be excessive. They are not undertaking any risk that we haven't undertaken sixteen times in the Bell Lake Unit.

MR. HENSLEY: I move that that testimony be stricken from the record. It is unresponsive, it violates the direction of the Commission that matters concerning the development and operation of the Bell Lake Unit be excluded as irrelevant to the controvery involving the

present three twenty.

MR. KELLAHIN: If the Commission please, this is straining this to the utmost. Their witness testified as to the risk factor and discussed wells all over the pool, even in the Antelope Ridge pool and certainly Mr. Lyon is just as competent to testify to the risk factor on wells that this company has drilled whether they be in this pool or in Carlsbad as a factor to be considered by the Commission in assessing a risk in this particular well.

MR. RAMEY: I'll overrule the objection. I think this is relevant that the well was drilled in the area as to the risk factor.

A. I think that considering the fact that we haven't ever drilled as close as seventeen hundred feet to another well and that we did not have extremely reliable data that we would encounter a known reservoir of highly prolific nature within the distance that we were stepping out, that I think a risk factor at all here is out of order.

MR. RAMEY: Is ten percent too high?

A. I think it is.

MR. RAMEY: Would you recommend zero percent?

A. That is what I would recommend, yes, sir.

Q. (Mr. Kellahin continuing.) Mr. Lyon, were Exhibits Eighteen through Twenty-eight prepared by you or under your supervision?

A. Yes, they were.

MR. KELLAHIN: At this time I would like to offer the exhibits, realizing of course, that the Commission has already ruled that Twenty-seven is not admissible and I believe Twenty-one, Twenty and Nineteen.

MR. HINKLE: Those are tendered.

MR. NUTTER: Nineteen was admitted just for limited purposes to show the existence of the well. There is no question about Eighteen.

MR. KELLAHIN: We are tendering all of the exhibits and the Commission can rule at this time.

MR. RAMEY: Exhibit Eighteen is admitted, but on a limited basis to show the well locations only. No discussion of participating areas. Exhibit Nineteen is limited for the purpose of showing well locations. Exhibit Twenty is not admitted. Twenty-one is admitted as a part of your tender of proof. Exhibits Twenty-two, Twenty-three, Twenty-four, Twenty-five and Twenty-six are admitted. Twenty-seven is not admitted and Twenty-eight is admitted.

MR. KELLAHIN: That completes our testimony.

MR. RAMEY: Any questions for the witness?

MR. HENSLEY: Yes, sir.

CROSS EXAMINATION

BY MR. HENSLEY:

Q. Mr. Lyon, I've got a few questions about what I think is Exhibit Number Twenty-five, I'm not sure I've got the right exhibit, but this is the revised evaluation which you made and from which you concluded that based on these calculations here, statistics, or whatever they are, that Texas West's drilling at the proposed location would result in their recovering four times as much gas as they were entitled to receive. Did I understand your conclusion correct?

A. Correct.

Q. And is that based on this exhibit?

A. Yes, sir, it is.

Q. Okay, let's start then and direct your attention to that exhibit. I have a few questions.

First of all, you have assigned a price here of point five nine seven cents per MCF for what, one hundred percent of the stream or seventy-eight percent, or what?

A. During pay out period, yes.

Q. A hundred percent of the stream?

A. Yes, sir.

Q. That is not realistic, is it?

A. Well, it could be worse.

Q. Well, it could be worse, but it is totally unrealistic.

A. Well, let me explain what I mean. I also have had people who work with the FPC at all times say that this --

MR. HENSLEY: If the Commission please, that is strictly hearsay, what somebody who works for the FPC says.

MR. KELLAHIN: If the Commission please, the FPC rules and regulations require that once land or acreage is dedicated to interstate commerce, I believe Mr. Derryberry will be familiar with this, it remains dedicated to interstate commerce and this acreage is so dedicated.

MR. HENSLEY: I'll withdraw my objection because I've got some questions about that if we're going to get into it.

Q. (Mr. Hensley continuing.) You are saying then that you made this calculation on the basis of one hundred percent of the stream at fifty-nine point seven cents?

A. Yes, sir.

Q. You realize, do you not, Mr. Lyon, that the interest of Texas West and the mineral owners from which they derive their leasehold title are not subject to the same restrictions as you are.

A. I don't think they should be, but I don't think that is necessarily so.

Q. Very well, I will ask you then to assume for purposes of my question, do you know whether they are or not?

A. No.

Q. Do you know whether or not Texas West is a small

producer?

A. No, except I heard Mr. Dunnavant say he was.

Q. Okay, then for purposes of my question I will ask you to assume that they are, since that is the only evidence in the record.

A. Okay.

Q. What is the current price being received in Southeast New Mexico being paid by interstate lines to small producers, do you know?

A. A thirty percent bonus over what the majors can receive.

Q. Do you have any knowledge whatsoever of the contract which has recently been entered into by Hanagan Petroleum Company and Yates, for example with Transwestern?

A. No.

Q. You don't?

A. No.

Q. So if I tell you that it is a dollar and ten cents, you don't know?

A. No, but I have understood that the FPC has rolled this price back.

Q. Okay. When did that happen?

A. About three or four weeks ago.

Q. To what level?

A. Thirty percent above the area rate for new gas.

Q. Now if you allocate, assuming that your calculations are correct and your knowledge is correct with regard to the FPC, pricing restrictions on small producers, then if Texas West was entitled, as a small producer, to get the rate, which would be the area rate plus thirty percent, and that part of the stream from this proposed well being priced at that figure, then this calculation based on fifty-nine point seven cents is in error?

A. That's true.

Q. Now the next assumption you made in these calculations is that the producing rate was going to be ten million cubic feet a day?

A. Yes.

Q. What is your present producing rate from Number 14?

A. About eighteen million.

Q. Why didn't you assume eighteen million? It's the same reservoir isn't it?

A. There is a possibility that there will be interference between the wells from their close proximity.

Q. Well let me ask you this: If you assumed eighteen million, that would have a substantial effect on these calculations, wouldn't it?

A. Yes, it would.

Q. All right. But you don't know exactly what, in fact, you haven't made those calculations?

A. No, you haven't drilled the well yet, you haven't completed it.

Q. So that would change the days to pay out, the gas produced to pay out would be different likewise?

A. Yes.

Q. Okay. Let me just ask you hypothetically since you have made reference to what you heard that the FPC did two or three weeks ago with regard to roll backs. What if the price is two dollars, is that going to make a big difference?

A. Yes, it will make quite a bit of difference.

Q. Okay.

A. You know, I hope Texas West can get two dollars for their gas, we can't, but we're locked into that, but I hope they get as much gas as they possibly can.

Q. Now all of these figures are tied into whatever the number is for this exhibit with the circles on it, is that correct?

A. Yes.

MR. NUTTER: Twenty-six.

Q. (Mr. Hensley continuing.) Twenty-six.

A. Let me point out that this Exhibit Twenty-six is based on the data that is shown on Exhibit Twenty-four.

Q. Okay.

A The effect is very similar, but I don't want to

mislead you.

Q. I understand that with my first question. You did not re-draw these circles after you re-prepared?

A. No, sir. I just found out about these changes yesterday.

Q. Now also all of these calculations are based on the entire reservoir, are they not?

A. Yes, they are.

Q. You have not made any calculations with respect to the proration units.

A. I don't think the gas realizes what proration unit it is in.

Q. Now answer the question, have you made any calculations for a proration unit comprising the east half?

A. It is impossible because you cannot expect gas to be confined or remain confined to the proration unit that it originally lies under.

Q. Well, let's take the east half of Section 5. All right, let's assume that the Commission in this cause approves the forced pooling order and that a unit comprising three hundred and twenty acres, being the east half of Section 5 is dedicated to the proposed well, okay?

A. Yes, sir.

Q. And let's assume further, since you have in all of your calculations here, the three hypothetical situations

where you do join, you don't join and so forth, let's assume that everybody pays their own way?

A. All right.

Q. Are you still telling me that Texas West is going to get four times the amount of gas out of that reservoir that they should get since they own a seven thirty-second interest?

A. I don't think I said that.

Q. Well, I hope not because you aren't testifying to that are you?

A. If everybody goes in and pays their share and there are not any penalties and everybody pays their money and receives revenue from the beginning this third bar over here indicates that Texas West will receive the gas from one hundred and twenty-two point eight acres, which is eight and a half percent of the reservoir, which is seventy-five percent more than they have in place recoverable.

Q. If everybody pays their fair share?

A. Right.

Q. So if in fact, hypothetically, a unit is designated comprising the east half and Texas West pays seven thirty-seconds and you pay twenty-five thirty-seconds you're telling me and you're telling this Commission that Texas West is going to get more than seven thirty-seconds interest?

A. Seven thirty-seconds of what?

Q. Of the gas dedicated to the unit, which is what

we are here to talk about.

A. They certainly are.

Q. Okay. How much more?

A. I just told you, seventy-five percent more.

Q. How is that possible physically?

A. Well because you have two wells sitting there dividing up the reservoir and --

Q. But this question presupposes, Mr. Lyon, without intending to interrupt your testimony, that this Commission concludes that the unit for the well, which is your Number 14 Well on the west half is three hundred and twenty acres dedicated to the west half, now, that's all.

A. I don't think you can keep that well from draining what it is already draining, which is fourteen hundred and forty acres. And I don't think we can keep Texas West's well from draining half of the remaining reservoir. This is a reservoir with excellent communication, this is not the normal Morrow pool. This is the like of which you haven't found in the Morrow, except in one other instance. This is a Morrow reservoir that has very fine communication. We are draining that entire reservoir with Well Number 14 and we can drain that to depletion with that well.

Q. Let's reverse your circles here. If the testimony is uncontroverted from Continental in this cause that the rights, the correlative rights of Texas West and its mineral

owners are not being protected at the present time, do you agree to that?

A. No.

Q. Oh, you don't?

A. I really don't.

Q. Okay. Well, have you taken into consideration -- well, let me ask you this way: Do you feel that your well, which is the Number 14 Well, is draining the east half?

A. Yes.

Q. You do? How much of it?

A. All of it that is productive.

Q. So certain of the gas which belongs to Texas West and its mineral owners has already been produced by Continental, is that correct?

A. That is correct.

Q. Have you taken that factor into consideration when coming up with these statistics?

A. Yes, I have.

Q. Where did you take that into consideration?

A. By assuming that we would have produced from our well seven point five four billion cubic feet by April 1st, which is the date I estimate Texas West's well to go on the stream.

Q. How does that take into consideration the fact you will have drained seven point four billion cubic feet from

the reservoir. That is not responsive, is it, to the question?

A. Well, I don't know where it would come from if it doesn't come from this reservoir.

Q. The question is: Did you take into consideration the fact that you have been and are now draining this reservoir and draining the interest of Texas West in reaching these calculations?

A. I said that I did, and I repeat that I did.

Q. Okay, how?

A. I just told you. I assumed that our Number 14 Well will have produced seven point five four billion cubic feet by April 1st of 1976 and that has been subtracted from the recoverable gas in place.

Q. I understand.

A. And each time as I calculated the gas that would be produced in paying out your well I also calculated that we would produce an equivalent value or an equivalent volume and during the time that you recovered the penalty portion I deducted the same volume from our well and from the recoverable gas in place and then I divided the remaining reserves in the reservoir equally between the two wells, now how would you do it?

Q. You started then in April of 1976 and divided the remaining reservoir by two, is that right? You allocated

half to one well and half to another?

A. That's right.

Q. My question is: What did you do about the production, the seven point four billion cubic feet, part of which admittedly had been drained from the minerals which Texas West has a lease on.

A. We sold it.

Q. You what?

A. We sold the gas.

Q. Is that figure in these calculations?

MR. KELLAHIN: If the Commission please, I object to this line of questioning, you can't take into consideration unproduced gas when there was no well there to produce it except from the 14.

MR. HENSLEY: We certainly can. We are talking about it.

MR. KELLAHIN: And we are not trying to restore Texas West to the position they would have been in had they drilled their well at the same time as the Number 14 and there is no way we can do it.

MR. HENSLEY: If the Commission please, the whole point is that this witness has left the impression with this Commission that the granting of this application will result in Texas West getting four times its share of the gas from the east half and it seems to me that the first

logical inquiry is, if that is true, which I personally question, nevertheless, what about all of the gas they have drained from us, do we get a credit for that? We are talking about correlative rights, we're not talking about hypothetical situations.

MR. RAMEY: I would like to sustain the objection because so long as there is not a well on the east half of Section 5, it is not considered productive.

MR. HENSLEY: All right.

Q. (Mr. Hensley continuing.) Now one final question or so. You say a ten percent risk factor is too high, is that right?

A. That's right.

Q. Is that because of this reservoir limits tests that the research team ran in Tulsa?

A. It certainly contributes to it, yes.

Q. What about your Well Number 16, did you run a reservoir limits test before you drilled down to the Fourth section of the Morrow and found it saturated with water?

A. No, it doesn't meet the conditions required to run such a test.

Q. Oh, it doesn't?

A. No, it doesn't.

Q. You don't run reservoir limits tests as an exploration device?

A. No, you can't run a limits test like that until you have had substantial production from the reservoir.

Q. I see.

A. And not have it mean anything.

Q. Have you had a reservoir limits test run as an exploration device on any Morrow well which you propose to drill in New Mexico?

A. I don't think I can run one on a well I propose to drill.

Q. Offsetting a producing well?

A. I haven't had occasion to do that.

Q. Do you know of anybody that ever has?

A. No, and I don't know of very many reservoirs that are like this either.

MR. HENSLEY: I'll pass the witness.

CROSS EXAMINATION

BY MR. RAMEY:

Q. Mr. Lyon, we've assumed here roughly a fourteen hundred acre reservoir?

A. Yes, sir.

Q. Assuming that this reservoir runs north and south and, say, covers Section 5 and Section 32, you have a well in the west half of 5, say Texas West is granted permission to drill a well in the east half of Section 5, now, also

we are assuming that Section 32 is part of this reservoir. Could not then Continental as unit operator drill two wells on three hundred and twenty acre spacing in Section 32?

A. Yes.

Q. The effects of four wells versus two would change all of these figures in Exhibit Twenty-four, Twenty-five and Twenty-six, would it not?

A. That is true, but the point of what I'm trying to make is that Number 14 is draining all of this reservoir, we don't need anymore wells to drain that and that is going to result in economic waste if we drill those.

Q. Mr. Lyon, isn't the state-wide spacing three hundred and twenty acres in Pennsylvanian gas wells?

A. Yes, if it hasn't been changed by special pool rules, yes.

Q. Isn't that the spacing in this pool?

A. Yes.

Q. But your testimony is that one well will drain four hundred and forty acres?

A. You must realize, Mr. Ramey, that we are dealing with a unit and the unit protects correlative rights.

Q. Mr. Lyon, I'm not dealing with three hundred and twenty acres or six hundred and forty acres in this case --

A. But this isn't all of the reservoir.

Q. Well it appears to me that if Texas West is granted

permission to drill a well, why you as unit operator to protect your correlative rights would have to go in and offset their well, and when you did that wouldn't these figures go down the drain, wouldn't these figures be untrue?

A. They would be changed, yes.

Q. So you would have the prerogative to change this?

A. Yes.

Q. You would also have the prerogative to join in the drilling of this well and not pay a penalty.

A. And this would result in the drilling of unnecessary wells.

Q. Mr. Lyon, I think that is an attack on the Commission's spacing to say that this is drilling an unnecessary well.

MR. KELLAHIN: If the Commission please, I submit that it is not an attack on the Commission's spacing. The Commission seems to be bent on ignoring the fact that this is a unit set up for the observance of having optimum spacing, the perfectly proper approach inside the boundary of the unit. If the Commission is going to ignore that then we have no answer, true, but there is nothing in Rule 104 that says the well has got to be drilled on three hundred and twenty acres, it just says that you can't drill it on less than three hundred and twenty acres, but it doesn't necessarily follow that you have to go in there and drill

every three hundred and twenty acres even though it may be productive.

MR. RAMEY: Quite the contrary, Mr. Kellahin, we have no proof that one well will drain fourteen hundred and forty acres which is what this witness is testifying to, while three hundred and twenty acre spacing is the standard spacing in Pennsylvanian wells in southeastern New Mexico.

MR. KELLAHIN: We have testimony in this record that it will drain that much.

MR. RAMEY: That is not within the call of this Case, that cannot be considered, nor the fact that this unit has not been submitted to any unit and I don't think the Commission can regard anything that has to do with the unit.

MR. KELLAHIN: If the Commission please, I keep reiterating that seventy-five percent of this acreage has been committed to the unit and this is an undivided interest in here and if they don't want to commit it that is their business.

MR. RAMEY: Mr. Kellahin, you are accusing us of ignoring the unit, but then again you are ignoring the fact that this acreage is not in a voluntary unit.

MR. KELLAHIN: This fractional interest is not in a voluntary unit.

MR. RAMEY: That's right.

MR. KELLAHIN: But we can't ignore the fact that

the remainder of that interest is in it and that is what the Commission is doing.

MR. RAMEY: I think, you know, we're not thinking along the same lines.

MR. KELLAHIN: No, we are definitely not.

Q. (Mr. Ramey continuing.) But do you agree, Mr. Lyon, that if Texas West was allowed to offset your well and that you, as unit operator, in turn offset their well then these factors that you presented on Exhibits Twenty-four, Twenty-five and Twenty-six would change considerably?

A. I can re-calculate that for you if you want me to.

Q. By as much as fifty percent?

A. No, not by fifty percent.

Q. If there were four wells drilled in this reservoir?

A. If there were four wells drilled --

Q. You testified there is fourteen hundred and some acres?

A. In the order of fifty percent.

Q. There could be as many as five wells in this reservoir couldn't there, on the three hundred and twenty acre spacing?

A. Well, we would be a little hard pressed to get them in there. I think we would have five uneconomical wells.

Q. But you would have recourse against Texas West producing what you consider more than their just share of

eight and a half percent?

A. That is exactly what we have been trying to tell you.

Q. By drilling other wells?

A. Right.

MR. RAMEY: Thank you. Are there any other questions of this witness? The witness may be excused.

(THEREUPON, the witness was excused.)

MR. KELLAHIN: That completes our testimony.

MR. RAMEY: Are there any closing statements?

MR. KELLAHIN: If the Commission please, due to the hour and the complexity of this Case, I would like to submit a written statement in view of the time. I know Texas West is in a hurry, we will get it in at any time you say, either tomorrow or Monday or whatever it may be.

MR. HENSLEY: A what?

MR. KELLAHIN: A written statement rather than making closing statements now. It is almost five o'clock and I think a written statement would be more helpful to the Commission.

MR. HENSLEY: Well, every day that we postpone this thing the more damage is occurring.

MR. KELLAHIN: Well, you're not going to get an order tomorrow.

MR. HINKLE: Well, as Harold pointed out we just

don't want any more delay on account of the fact that Texas West has obligated itself for tremendous expenditure in the drilling of this well and it is going forward and getting deeper every day and we are prepared and there is no use delaying the argument of this Case. As I see it it couldn't take more than ten or fifteen minutes and I don't see any use to have had three hearings on this now and the Commission is well versed in all of the ramifications of it, I don't think we can add anything really by additional statements, and I would just as soon go ahead, if the Commission is willing to stay a few minutes and get rid of it.

MR. RAMEY: Mr. Hinkle, I don't think we would get an order out before Monday at noon and I would go until Monday at noon, to say that you have a statement in by Monday at noon. If you would like to present yours at this time, fine.

MR. HINKLE: Well, we will have it to you by Monday at noon then.

MR. RAMEY: Thank you. The Hearing is adjourned.

State of New Mexico)
) ss.
County of Santa Fe)

I, SIDNEY F. MORRISH, a court reporter, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me, and the same is a true and correct record of the said proceedings to the best of my knowledge, skill and ability.

Sidney F. Morrish, Court Reporter

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SANTA FE, NEW MEXICO 87501

JASON W. KELLAHIN
ROBERT E. FOX
W. THOMAS KELLAHIN

TELEPHONE 982-4315
AREA CODE 505

October 20, 1975

Mr. Joe Ramey
Secretary-Director
Oil Conservation Commission
P. O. 2008
Santa Fe, New Mexico 87501

Dear Mr. Ramey:

Enclosed please find an application for Continental Oil Company for Compulsory Pooling of the E/2 of Section 5, Township 24 ~~North~~ South, Range 34 East, Lea County, New Mexico.

This is the same acreage covered by the application of Texas West Oil and Gas Corporation in Case No. 5493, presently set for rehearing October 23.

Your consideration of this application will be appreciated.

Yours very truly,

Jason W. Kellahin

Jason W. Kellahin

CC: Clarence Hinkle, Esq.

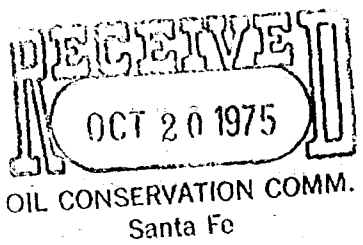
WTK:kjf

Enclosure

BEFORE THE

OIL CONSERVATION COMMISSION OF NEW MEXICO

IN THE MATTER OF THE APPLICATION
OF CONTINENTAL OIL COMPANY FOR
COMPULSORY POOLING, LEA COUNTY,
NEW MEXICO



A P P L I C A T I O N

Comes now Continental Oil Company and applies to the New Mexico Oil Conservation Commission for an order pooling all of the mineral interests in the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, N.M.P.M., Lea County, New Mexico, to be dedicated to a well to be drilled at a location 1980 feet from the South line and 1650 feet from the East line of said Section 5, and in support thereof would show the Commission:

1. The S/2 of Section 5, Township 24 South, Range 34 East, is located within the exterior boundaries of the Bell Lake Unit, heretofore approved by the New Mexico Commissioner of Public Lands, the United States Department of the Interior, and the Oil Conservation Commission of New Mexico, and is within a participating area within said unit.

2. Applicant is the designated and acting operator of the Bell Lake Unit, and has the right to drill and develop the above-described lands. Under the terms of the Unit Operating Agreement, applicant is authorized to drill and operate wells within the unit area.

3. Texas West Oil & Gas Corporation, and/or Rupert Madera are the owners of an undivided 7/32nds interest in the E/2 of Section 5, insofar as the Pennsylvanian formation is concerned.

4. The owners of the mineral interest underlying the E/2 of Section 5 in the Pennsylvanian formation have been unable to agree to pool their interest in the E/2 of Section 5, Township 24 South, Range 34 East.

5. Texas West Oil & Gas Corporation has proposed the drilling of a well at a location 1980 feet from the North line, and 1980 feet from the East line of Section 5, to be drilled to a depth sufficient to test the Morrow formation, which well would directly offset, within 1700 feet, the Bell Lake Unit Well No. 14, and would fall within the drainage radius of that well.

6. The Texas West Oil & Gas Corporation application for compulsory pooling and approval of its well is presently pending rehearing before the Commission, which rehearing is set for October 23, 1975.

7. Approval of a well 1700 feet from the Bell Lake Unit Well No. 14 will result in waste, and will seriously impair the correlative rights of owners in the Bell Lake Unit.

8. In order to protect correlative rights of the owners of the Bell Lake Unit, and to prevent the waste that will occur if a well is drilled in close proximity with existing wells, applicant proposes to drill a well to be located 1980 feet from the South line, and 1650 feet from the East line of Section 5.

9. A well so located will be approximately 50% farther from the No. 14 well than the location proposed by Texas West, and will more efficiently drain the fourth Morrow reservoir. In addition a well so located, has an improved prospect of encountering the second Morrow sand in a productive area, and will prove more productive acreage within the Bell Lake

Unit so that it can be included in the Morrow participating area.

10. Applicant adheres to its position that the Bell Lake Unit Well No. 14 is adequately draining the E/2 of Section 5. Applicant proposes to drill a well located as proposed herein for the purpose of protecting the interests of mineral owners who have not committed their interests to the Bell Lake Unit, in the event the Commission finds such protection should be afforded, and for the further purpose of exploring for production from the second Morrow sand, and to protect the Bell Lake Unit from the creation of improper and wasteful drainage patterns.

11. Under the provisions of Commission Order No. R-5039-A, if said order is re-affirmed, if Continental Oil Company, and other interest owners in the Bell Lake Unit do not join in the drilling of the Texas West well, Texas West will receive far in excess of the amount of gas that Texas West has under lease and underlying the property it holds. Thus applicant would be forced to join in the drilling of this well, which is wholly unnecessary for the adequate development and drainage of the acreage involved, in order to protect its correlative rights in the gas underlying the E/2 of Section 5.

12. Applicant proposes the compulsory pooling as set out in this application as an alternative to the proposal of Texas West, and as a more reasonable means of protecting any correlative rights that might be impaired by the absence of drilling on the unit.

13. Approval of this application will protect correlative rights of all interest owners, including working and royalty interests, nad will prevent the waste that would occur with the drilling of a well in close proximity to existing wells.

WHEREFORE applicant prays that this application be set for hearing jointly with the application of Texas West Oil & Gas Corporation in Case No. 5493, or in the alternative that this case be set for hearing, as provided by law, and that any decision in Case No. 5493 be withheld until this application can be heard.

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Respectfully submitted,

CONTINENTAL OIL COMPANY

By James W. Kellahin

KELLAHIN & FOX
P. O. Box 1769
Santa Fe, New Mexico 87501

Attorneys for Applicant

BEFORE THE

OIL CONSERVATION COMMISSION OF NEW MEXICO

IN THE MATTER OF THE APPLICATION
OF CONTINENTAL OIL COMPANY FOR
COMPULSORY POOLING, LEA COUNTY,
NEW MEXICO

RECEIVED
OCT 20 1975
OIL CONSERVATION COMM.
Santa Fe

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Santa Fe, New Mexico 87501

Attorneys for Applicant

CASE NO. 5493
Order No. R-5039
Application of Texas West Oil & Gas
Corporation for Compulsory Pooling,
Lea County, New Mexico

CONTINENTAL OIL COMPANY
Bell Lake Unit #14 Well
Section 5, T-24-S, R-34-E,
South Bell Lake (Morrow) Field,
Lea County, New Mexico

Monthly Production as Reported in the Monthly NMOCC Oil & Gas Production Reports.

Year	Month	Monthly/MCFG	Daily Avg./MCFG
1974	August (First reported production)	233,251	7,524
1974	September	288,155	9,605
1974	October	296,677	9,570
1974	November	289,468	9,649
1974	December	301,441	9,724
	Cumulative 1974	1,408,992	
1975	January	295,260	9,525
1975	February	262,375	9,370
1975	March	40,273	1,299
1975	April	306,135	10,205
1975	May	423,994	13,677
1975	June	433,606	14,453
	Cumulative thru 6/75	3,170,635	

NEW MEXICO OIL CONSERVATION COMMISSION

COMMISSION HEARING

SANTA FE, NEW MEXICO

Hearing Date JULY 25, 1975 TIME: 9 A.M.

NAME	REPRESENTING	LOCATION
[illegible]	Texas West	Roswell
Victor T. Lyon	Conoco	Hobbs
Karen L. Torso	Conoco	Hobbs
Herbert C Walther	Conoco	Ponca City, Okla
Ronald McWilliams	Conoco	Hobbs
Jason Killam	Conoco	Santa Fe, N.M.
[illegible]	Texas West Oil & Gas	Midland, Tex

NEW MEXICO OIL CONSERVATION COMMISSION

COMMISSION HEARING

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Hearing Date JULY 25, 1975 TIME: 9 A.M.

NAME	REPRESENTING	LOCATION

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
July 25, 1975

COMMISSION HEARING

IN THE MATTER OF:

Application of Texas West Oil & Gas Corporation for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, Bell Lake Field, Lea County, New Mexico, to be dedicated to a well to be drilled at an orthodox location for said unit in Unit G of said Section 5. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof, as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for the risk involved in drilling said well.

CASE 5493

BEFORE: Joe Ramey, Secretary-Director

Phil Lucero, Member

TRANSCRIPT OF HEARING

A P P E A R A N C E S

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

THE NYE REPORTING SERVICE
STATE-WIDE DEPOSITION NOTARIES
225 JOHNSON STREET
SANTA FE, NEW MEXICO 87501
TEL. (505) 982-0386

(Appearances Continued)

For Texas West Oil & Gas Corporation:

Clarence Hinkle, Esq.
HINKLE, BONDURANT, COX & EATON
Roswell, New Mexico

For Continental Oil Company:

Jason Kellahin, Esq.
KELLAHIN & FOX
500 Don Gaspar
Santa Fe, New Mexico

I N D E X

E X H I B I T S

THE NYE REPORTING SERVICE
STATE-WIDE DEPOSITION NOTARIES
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SANTA FE, NEW MEXICO 87501
TEL. (505) 982-0386

MR. RAMEY: The hearing will come to order. We'll call the first case that's on the docket.

MR. CARR: Case 5493. Application of Texas West Oil & Gas Corporation for compulsory pooling, Lea County, New Mexico.

MR. HINKLE: If the Commission please, Clarence Hinkle, Hinkle, Bondurant, Cox & Eaton, appearing on behalf of Texas West Oil & Gas Corporation. We have one witness and four exhibits.

MR. RAMEY: Are there any other appearances in this case?

MR. KELLAHIN: Mr. Examiner, if the Commission please, Jason Kellahin, Kellahin & Fox, Santa Fe, appearing on behalf of Continental Oil Company in opposition to the Application. We will have three witnesses.

MR. HINKLE: These are the officially-marked four exhibits. There is included in this another thing which we haven't marked as an exhibit which the Witness will explain.

MR. RAMEY: I ask that all witnesses stand and be sworn, please.

(Witnesses sworn.)

MR. RAMEY: You may proceed, Mr. Hinkle, please.

L.N. DUNNAVANT

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

DIRECT EXAMINATION

BY MR. HINKLE:

Q State your name, your residence, and your position with Texas West.

A My name is L.N. Dunnavant, I'm President of Texas West Oil & Gas Corporation, and address, 609 Midland National Bank Bldg., Midland, Texas.

Q Are you a Petroleum Engineer?

A Yes, sir, I am.

Q State briefly your qualifications as a Petroleum Engineer and your educational background and experience.

A I was graduated from Oklahoma State in 1954 with a BS in Engineering; was with Phillips Petroleum Company for four years as an engineer trainee and Petroleum Engineer. I was with Arco Oil Corporation in Midland, Texas, for three years as a Petroleum Engineer and Coordinator of engineering and geolog[illegible]. I was with Rodman and Miller Oil Corporation for four years as Production Manager and I was co-founder and Manager of

Operations of Southwestern Natural Gas in 1965, co-founder and Manager of Operations for Western States Producing Company in 1969, and I became independent and formed Texas West Oil and Gas Corporation in June of 1971.

Q Have you engaged very extensively in the oil business in New Mexico?

A Yes, sir, I have.

Q Have you drilled a number of wells?

A Yes, sir.

Q In this particular area?

A Yes, sir.

Q And made a study of this area?

A Yes, sir.

MR. HINKLE: Are the qualifications of the Witness acceptable?

MR. RAMEY: The Witness is accepted, yes.

BY MR. HINKLE:

Q Are you familiar with the Application of Texas West in this case?

A Yes, sir, I am.

Q What is Texas West seeking to accomplish?

A Texas West is requesting compulsory pooling for all the mineral interests in the Pennsylvanian Formation

underlying the E/2 of Section 5, Township 24 South, Range 34 East. This is referred to as the South Bay Bell Lake Field Area in Lea County. This acreage is to be dedicated to a well to be drilled at an orthodox location, 1980 from the north and east lines of Section 5. Seeking further consideration for cost of drilling and completing this well and the allocation of those costs as well as the operating costs and charges for supervision. Additional consideration, Texas West being designated as operator of the well for a maximum charge of the risk involved in the drilling of this well.

MR. HINKLE: If the Commission please, as you know, this case was originally heard before the Examiner on May the 28th. At the time the Application was filed, our information was that there were two interests -- very small interests -- that were not committed to the Bell Lake Unit. The E/2 of Section 5, 24, 34, the Unit here that we are seeking to drill a well on, is within the boundary of the Bell Lake Unit. At that time, as I say, we were advised that the small interests of J.M. Clark and Dale M. Thompson had not been committed to the Unit. Since that time we have learned that these interests are committed, so the only interests that are uncommitted

that are involved at this time in the forced pooling, are the 7/32nds interest of the Applicant in this case, and of the royalty owners, of course, under their lease. At the original hearing we moved that any reference to Clark and Thompson be deleted from the Application and I would like to review that at this time, because it is not involved.

MR. RAMEY: Okay. That will be fine.

BY MR. HINKLE:

Q Have you prepared or has there been prepared under your direction exhibits for introduction in this case?

A Yes.

Q They are the ones that have been marked Exhibits 1 through 4?

A That's correct.

Q Refer to Exhibit 1 and tell us what this is and what it shows.

A Exhibit 1 is an area ownership map which reflects the wells located in the Bell Lake and Antelope Ridge Area. The Morrow producers are colored yellow on the map, the easternmost wells being in the Antelope Ridge, the westernmost wells being in the Bell Lake Unit

Area. On this particular map we have shown the calculated open flows for each particular well and a few additional points of information here that we have received regarding the current status of some of the wells.

Q Does Texas West own or have they drilled any of the wells that are shown on this Exhibit 1?

A Yes, sir. We have drilled the well -- the three wells located on the east side of the Antelope Ridge Field, two of them in Section 2, one in Section 35; we've also re-entered, deepened, and completed as a producer a well in the N/2 of Section 9.

Q That's 24, 34?

A Yes, sir, 24, 34.

Q Are these wells completed in the Morrow Formation?

A Yes, sir.

Q What interest does Texas West own in the E/2 of Section 5 of 24, 34?

A Well, exactly 7/32nds.

Q Is that a leasehold interest, a mineral interest, or what?

A We have a lease on 7/32nds.

Q Who are the mineral owners from whom you obtained

the lease?

A Rupert, and Lois, and Rufford Madeira.

Q The E/2 of 5 is fee land, is it not?

A That is correct.

Q And the Madeiras whom you referred to are the owners of an undivided 7/32nds interest in minerals?

A That is correct.

Q So your leasehold interest covers an undivided 7/32nds, is that correct?

A That is correct.

Q Has this interest been committed to the Bell Lake Unit?

A No, sir.

Q Either the leasehold or the royalty owner?

A No, sir.

Q With regard to the well that is shown in the W/2 of Section 5, is that a unit well?

A Yes, it is, Continental Bell Lake.

Q Producing from the Morrow Formation?

A Yes, sir, it is.

Q Do you know what the potential of this well was when it was completed?

A Yes, sir. The reported calculated open flow

was for 83-million cubic feet of gas per day.

Q What was the potential of the two wells or the well which was shown and which you referred to in Section 4?

A In Section 4 the original well was the Antelope Ridge No. 2 Well in the NE/4 of Section 4; it was potentialled for calculated open flow of 38-million cubic feet of gas per day. It later was -- it is still producing, but they drilled an offset replacement well for it because of mechanical -- they didn't drill it, they recompleted it -- an offset replacement well for it due to mechanical problems, and completed it in the Morrow also, and they are both now producing from the Morrow Formation.

Q Do you have anything else with respect to Exhibit No. 1?

A We have not except the fact here of information on several wells which we can give to you on other exhibits.

Q Now, refer to Exhibit 2 and explain what this is and what it shows.

A Exhibit 2 is a contour or structure map based on top of the Morrow Formation, which we are using as a correlative Morrow top, and shows the structure position

of the various wells located in both the Antelope Ridge and the Bell Lake Unit Areas.

Q From your study of the area have you formed an opinion as to whether or not all of the wells located on the structure are producing from the same reservoir?

A Yes, they definitely are; as far as Morrow goes they are producing from anywhere from 300 to 750 feet below the top of the Morrow Formation, which is part of the Morrow series, and they all are producing from the Morrow Formation.

Q Is this characteristic of the Morrow Formation?

A Yes, sir, it is.

Q To have driven stringers in

A Yes, sir, you do. These wells may or may not be connected throughout the reservoir. Most of the time somewhere in the reservoir they are connected but this is not a certainty, just a rule of thumb.

Q From the information you are studying, and Exhibit No. 2, have you formed an opinion as to whether or not the E/2 of Section 5 would be productive?

A Yes, sir, I definitely have.

Q In your opinion has any drainage occurred and is it occurring at the present time from the wells in the

W/2 of Section 5 and in Section 4?

A Yes, sir. We think especially the W/2 of Section 5 is located less than 1000 feet from our leased boundary line, is a very prolific well currently producing -- the latest production figures we have is approximately 14-million cubic feet of gas per day with 5300-pounds flowing-tubing pressure, and we certainly have to assume that drainage is very extensive across the lease line.

Q Do you have any information as to monthly production of the Continental well in the W/2 of 5 since its completion?

A Yes, sir, I do.

Q Where did you obtain this information?

A This was obtained from the monthly production as reported in the Monthly NMOOCC Oil and Gas Production Reports. This production run reflects the production from August, when production was first reported on August of 1974, through June of 1975. We have both monthly productions --

Q (Interrupting) Can you state what the average was for each month?

A Yes, sir, I will. In August of '74 the average

daily production was 7.5 -- these are approximations -- 7.5 MMCF per day, September of '74, 9.6 MMCF per day, October of '74, 9.6 MMCF per day, November of '74, 9.7 MMCF per day, December of '74, 9.7 MMCF per day, January of '75, 9.5 MMCF per day, February of '75, 9.4 MMCF per day, in March -- I don't know why they had a drop in production, apparently from mechanical reasons or one reason or another -- 1.2. This is actually 1299 MCF per day. For April, 10.2 MMCF per day, for May, 13.7 MMCF per day, for June, 13.5 MMCF per day.

Q There has been a steady increase during the last three months?

A Yes, sir.

Q Now, do you have anything else with respect to Exhibit No. 2?

A Exhibit No. 2 reflects the structural configuration of both the Bell Lake Unit Area and the Antelope Ridge Area in our interpretation, as best we can interpret it. It shows that these wells are all producing from a zone, similar zones, over an interval that is probably 700-feet thick, but structurally speaking the wells over on the east side are fairly commercial wells, they are low on the flank of the structure. Wells to

the south -- in specific reference are our Federal 9 No. 1 -- a low well, appears to be a commercial producer. The Continental Well located in the W/2 of Section 5 appears to be slightly lower or possibly flat structurally to our proposed location in the E/2 of Section 5. We have information on the Continental Bell Lake Unit No. 16 Well in the NE/4 of Section 7. We do not have the bottom part of the log, we have the log that was released, and our correlative marker shows the No. 16 Well to have a correlative Morrow top at minus 9834. We had contoured this well at a minus 9934, which, with no more control than we had to the south, we feel this is a very close approximation of the structural conditions there.

Q Now refer to Exhibit 3 and explain what this is and what it shows.

A Exhibit 3 is a cross section which is indexed at the bottom of the cross section itself showing the line of wells going from the westernmost well on the west side of the Bell Lake Unit, which is Continental's Bell Lake Unit No. 5, to Continental's Bell Lake Unit No. 14 well, which is in the west half of Section 5, to our proposed location, back down to our Federal 9 No. 1 Well in Section 9, back up to the Shell Well in Section 4, and

over to the easternmost well, which is Texas West Oil & Gas Corporation's State 2 No. 2. This cross section reflects the various intervals that produce from the Morrow series, and these are gross intervals and not net perforations. It can be seen that the Morrow producers, and as producing intervals starting as -- well even as high as 30 feet below the top of the Morrow down to 7 to 800 feet below the top of the Morrow Formation.

Q And that is the purpose of this Exhibit, to show that?

A Yes.

Q Do you have any further comments with respect to Exhibit 3?

A No, sir.

Q Have you had any contacts with Continental with respect to trying to reach an agreement to drill the proposed well?

A Yes, sir, I have. I contacted Continental.

Q Who did you contact?

A Mr. Marshall, which is a local landman, and informed him of our lease status there, and instructed -- I didn't instruct -- I requested that they consider

preparing an AFE and an operating agreement for us to drill a well in the E/2 of Section 5 because we felt like we were being drained and we needed an offset to it to remedy this excessive drainage across lease lines.

Q What was the response of Continental?

A They, of course, said that they were not interested in doing this and that they did suggest that we join the Bell Lake Unit, or that they would give us the opportunity to do so, which we refused to do and did not wish to do.

Q Did you have any further correspondence with them?

A Yes, sir. We wrote a letter to Continental --

Q (Interrupting) What was the date of that letter?

A Dated March 26 -- excuse me -- dated February the 28th, 1975, attention Mr. L.P. Thompson, Division Production Manager. In this particular letter we stated the circumstances; we requested that they submit an AFE and also a proposed operating agreement to cover the proposed well to offset their well in the E/2 of Section 5. We told them we were operators of several wells in the immediate area and that we were willing and would

help them in any way possible to complete this.

Q Did you indicate that you were willing to participate in the drilling of the well with them?

A Yes, sir, we did. We told them that we would participate at our working-interest share.

Q Down to what depth?

A Down to the Morrow Formation, and this is approximately 14,150 feet.

Q Did you receive a reply from Continental?

A Yes, sir, I did, from Mr. L.P. Thompson, to whom my letter was addressed, dated March the 26th, 1975.

Q What was their reply?

A Their reply was that they, of course, were not interested in drilling the well that we recommended; they stated that at the time that this was in a participating area, that they had in their application for the participating area specified that Bell Lake Unit No. 14 appeared to be capable of draining at least 640 acres and that they intended to develop the reservoir on that spacing. They further stated that they gave us an opportunity to once again join the Bell Lake Unit to the south participating area.

Q Did they specify any particular terms on which

you could join the unit?

A No, no particular terms, except under the same conditions as the participants in the Bell Lake Unit Area.

Q Have you considered joining the unit?

A We have evaluated it, yes, sir.

Q And what conclusions did you reach?

A We reached the conclusion that it would be uneconomical for us to do so; we do not wish to join their unit because in our opinion it is uneconomical.

Q Do you have any knowledge of the working interests in the participating area in the unit that you would be required to participate in?

A I beg your pardon?

Q Do you have any knowledge of a four-section participating area and a working-interest participation in the unit that you would be required to participate in if you did join the unit?

A Well, they have the south participating area that they referred to, which we would be participating in. Yes, sir, what they refer to as the south participating area.

Q Do you know whether or not you would be required to make an adjustment for intangibles and tangibles for

all the drilling costs that have taken place in the Unit?

A Yes, sir. We learned this at the original -- at the first hearing on it before the Examiner; they gave us a cost figure, I think it was something like $25,000 -- or our proportionate part at that time, which I don't think included the cost of drilling the No. 16 Well or No. 14 Well; I'm not sure that that's the well they had reference to.

Q Have you made an estimate of the cost of drilling this proposed well in the E/2 of Section 5?

A Yes, sir, I have.

Q Refer to Exhibit 4 and explain what that is?

A Exhibit 4 is our AFE for the drilling and completion of the proposed test to a total depth of 14,200 feet. The cost reflected thereon is for the total intangible well; cost for a completed well is $567,800; the total tangible well cost is $375,350, for a total cost of $943,150. Now, we think possibly this could be escalated, maybe add another 5-percent because of recent price increases since this was prepared.

Q In your opinion are these proposed costs in line with costs of a well generally in this area?

A Yes, sir.

Q Have you made an estimate as to the cost of supervision during the drilling of the proposed well?

A Yes, sir, we have. It is our estimation and from all the information that we can gather, that $1600 per month for a drilling well for drilling overhead is a fair price.

Q Is that in line with customary charges in operating agreements in this area?

A To our knowledge it is; we have direct reference here to Monsanto Chemical Company who informed us earlier in the week that they charge $1550 to $1650 for unit operations.

Q What about the monthly operating cost supervision in case you get the producing well?

A We have requested $250 per month, which I think is in line and fair. This once again approximates Monsanto's figures that they are now using which varies from $230 to $260.

Q And is it in line with other costs and charges?

A It is. As we have been able to check out, it is definitely in line.

Q In your opinion, should a risk factor be assigned

in connection with this well?

A Yes, sir, definitely. We think that the Morrow Formation is a very unpredictable animal and we are requesting the maximum.

Q Do you have anything to base this on as far as this particular area is concerned?

A Yes, sir, I do. If we may refer for reference sake to Exhibit No. 2. To begin with, of course, Continental has specified that they drilled several wells in the Bell Lake Area. Recalling from memory here of the original hearing before the Examiner, I think they stated that four out of the five Morrow wells that they have over here in the Bell Lake Area were non-commercial, uneconomical upon completion. Some of these wells are fairly close together as you can see from the map. We don't have all of them colored here, but they are certainly no more than 15 or 1600 feet apart, at least as far as one or two of the wells are concerned.

Q In your opinion that bears out the fact that a heavy risk factor would be appropriate in this area?

A Not only that, that is true, this is one example. Another example is up here in Section 33, which is in the Antelope Ridge area. Shell Oil Company, and

Continental Oil as a participant I assume, since they are involved in this Antelope Ridge Unit together, recently drilled a Morrow test in the SW/4 of Section 33, this well being less than 1/2 mile distant to the prolific producer down in the NE/4 of Section 4, and this particular well was drilled, tested, and abandoned in May of this year.

Another very good example of the risk involved is over on the east side of the field on our leases. Texas West Oil & Gas Corporation drilled the original well in the N/2 of Section 2, which is our State 2 No. 1 Well, as an Atoka producer. This well was non-commercial; we deepened it to the Morrow here recently. As of this date this well is producing less than 60,000 cubic feet of gas per day and declining. So we feel like this well will be abandoned here shortly as from the Morrow zone. This well is located approximately the same distance from our State 2 No. 2 as the Continental Well is from their Continental No. 14 is from our proposed location. Our State 2 No. 2 is a commercial well, and this well paid out in less than 12 months, so we are talking about 14 or 1500 feet distance in zones that are present north of us, south of us, directly offsetting us, and yet

non-commercial in this particular well.

Q In your opinion, what risk factor should be assigned in this case?

A The maximum, 200-percent.

Q 200-percent. In your opinion is there any urgency with respect to the drilling of this well?

A Yes, sir, there is. We feel like we are definitely being drained our correlative rights. Rights now are being damaged, and certainly after reviewing the production history on the Continental Bell Lake Unit No. 14 Well, they have increased the production as reflected in this production summary --

Q (Interrupting) Which you previously testified to.

A Which I previously testified to, they've upped it from an average of 9.4 million per day to 14.5 million per day, and we certainly think that excessive drainage is occurring across our lease line.

Q Do you know any particular reason why Continental has increased production?

A No, I can only guess. They want to produce as much as they can before a well is drilled offsetting in the lease.

Q In your opinion, would approval of this Application be in the interests of conservation, prevention of waste, and protect correlative rights?

A Yes.

MR. HINKLE: We would like to offer into evidence Exhibits 1 through 4.

MR. RAMEY: Without objection Exhibits 1 through 4 will be admitted.

(Whereupon, Texas West Oil & Gas Corporation's Exhibits 1 through 4 were admitted into evidence.)

MR. HINKLE: That is all on direct.

MR. RAMEY: Does anyone have a question of the Witness? Mr. Kellahin?

CROSS EXAMINATION

BY MR. KELLAHIN:

Q If the Commission please, Mr. Dunnavant, when did you acquire this lease?

A In January of 1975.

Q And that was after the Continental Bell Lake Well had been drilled, was it not?

A Yes, sir.

Q And you were aware of its capacity and of the

fact that it could well be draining the E/2 of this Section?

A As a matter of fact, I didn't know about the capacity at that time.

Q When did you learn the capacity of the well?

A I learned the capacity of the well when Mr. Rupert Madeira called and asked us if we would take a lease on this 70 acres and drill a well to protect his correlative rights. He then informed us on the status of production and we, of course, told him that we would do all we could to get a well drilled there.

Q So you are protecting his correlative rights and not yours then?

A And mine.

Q Yours too?

A Yes, sir.

Q This is a short-term lease, is it not?

A It is a short-term lease.

Q When does it expire?

A It expires August the 15th. We have now -- we are now processing a 90-day extension to it because of the delays we have had in getting the well drilled.

Q Now, what is the royalty reserved by Mr. Madeira?

A 3/16ths.

Q 3/16ths?

A Yes, sir.

(Whereupon, a discussion was held off the record.)

BY MR. KELLAHIN:

Q So you are proposing to drill a well on 7/32nds interest in which a 3/16ths royalty has been reserved, is that correct?

A Yes, sir.

Q And spend approximately a million dollars?

A Yes, sir.

Q Without the risk factor of 200-percent, would you drill this well; would it be economical for you to do so?

A Of course, you know if the well is there of course it is going to be economical to drill it. We don't know that it is going to be there. I guess the Morrow is more unpredictable than some ladies that I know.

Q Are you saying then that you would drill the well regardless of the risk factor?

A No, sir. I say this is a big important factor with us.

Q Well, could you answer yes or no?

A I would have to think about it very seriously.

Q Are you saying then that you can't answer then at this time?

A Yes, sir.

Q You say, in connection with the risk factor, you have testified in your opinion the E/2 is suffering drainage?

A Yes, sir.

Q And that indicates then that it is your belief there is production over there which is connected to and from the same reservoir as the well on the W/2?

A Yes.

Q And on your Exhibit No. 2 you show your proposed location to be structurally higher, is that correct?

A Yes, sir, to the Bell Lake Unit No. 14 Well?

Q Yes.

A That is correct.

Q And generally in the gas business that is an advantage, is it not?

A Yes, sir, it certainly is.

Q On your cross section, Exhibit No. 3, it would appear that the sands have thickened somewhat as you move

northeast?

A These zones, of course, thickening to the east -- you are referring to Exhibit 3 did you say?

Q Yes, I was. I'm just talking about the sand zones.

A Well now, there are prospective sands we think, additional sands in the Bell Lake Unit No. 14 that have not been tested out.

Q Well, what is marked on there; is that the gross sand thickness you've marked on there?

A These are perforations.

Q Perforations?

A Yes, sir, and on a Continental well here we have marked only the interval perforated, not all of the sands.

Q You haven't marked the entire interval perforated, have you?

A The gross interval that they perforated as reported, but we have not marked all of the potentially productive sands.

Q Now, in connection with this risk factor, the only risk you are talking about is the risk of encountering or not encountering production, is that right?

A Well, that is the risk involved as far as I'm

concerned, yes, sir.

Q And yet all the evidence shows that the chances of encountering production are extremely good?

A Yes, sir, but they were also, as a matter of reference, on our well over in the northwest corner of Section 2, which is approximately the same distance as the proposed location is to the Continental No. 14.

Q How close was that?

A About 14 or 15 hundred feet.

Q And you're proposing to drill that 1700 feet?

A There abouts, yes, sir.

Q And I believe you testified that Continental had stepped out only about 1500 feet on some of these.

A Well, I was only approximating, I haven't put it to scale.

Q Well, actually you know how many wells Continental has attempted to complete in the Morrow in the Bell Lake Unit?

A Several, yes, sir.

Q Actually it is only four, is it not?

A Well, it is my understanding it was five.

Q What wells then are stepped out only about 1500 feet?

A Well, I don't have all of them; I was referring to the original testimony presented at the hearing before the Examiners, and those Exhibits that Continental presented were a little confusing, and we don't have detailed information on the exact well locations, but it was our understanding at the time that the closest one could have been 1500 feet or there about.

Q But you can't name the wells?

A No, sir. I can't name the wells. I don't have that particular exhibit to refer to.

Q Now, on this cost of supervision, you made reference to Monsanto charges as the index of what should be charged?

A Yes.

Q Where do they operate in this area?

A This particular -- they are in joint operating and have a working interest with other companies, and they have executed operating agreements that contain these provisions.

Q Where?

A Eddy County, Lea County.

Q I'm talking about this area; do they operate in the vicinity of this well?

A Not that I know of, but Monsanto does not go by areas more or less; they go by counties, and then they group it by depths.

Q What other companies did you contact in connection with this?

A American Quasar.

Q What do they charge?

A American Quasar charges approximately the same as Monsanto.

Q Any others?

A Those were the two that we have had direct reference to.

Q Now, would the answer be the same as to the combined-fixed rate or monthly charge?

A Yes, sir.

Q Just the two companies?

A The two companies.

Q And does American Quasar charge $250 a month?

A They charge anywhere from $190 to $270 a month depending, and in all unit operations it is approximately $250.

Q Approximately?

A Approximately.

Q What's the range?

A $190 to $260, as I said.

MR. KELLAHIN: That's all I have; thank you, Mr. Dunnavant.

MR. DUNNAVANT: Yes, sir.

MR. RAMEY: Any other questions?

MR. HINKLE: I have one other question here.

REDIRECT EXAMINATION

BY MR. HINKLE:

Q From your experience in developing the Morrow Formation, do your wells depend entirely on structure or are these stratographic traps?

A They do not depend on structure, Mr. Hinkle. Structural positions sometimes give you an indication as another tool to use, certainly not something you can depend on.

Q And it is because of this stratographic trap situation that makes it --

A (Interrupting) Very hard to predict.

Q Because one stratographic trap can discontinue regardless of the correlation if it might extend further?

A Yes, sir. As one example, if I may refer once again to Exhibit 3 which shows our State 2 No. 2 Well.

We have here shown the perforations of -- the gross perforations of about five sand bodies in this particular well. We had these same sands indicated to be developed in our 2 No. 1, which is 1400 to 1500 feet to the northwest of this particular well. We perforated, treated those particular zones and they are non-commercial.

MR. HINKLE: That's all.

MR. RAMEY: Any other questions of the Witness? The Witness may be excused.

MR. KELLAHIN: If the Commission please, this is a case which is unique in the history of the Commission. We have had before the Commission and before its Examiners many many cases involving compulsory pooling and the Commission has acted on those under the provisions of the compulsory pooling statute. It says that one operator has the right to drill and develop, and the Commission may pool to prevent waste and protect correlative rights. In this case we have a unique situation as I said in that the area involved in this Application is not only within the outter boundaries of the Bell Lake Unit, it is within a participating area and all of the other interests, other than this 7/32nds has been participating and the 7/32nds interest has been escrowed. So, we are in a

situation where we are talking about correlative rights, and I do in my closing statement want very much to expand on this because we feel that the Applicant in this case has failed to meet the requirements of the compulsory pooling statute: first the prevention of waste and second the protection of correlative rights. And we will undertake to show that if this Application is approved, waste will occur and correlative rights will be impaired, and that will be the thrust of our testimony.

I would like to call as our first witness Mr. Ronald McWilliams.

RONALD McWILLIAMS

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 Ronald McWilliams.

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

A I'm employed by Continental Oil Company as a Supervising Reservoir Engineer.

Q What is your education and experience as a

Reservoir Engineer, Mr. McWilliams?

A I received a Bachelors Degree in Petroleum and Natural Gas Engineering from the Pennsylvania State University in 1951. I was then employed by Lyon Oil Company in various engineering capacities in Arkansas and Texas for a period of three years and I then went to Venezuela for a two-year period for Minny Grande Oil Company, and at the conclusion of this assignment I returned to school and received a Masters Degree in Petroleum and Natural Gas Engineering from Pennsylvania State University in 1958. I have been employed by Continental Oil Company in New Mexico since that time in various engineering assignments, but for the last 12 years I have been specializing in Reservoir Engineering.

Q And have you been located in Hobbs?

A Yes, I have.

Q Does the area involved in this Application come under your jurisdiction as a Reservoir Engineer?

A Yes, it does.

Q Now, you have testified before the Oil Conservation Commission in the past and had your qualifications accepted?

A Yes, I have.

MR. KELLAHIN: Are the Witness' qualifications acceptable?

MR. RAMEY: Yes, Mr. Kellahin.

BY MR. KELLAHIN:

Q Mr. McWilliams, are you familiar with the geology and the development history of the South Bell Lake Morrow Pool?

A Yes, I am.

Q Would you please review this for us?

A Yes. The Morrow Formation can be subdivided into four general intervals of sand deposition in the Bell Lake Unit area, and production occurs in individual lenses scattered throughout the Morrow Formation. Production was first established in the fourth Morrow interval in Continental's Bell Lake Unit No. 5 which was completed on November 2, 1958, for an absolute open-flow potential of 7625 million cubic feet per day. Exhibit 1 is a log showing the four general Morrow sand intervals and the completion interval for the Bell Lake Unit No. 5. This well produced 2.7 billion cubic feet over a 16-year life and depleted the lens in which it was completed. Exhibit No. 2 is a plat showing the pressure-production history of the well. This well had an initial bottomhole

pressure of 8902 pounds and an estimated bottomhole pressure of 1250 pounds when it was abandoned this year. The straight line relationship between the bottomhole pressure and cumulative production indicates this lens was a volumetric reservoir with no water influx. The second well completed in the South Bell Lake Morrow Pool was Continental's Bell Lake Unit No. 1A. This well was recompleted from the Devonian to the Morrow Formation on July 30th, 1968, and had an absolute open-flow potential of 1.9 million cubic feet per day. The completion interval for this well is in the first and second Morrow sand as shown on Exhibit 3, which is a log section showing the four general Morrow --

MR. RAMEY: (Interrupting) Excuse me, where is 3?

(Whereupon, a discussion was held off the record.)

A (Continuing) 3 is the log section showing the four general Morrow sands intervals and the completion interval of Bell Lake No. 1A. This well had an initial bottomhole pressure of 8736 pounds and has produced 1.8 billion cubic feet to June 1st of this year, and is currently making about 608 mcf per day. Exhibit No. 4

is a plat showing the pressure-production history of No. 1A. The current bottomhole pressure in this well is estimated at about 1250 pounds and the shape of the curve indicates that this well too is producing from a lens with no water influx.

The third well to be completed in the pool was Continental's Bell Lake Unit No. 14. This well was completed in the fourth Morrow interval during April, 1974, for an absolute open-flow potential of 82.6 million cubic feet per day. Exhibit No. 5 is a log section for this well showing the Morrow section and the completion interval. This well had an initial bottomhole pressure of 8622 pounds and has produced 3.4 billion cubic feet to July 1st, 1975. Exhibit No. 6 is a plat showing the pressure-production history of No. 14. The completion intervals and the pressure-production histories of the three producing wells in the South Bell Lake Morrow Pool proves the wells all produce, or have produced, from individual reservoirs and are not in pressure communication with each other.

Q Now, Exhibit No. 6 shows the indicated reserves for the Bell Lake Unit No. 14 to be about 36 billion cubic feet, is that correct, Mr. McWilliams?

A Yes.

Q Have you made any estimate of the size of this reservoir?

A Yes, we have. The log porosity in Bell Lake Unit No. 14 ranges from about 9 to 12-percent with an average of about 10-percent. Log water saturations are about 25-percent and net pay for logs is estimated at about 25 feet. With these numbers a minimum reservoir size of 1440 acres can be calculated, and that would be the size necessary to contain the indicated reserves of the No. 14 Well. Testimony will be presented shortly by another witness which will elaborate further on the question of reservoir size, but all of Section 5 in which the No. 14 is located can reasonably be presumed productive.

Q Now, with the lenticular nature of the Morrow reservoirs in this area, don't you think it is possible that the reservoir could be absent under the E/2?

A No, I don't. Exhibit No. 7 is an east-west cross section through the Bell Lake Unit No. 4 located to the west of No. 14, the No. 14 Well, and Shell's Antelope Ridge Unit No. 5 located to the southeast of No. 14. You can see that the fourth Morrow sand from

which No. 14 produces is nearly gone in the Bell Lake Unit No. 4, but it is present in the Shell well to the east, and therefore it can reasonably be presumed to be present under the E/2 of Section 5.

Q Now, there was a reservoir-limit test run, was there not?

A Yes.

Q And there is a barrier test?

A Yes.

Q And that will be testified to by another witness?

A Yes, it will.

Q If production on the E/2 of Section 5 is so much of a certainty, why doesn't Bell Lake Unit propose to drill it?

A For several reasons. First, Exhibit 6, the pressure-cumulative plat for No. 14, proves that the well is draining the reservoir since pressure is declining and at its producing rate of 15-million cubic feet per day the reservoir will be depleted in a reasonable time. Therefore, additional drilling to the reservoir discovered in No. 14 will not add any reserves and only serve to shorten the producing life of the reservoir. Since the

gas produced from No. 14 is being sold to an interstate pipeline, Federal controls prevent us from realizing an adequate price to make drilling solely to shorten the life of the reservoir economical. In fact, Federal regulations has inhibited the development of gas reserves in the Bell Lake Unit since its inception and is the major reason why development has been so prolonged. Since some relief in gas pricing was granted in 1973, the Bell Lake Unit working interest owners have drilled three wells at a cost of over a million dollars per well, and incidentally all more than 1700 feet, in fact more than 4000 feet from an existing well, so the unit owners are developing in a diligent manner when Federal regulations permit.

A second well in Section 5 is not only unnecessary from a drainage standpoint, but uneconomical for the working-interest owners as well.

Q If it is unnecessary from a drainage standpoint, in your opinion would the drilling of such a well constitute waste?

A Yes, it would.

Q The Unit has just drilled a fourth well; did it encounter the fourth Morrow reservoir developed in Well

No. 14?

A Yes, it did. We are now in the process of completing this well and production testing should commence sometime in the next week or so.

Q Did I misunderstand your testimony, or if not, why did you drill this well if further development of this reservoir is uneconomical for the unit owners?

A Well, due to the lenticular nature of the Morrow reservoirs, there is a possibility of finding additional Morrow reserves in a new lens. When this happens, the economics of developing are enhanced sufficiently to justify additional development.

Q Did you find any additional reserves in the Bell Lake Unit No.16?

A Although we have not yet tested the zone, logs indicate we have. Exhibit No. 8 is a log section showing the Morrow section in No. 16 and the zones we plan to test.

Q Do you think you have found sufficient reserves to make the drilling of the No. 16 economical?

A Well, the logs are encouraging, but it is impossible to predict the size of a Morrow lens from log data alone. Pressure and production data are necessary

before the reserves can be established with any degree of accuracy, but it appears we may have added about 6-billion cubic feet on a volumetric calculation basis for 320 acres.

Q Now, since you apparently were successful in finding additional pay in No. 16, couldn't the same thing happen in the E/2 of Section 5?

A Yes, but it's not very likely at a location only 1700 feet from No. 14. No. 16 represents a stepout of over 5000 feet from No. 14. If drilling in the E/2 of Section 5 is to add any new reserves, the possibility for the finding of additional reserves would certainly be enhanced by drilling in the SE/4 rather than at the proposed location, or in any event, further away than 1700 feet.

Q Are the working-interest owners planning any further Morrow development?

A Yes. We have plans to drill one additional well this year and four next. Great Basin is drilling a well in Section 29, just north of the unit, and we are waiting on the results of their completion before making a final selection for our next location.

Q In the operation of the Bell Lake Unit, what

development strategy are you using?

A We prefer to keep additional drilling on essentially 640-acre spacing initially. De-regulating gas prices would force reconsideration of spacing, but the wider spacing will prove the maximum amount of acreage with a minimum number of wells.

Q Do you think this approach protects correlative rights?

A Yes. The participating area can be expanded faster in this manner and all reasonably proven acreage will share in the revenue sooner than under development on 320-acre spacing.

Q Now, the Texas West Witness has testified that they feel their correlative rights are being impaired. What about their correlative rights?

A Well, they can easily protect them by joining the unit. They would then share in both established production and future production. Since they are not subject to existing gas contracts, they are free to contract their gas of more favorable prices available from intrastate purchasers or under small producer exemptions available on interstate sales.

MR. KELLAHIN: That completes direct examination

of this Witness.

MR. RAMEY: Let's take a 10-minute recess.

(Whereupon, a short recess was held.)

MR. RAMEY: The hearing will come to order.

MR. KELLAHIN: If the Commission please, could I go back and ask a couple more questions of this Witness before we submit him for cross examination?

MR. RAMEY: Yes, Mr. Kellahin.

BY MR. KELLAHIN:

Q Mr. McWilliams, in connection with our Exhibit No. 7, which was the cross section, it would appear that the Shell Well shown on that Exhibit is a dry hole even though the Morrow sand is present. Now, couldn't the same thing happen on the E/2 of Section 5?

A No. The Shell Well wasn't tested because log analysis indicated that sand to be known productive. However, a reservoir limit test was run in our Bell Lake Unit No. 14, and no barriers could be seen within 2000 feet of our No. 14 wellbore. Since the proposed location is only 1700 feet from No. 14 there is no geological or engineering evidence to refute the productivity at the proposed location. This limit test will

be reviewed by another witness in more detail later.

Q Now, Mr. McWilliams, on the basis of your analysis of this reservoir, as a Reservoir Engineer, in your opinion is the proposed location of Texas West a high-risk location?

A I would say it's a gut cinch.

Q Would you say that a 200-percent risk factor based on the probability of obtaining production would be a proper risk factor as testified to by the Texas West Witness?

A No. I think it is highly excessive.

Q What risk factor would you recommend if the well is to be drilled?

A I would recommend no risk factor.

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

A Yes, they were.

MR. KELLAHIN: At this time I would like to offer into evidence Exhibits 1 through 8, inclusive.

MR. RAMEY: Without objection Continental's Exhibits 1 through 8 will be accepted.

(Whereupon, Continental's Exhibits 1 through 8 were admitted

into evidence.)

MR. RAMEY: Any questions of the Witness?

CROSS EXAMINATION

BY MR. HINKLE:

Q Mr. McWilliams, I believe you testified that you felt that the Bell Lake Area could be developed on 640-acre spacing drainage; didn't you indicate that in your testimony?

A I indicated that our plans were to develop the Bell Lake Unit Area initially on 640-acre spacing, and the decision as to final drainage or development pattern would be dependent on pressure-production history and gas prices.

Q Have you obtained special pool rules for 640 acres?

A No, we have not.

Q So really, as far as the Morrow, it's on the statewide rule of 320-acre spacing, is it not?

A Yes, it is.

Q Now, I would like for you to refer to your Exhibit No. 7, which I believe is a cross section; I also hand you Applicant's Exhibit No. 1. I would like for the Commission to refer to Applicant's Exhibit No. 1.

Now, I would like for you to trace this cross section on Applicant's Exhibit No. 1 starting with the well in Section 6.

A Well in Section 6, all right. The first well on the cross section is the Bell Lake Unit No. 4, which is located approximately 1980 from the north and west lines of Section 6. The next well is Bell Lake Unit No. 14 approximately 1 mile to the east in Section 5, and then the third well on the cross section is the Shell Antelope Ridge Unit No. 5 located in the SW/4 of Section 33 to the northeast of our Bell Lake Unit No. 14.

Q Now, that well in Section 33 is the well which you have just testified to which was a dry hole?

A Yes.

Q Now, why didn't you -- you say on this cross section west east stratographic section -- why didn't you indicate or take into consideration as the third well the well in Section 4?

A The well in Section 4?

Q Yes, directly to the east instead of going to the northeast.

A Well, we could have; we were just trying to show the continuity of the fourth sand in as close proximity

to the proposed location.

Q Now, isn't it a matter of fact, Mr. McWilliams, that you cannot correlate the sands that are shown and correlated here in the wells in Section 6 and 5 with the one in 4?

A You can find the fourth Morrow interval in the well in Section 4 but it isn't developed as it is --

Q (Interrupting) So that must have been the reason why you went to the northwest up here, is it not?

A Yes, I guess that's part of it.

Q All right; now doesn't that indicate that there could be a pitch-out between the well in the W/2 of Section 4 and the well which is proposed to be drilled or in that vicinity or just east of the well proposed to be drilled in Section 5?

A When you consider all geologic and engineering evidence, no, not in my opinion, that's all.

Q Now, I believe you also submitted here -- I don't know which exhibit it was -- a log of Well No. 16 in Section 7?

A Yes.

Q And it was a dry hole?

A 16, no. We're just in the process of completing

it. It should be tested here shortly, but our logs indicate that we do have production in fourth Morrow sand in which the No. 14 is completed and also we have found another sand in the second Morrow which we assume will be productive.

Q Well, your logs then indicate, do they not, that there could be a stratographic trend between the well in Section 33, the one in the W/2 of 5 and your No. 16 and 7?

A Yes.

(Whereupon, a discussion was held off the record.)

BY MR. HINKLE:

Q Now I would like to hand you Applicant's Exhibit 3 and would like for you to correlate the sand, which you say can be correlated to some extent, of the well in Section 4 and Section 6 -- your No. 4 in Section 6 -- your well in the W/2 of Section 5 with the well in Section 4.

A What is your -- do you want me to identify it? These two wells here? Well, without being able to move these logs and having to look across the paper like that, I would think that about the fourth sand in this No. 2

Well would come in at a depth of about 1350, plus or minus, on that log.

(Whereupon, a discussion was held off the record.)

BY MR. HINKLE:

Q That would be 650 feet below the No. 4 from the top of the Morrow?

A I believe that's about right; I would accept that, give or take.

Q The Well No. 14 is 480 feet below, is that right?

A About that.

MR. HINKLE: I believe that is all the questions I have.

MR. RAMEY: Any other questions of this Witness? He may be excused.

MR. KELLAHIN: I call Mr. Herbert Walther.

HERBERT C. WALTHER

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 My name is Herbert C. Walther.

Q By whom are you employed, Mr. Walther?

A By Continental Oil.

Q What is your position with Continental Oil Company?

A I am Research Associate in the Production Research Department.

Q And where are you located?

A Ponca City, Oklahoma.

Q Mr. Walther, what is your education and experience as a Research Associate?

A I got my Bachelors Degree from the University of Illinois.

Q In what?

A In Chemical Engineering from the University of Illinois in about 1954, and then I got a PhD from the University of Minnesota also in Chemical Engineering in 1959, and in January of 1959 I started work with Continental Oil Company initially in fracturing and sand control, but I got interested in formation evaluation and in about 1960 or '61 I got into pressure build-up and drill-stem test analysis. Because of this interest I was transferred to Group Leader of the Logging Group

and I worked in the logging area until around 1967, and then core analysis and pressure transient testing -- by "pressure transient testing" I mean pressure build up, fall out, and various pressure response tests -- was transferred into my area, and then since about 1968 I have been working about steadily in pressure transient testing. Then, in around '72 or '73, I was flit off as Research Associate so I could do research specifically in the area of pressure transient testing.

Q Have you conducted any classes in this field, Mr. Walther?

A Yes. I have been conducting a Pressure Transient Testing School, teaching the Pressure Transient Testing School for at least four or five years.

Q Was that for Continental Oil personnel?

A That is for Continental Oil.

Q And have you written any articles, papers?

A Specifically in pressure transient testing I co-authored a paper and presented it at the last AIME meeting out in Ventura; that was earlier this spring.

Q Does the area involved in your work cover all of Continental's operations, including the Bell Lake Unit?

A Yes.

Q So it specifically comes under you in this field?

A Well, yes, when we are requested to give help.

Q In other words, you perform a service for the operations of the Company, wherever it may be?

A Yes.

Q And were you requested to perform such a service in connection with this case?

A Yes.

MR. KELLAHIN: Are the Witness' qualifications acceptable?

MR. RAMEY: Yes, they are acceptable.

MR. HINKLE: What is he qualifying for?

MR. KELLAHIN: Well, he told you.

MR. HINKLE: Chemical Engineer?

MR. KELLAHIN: Well, he told you what he is qualified for, Mr. Hinkle; I think it is quite clear in the record and I will stand on the record. Do you have any questions for his qualifications, Mr. Ramey?

MR. RAMEY: No, I do not.

BY MR. KELLAHIN:

Q Were any special tests in the Bell Lake Unit

No. 14 performed with your assistance?

A Yes. Basically a build-up test, and the object of this test was to see if there were any nearby barriers that we could detect through testing, and this involved shutting in the well for a period of 50 hours and measuring the pressure response versus time. Now, maybe this is where I ought to go to the blackboard, and by the way, in this discussion, if you have any comments or questions as I go along, feel free to ask them. I don't want to go into too much detail, and yet I don't want to leave out some of the things you might be interested in. Basically what we are trying to do is come up with a plot like this, and this will be plotting pressure versus the log of either T over Delta T, or in this case, this well has been on production for a long period of time and we plot this just as log T, where T now refers to the time, and Delta T refers to the separate case up here refers to the shut-in time. I guess I should write a Delta T. The period I am going to be talking about is discussed in this monograph; this is called "Pressure Build-up and Flow Test in Wells," by Matthews and Russell, and this is one of their monograph series and it is published by the Society of Petroleum Engineers of the AIME

in 1967.

Q In that connection, is that a work that is recognized in the profession and accepted as an accurate means of judging reservoir proponents?

A Yes. In fact, I believe this publication was instigated on behalf of the AIME and a number of industrial representatives looked this over before it was finally published. But, what we are looking for is that basically we should see a straight line on this plat, and this line should remain relatively straight unless we come across a barrier, and the presence of a barrier causes an upward kick. In fact, if sufficient time is allowed, this kick will -- if we have a simple barrier -- this kick will show increase by a factor in two in the slope. Now, we were asked to design this test, and an important design consideration is first of all, will the test run; can you run the test long enough to see out as far as you would like to see. Secondly, will the gauge have enough resolution.

Q What gauge are you talking about?

A I'm talking about a bottomhole pressure gauge. To run these tests, the best way of running these tests, is to run a gauge in on either a wire line or cable down

near the bottom of the well and measure the pressure to this point. So, in our early work -- we do it by two ways. First of all we use an equation as given in this book for the radius and investigation, and we're normally conservative so we use about twice the time predicted by this equation. Then we also take the parameters that we think the reservoir might look like and essentially put a boundary in and run a test on paper and see if we do the job. Then we also look at what kind of pressure changes that were involved and we pick our gauge on that basis. Now, in this particular case, in the earlier test which had been run was just an Amerada-type gauge --

Q (Interrupting) Would you explain what you mean by an Amerada-type gauge?

A Yes. An Amerada-type is a bourdon-tube gauge, but this I believe GRC is currently manufacturing, but basically it is this bourdon-tube gauge and it has a down-hole recorder where a scribe scratches a pressure trace on a piece of shim stock, and then when the gauge is retrieved you can put this in a chart reader and read the pressure-versus-time response. And so this earlier test was done with this type of a gauge and the problem here is that after a few hours, 6 or 7 hours, you have lost resolution,

so in designing this new test we needed to have a gauge that would maintain resolution for the length of the test, and for this reason we went to a Sperry Sun gauge. Now, this Sperry Sun gauge is also a bourdon-tube type gauge, but it had a system in it where it amplified the response by a factor of 20, and this gives, or we generally found about a factor of ten better resolution -- ten to twenty better resolution -- than the Amerada gauge. Now, this particular gauge is run as a service by Sperry Sun and I think that probably most people here are familiar with this service.

Q What do you mean when you say, "better resolution"? Would you explain that, please?

A Yes. What I mean by "better resolution," is that whenever we read the gauges, is that when you read them very carefully these points won't all fall in a straight line; you're going to see a scatter. And, by "resolution" we're talking about the width of this scatter. We normally talk in terms of a data band, and the data band for the Sperry Sun is much less than the data band for the Amerada.

Q You consider it more accurate from that point of view, do you not?

A Yes. More accurate, and it has some other advantages. Sperry Sun is a service company and takes better care of their gauges, and also in this case they brought the gauges out on location and they are there while the gauges are run in the hole; they are there while the gauges are retrieved, and then they read the gauges themselves. So, these readings come from Sperry Sun. Now, the Hobbs division personnel supervise the actual running of this test, and as I mentioned, it lasted for about 50 hours and it's plotted in Exhibit 9 of the handout.

Now, the thing I would like to call your attention to on this test is that in this particular test we started out forming our straight line -- and you see this data band on here which I referred to earlier. Notice that the scale is about 7111 to 7119 on the side. So, this data band is about what we would expect from a Sperry Sun under these conditions. You start out with a straight line and then out here someplace you notice this departure from the straight line -- or separation from the straight line -- and this occurs, or becomes really noticeable at about 30 hours, but you take that plot and put a curve through it and look at the data a

little more carefully, it looks like it probably actually starts at around 19 hours. So, this is one place where we might start our calculations, and to start our calculations we might refer to the monograph again, page 95, that this is equation 10.9, and this is the equation that suggested when multiple boundaries might be present for locating the nearest boundary.

Q Now, would you define what you mean by "boundary" in this instance? What are you talking about?

A Okay. I'm talking about a linear boundary, or a point from which the reservoir ends essentially. This can be a fault or just an end of the sand blends.

Q It could be a pinch-out in permeability?

A Yes, but just essentially the end of the reservoir.

Q So that is really what you are looking for with this test, where that barrier would be?

A Right.

Q How close to this well.

A Right.

Q It does not give you the direction, does it?

A No. This type of a test will not give the direction.

Q But it will give the distance?

A Right.

MR. RAMEY: Barrier and boundary are synonymous?

MR. WALTHER: That's right; we're using it as a general term.

A (Continuing) But, if you go back and calculate this distance, just based on this formula -- maybe I'll just draw it up here -- times ten into minus 30; K, permeability and millidarcy, E is time and hours over the porosity, and probably F would be a good term for the porosity -- a few years ago this is what was used in the literature but more recently this term is used -- times the viscosity times the compressibility, and when we did this we came up with a value around 4858 feet, just using this type of approximation. Another technique that can be used is the equation 10.8 in which now we can do it another way; we can take a point out here and we can take the absolute pressure difference, and from this pressure difference -- and you can use the equation 10.8 in the monograph -- we can also calculate a distance to the boundary. In using this type of a technique we end up with 3993 feet, again almost 4000 feet. But now, one word of caution is that these solutions really work

best in a boundaried reservoir, so we have just found from experience that we use these type of calculational procedures only as a starting point and that we start with this kind of information and then we use other information that we have available and really use a computer-type analysis in which we try to simulate the behavior of the reservoir.

Q Before we get to that, I believe you testified earlier that in your application of this first formula you discussed, you reduce it by a factor of two?

A That's right. In fact, when we teach this in our school we normally write it like this with a factor of 1/2 in front of it, and it's been kind of our experience, in the cases where we have run into it and later had a chance to check it, that this formula is rather highly optimistic.

Q So, on that basis you would be talking about a boundary of approximately 24 to 2500 feet rather than 4800 feet, is this correct?

A That is correct. We took the data that was available, and well, first of all, we have some additional information; we have a material balance. Now, this well has been on production for over a year and has shown

a considerable pressure depletion as you see from what we turned out earlier, and so we could make a P-over-C plot and come up with a rough idea of what the areal extent of this reservoir was, and we did this. Right away a warning flag flashes as far as these calculations are concerned in that if this were a nice square or circular reservoir with a well right in the center of it, we wouldn't have seen this upward bend, so we know something is different, and so we proceeded on with what we know and we have some important facts here that we can base our model on. One is a general idea of what the total area of the reservoir is, and the other is the curve shape here, and when this departure first occurs. Now, there was a publication earlier by Ramey and Earlougher in the JPT Forum. This was in February of 1968.

MR. RAMEY: The record should show that it is not "Ramey."

MR. WALTHER: No, it is H.J. Ramey, Jr., and R.C. Earlougher, Jr.

A (Continuing) But, this particular article gives a pretty good clue as to what that shape might mean, as he has some build-ups for us in a number of different shapes. So, looking over this and the data that we have,

we proceeded to use this computer model, and now by "model" I mean a system of equations that are in the computer such that we can feed in what we know about the reservoir as far as the reservoir properties and the fluid properties and we can put in the geometry for the reservoir and we'll get our pressure response. When the pressure response does not match we know we're at the wrong case, and so we work around and try to get a feeling for what it requires -- what would be required -- in that reservoir to produce this type of behavior.

Q In talking about the "response," you're talking about the pressure build-up curve which you have just been discussing?

A Yes. I'm talking about the pressure build-up curve. We had a curve that looked something like this, and so what we did was use what we had and start trying to match this response with our program, and what our program does is it turns out a time-versus-pressure history, and we can take this kind of data and plot it on this curve and work with the dimensions until we get something that matches it, and this we did, and in so doing we found that when we used a boundary 2500 feet away from the wellbore, that we got something that bent,

but not quite steep enough. It showed some of these other characteristics, but it didn't show this type of behavior, and when we moved the boundary to 2000 feet we ended up with something that came up here too much, and so it was our conclusion from this type of an approach that there is a boundary out there but that it is at least 2000 feet, and actually, if you look at the pressure here, probably a little closer to 2500 feet.

Q Now, in feeding this material into the computer did you use the same reservoir characteristics and fluid characteristics testified to by Mr. McWilliams?

A Yes. We received our data from the Hobbs division.

Q On the basis of your analysis then you say there is a boundary but it is in excess of 2000 feet, and probably 2500?

A Right.

Q And that would agree with your first calculation based on formula, modified as you do it?

A That's correct. I might mention something else; that in the data we used we tried to be conservative and there is a discrepency. Instead of using I believe 10 percent, which was used here, we used a conservative

value of 12-percent. Now, that might not seem conservative to you, but I mean conservative from the standpoint of how far the boundary is out. Now, if you remember this old distance equation, and it affects our other work in about the same manner, this 1.05 times 10 and a minus third KT over porosity, you see that as I increase the porosity I pull the boundary in.

Q So the higher the porosity, the closer the boundary?

A That's right.

Q Do you have anything to add to your testimony, Mr. Walther?

A I believe that covers everything.

Q Just sit down then, would you please. Now, based on your examination of this reservoir, is the effect of your testimony and your conclusions that a well drilled 1700 feet from the No. 14 Well would be within the area of drainage of that No. 14 Well?

A Yes, I certainly believe it is. I think in this case we've got a couple of things going for us, and that is that had we first of all gotten material balance -- this P over Z study, and from previous testimony it seemed to work pretty well in this area, and if you just take a

P over Z type plot, and if you calculate the average distance to a boundary, that it is something close to 4000 feet. Now, in this particular case we have a system where the nearest boundary is over 2000 feet, and in order for you to drill a well to get that close to the boundary you would have to take a particular line-up that, remember, in one direction it might be 2000 feet and in the other direction it could be something more; it could be over a mile away from this well.

Q But, in connection with your conclusion, there is a boundary approximately 2500 feet. The direction is immaterial when you are talking about a well 1700 feet away is it not?

A That's right.

Q It doesn't make any difference which direction you are talking about?

A No, it doesn't.

Q It could be in that direction or it could be in some other direction?

A It could be in the mile direction or more direction.

Q Was Exhibit No. 9 prepared by you or under your supervision?

A Prepared under my supervision.

MR. KELLAHIN: At this time I would like to offer Exhibit No. 9.

MR. RAMEY: Without objection, Exhibit 9 will be considered part of the record.

(Whereupon, Exhibit No. 9 was admitted into evidence.)

MR. KELLAHIN: That is all we have of this Witness, Mr. Ramey.

MR. RAMEY: Any questions of the Witness? Mr. Hinkle.

MR. HINKLE: I don't think I understand all of the formulas that he is talking about.

MR. KELLAHIN: I'm sure the Commission's staff does.

CROSS EXAMINATION

BY MR. HINKLE:

Q What difference would one-percent in the porosity make in your formula there?

A Well, you can see what we are talking about, that a one-percent difference in porosity, it would be a square root effect over in the distance terms, and so it would not make a very big difference. We have the

same safety factor with all these terms, that they have to be changed quite a bit in order to make much of a difference in the distance.

MR. HINKLE: No further questions.

MR. RAMEY: The Witness may be excused. Excuse me, did you have some questions?

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Walther, how important is formation uniformity in this type of test?

A Well, formation uniformity, of course will enter in, that this type of a test looks at it at areal averages. But generally in petroleum engineering we have to start out with the assumption of a homogeneous reservoir, and we have had pretty good success doing this.

Q So the formula assumes a homogeneous reservoir. Have you tested the formula for accuracy in the Morrow Formation?

A Specifically in the Morrow?

Q Yes.

A I believe we had an Oklahoma well that I -- right now I am not sure whether it was in the Morrow or not, I think it was -- which was one of our first back in

1968, one of our first examples, in which we did a reservoir limits test, and in this particular case it was a very tight formation -- we're talking about something like one or two millidarcies -- and so this required a very lengthy test in order to see out far enough, but we did, and this was -- I think it was in the order of a six-weeks draw down and I think about equal build up, and at that time we predicted a limited reservoir and came out with a reservoir size and shape to it, and then we did have production history on the same reservoir which bore this out pretty well.

Q This was a tight well that was tested, and in this case we're discussing here is that the opposite type of well is present?

A Yes. Actually this is a much nicer type of a well to work. As you can see from this equation that when we get to tighter wells two things happen that causes trouble: In this tighter well this turn becomes much smaller and so it means that we have to run the test for a much longer period of time, which gives us instrument problems and a bunch of other things. Secondly, we deal with much larger pressure drops, and for gas flow this can cause us more problems.

Q Could you give a verbal demonstration of what the difference would be in a hypothetical case? Let's say that we have a square mile with ten feet of uniform sand in it with whatever porosity you would like to have, and then in the second case a square mile of essentially the same type of sand except that 25-percent of it is tight; you haven't gotten into a tight section. What would the difference be there?

A Now we are really talking about degrees, that there is some other work in the literature that essentially covers just what you are doing. It is called "Composite Reservoir Model." This was by Bixell and Van Poelen and -- I think Bixell and Van Poelen have probably done the most complete study on it, but I believe there are some other papers that covers this too -- but let me draw what you are talking about. First of all you are talking about a reservoir like this, in which somewhere over here we have a little bit of boundary, and this area has much lower permeability than this area.

Q Now I wasn't thinking of something like that; I was thinking of something more like a bowl of water that you set some stump in, that the tight spots are not

just located in one particular area but they are located throughout the formation.

A You are talking about this kind of a thing?

Q Yes.

A Well, I think these potholes are something that -- or whatever you want to call them -- I think that we really wouldn't have much chance of picking up. I think this is something that -- a problem that you can run into in our development work.

Q Would this make the boundaries closer or farther apart?

A Again we are talking about the size; normally if the size isn't too big, we won't see them. If the size is big enough we will start seeing them and they will have about the same effect as a reduced KH in that area, one way you might think of your case. And of course, a lot of it, what we do in most our engineering work, we have to try to put side boards on what we are doing, I mean we have to look at possible cases, and one of the things would be if you have something hitting like that, then it might look like a fault if it were big enough, if you're talking about big enough. If you're talking about small enough, you really

won't see it.

Q I guess my question amounts to this: Do you consider this test to be eminently accurate in the Morrow Formation?

A Would you please tell me what you mean by "eminently"?

Q Would you place a great deal of faith upon the accuracy of these tests in the Morrow Formation?

A Yes. I think these tests were pretty straight forward if you look at the chart.

MR. STAMETS: No further questions of the Witness.

MR. RAMEY: Any other questions? Mr. Kellahin?

MR. KELLAHIN: I would like to ask a couple.

REDIRECT EXAMINATION

BY MR. KELLAHIN:

Q In line with Mr. Stamets request in that last question, you are putting into this computer model the data you get from the pressure model. Now, that is an average effect, is it not, of the reservoir?

A That's right.

Q Would that then take into account the problem that he was just talking about? You're talking about an

average reservoir?

A That's right, we're talking about an average reservoir.

Q So that would take into consideration that it's tight and open throughout the area, would it not?

A Yes. By "take into account," it's a little hard to be -- I don't know what you mean by "take into account," but it is an areal average KH after it gets out into the reservoir.

MR. KELLAHIN: That's all.

MR. RAMEY: The Witness may be excused.

MR. KELLAHIN: I call Mr. Lyon, please.

VICTOR T. LYON

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 Victor T. Lyon.

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

A I'm employed by Continental Oil Company as Conservation Coordinator in the Hobbs Division Office

located in Hobbs, New Mexico.

Q Are you a petroleum engineer, Mr. Lyon?

A Yes, I am.

Q Would you briefly outline your education and experience as a petroleum engineer?

A I took a BS Degree in General Engineering in the University of Oklahoma in 1945, and was employed by Continental Oil Company in December of 1947 and have been employed by Continental since that time in various engineering capacities, dealing primarily in the areas of oil and gas conservation.

Q Now, in connection with your duties as Conservation Coordinator, do you have anything to do with the operation of the Bell Lake Unit?

A Yes, I do.

Q You have testified before this Commission many times and made your qualifications a matter of record, have you not?

A Yes, I have.

MR. KELLAHIN: Are the Witness' qualifications acceptable?

MR. RAMEY: Yes, they are, Mr. Kellahin.

BY MR. KELLAHIN:

Q Mr. Lyon, would you please review the history of the Bell Lake Unit?

A The Bell Lake Unit became effective September 30th, 1953. The Unit contained a total of 37,177.86 acres, of which 27,041.34 acres, or 72.7 percent of the unit area was Federal lands , and 7423.59 acres, or about 20 percent, was State lands, and 2712.93 acres, or 7.3 percent, was fee lands. Exhibit No. 1 --

Q (Interrupting) That would be Exhibit No. 10 I believe, Mr. Lyon.

A Oh, I'm sorry.

Q We've had a few ahead of you.

A Okay. Exhibit No. 10 is a plat which shows the original unit area and identifies the three categories of land contained in it and to which I referred. Exhibit 10 also shows the wells which have been drilled in the unit area. Those wells represented by the green circle are wells which were drilled 100-percent by Continental Oil Company, who is the unit operator. These wells are, and just for convenience I will start at the north and go to the south. No. 8 is drilled in Unit M of Section 7, Township 22 South, Range 34 East; No. 9 is

located in Unit K of Section 18 of 23 South, 34 East; No. 2 is located in Unit N of Section 30 in that same township; No. 12 is in Unit J of Section 31, Township 23 South, 34 East; Wells 1 and 11 are in Unit N of the same section; No. 7 is located in Unit A, Section 1, Township 23, 33; No. 3 is located in Unit C of Section 6 of 24, 34; Nos 13 and 13-Y are located in Unit H of Section 6, the same section.

The red circles show wells which have been drilled by some combination of working-interest owners in the unit, and again I will go from north to south. No. 6 is located in Unit O of Section 6, 23, 33; No. 15 is located in Unit K of Section 8, same township; No. 10 is located in Unit F of Section 19, 23, 34; No. 1-A in Unit N in 31, 23, 34; No. 5 in Unit G of Section 1, 24, 33; No. 4 in Unit F of Section 6, 24, 34; No. 14 in Unit F of Section 5, 24, 34; No. 16 in Unit A of Section 7, 24, 34.

Q Now, the Unit Agreement does make a provision for the establishment of the participating area at some stage, does it not?

A Yes, it does.

Q Is that shown on your Exhibit No. 10?

A Yes. The Unit was contracted on September 30th, 1968, to two participating areas which are shown by the red outlines. These participating areas consist of the one to the north, that we call the North Area, is Section 36 of 22, 33 and Sections 31 and 32 in 22, 34; Sections 1 and 12 in 23, 33, and Sections 5, 6, 7, and 8 in 23, 33. The South Area, the same sections one township to the south, that is Section 36 of 23, 33; Sections 31 and 32 in 23, 34; Sections 1 and 12 in 24, 33, and Sections 5, 6, 7, and 8 in 24, 34.

Q Now, for the purposes of this hearing we are actually talking about the South Area, are we not?

A Yes, we are.

Q Was this contraction done as provided by the Unit Agreement and with the approval of the USGS and the Commissioner of Public Lands?

A Yes. The Unit Agreement provided for contraction after 10 years unless an extension of 5 additional years is secured by approval of the three agencies. This extension was requested and granted so that the contraction took place on the 15th anniversary of the formation of the unit.

Q The three agencies would also include the Oil

Conservation Commission?

A That is correct.

Q So the contraction then did take place in 1968?

A Yes, it did.

Q Now, would you please review the history of the South Area?

A Yes, sir. At the time of the formation of the initial participating area, which we refer to as the South Area, Wells 1 and 1-A, 2, 3, and 4 had been drilled.

Well No. 1, which was the discovery well blew out and burned and was subsequently plugged and abandoned. Well No. 1-A was drilled as a twin well and was successfully drilled to the Devonian Formation. It was the discovery well in the Devonian Formation. Well No. 2, which is immediately outside to the north of the participating area, was drilled to the Atoka Formation and was completed as a producing gas well in that formation. It provided drilling fuel for a number of the wells in the unit area. It subsequently went to water and was shut in; it is now being used as a salt-water disposal well. Well No. 3 was drilled to and completed to the Bone Spring Formation. This well was considered non-commercial for some 18 years but is now included in a Bone

Spring participating area. Well No. 4 was drilled to and completed to the Devonian Formation. This well also blew out but did not burn. On the basis of the test data from Wells Nos. 1-A and 4, application was filed and the participating area was established by approval on November 19th, 1957, effective as of April 26th, 1955. As shown on Exhibit 10 it consists of the nine sections which I previously described.

Q When you talk about the south participating area consisting of nine sections, that was a Devonian participating area, was it not?

A Yes, it was; only to the Devonian.

Q There are other participating areas in the South Area you will discuss later, is that correct?

A Yes. Well No. 5 was drilled to the Devonian Formation but the Devonian was found approximately 1000-feet low and water productive. Well No. 5 was plugged back and completed in the Morrow Formation for a calculated open flow of 7.6-million cubic feet per day, but was declared non-commercial at the prices for gas which we received at that time, which raised from 13 to 16 cents per mcf.

Q About what date was that?

A It began production in 1961.

Q And you were getting 15 to 16 cents per mcf then?

A Yes. The contract called for 16 cents but the FPC rolled us back to some 13 cents.

Q Who shared in the cost of drilling the participating area?

A The working-interest owners in the Devonian participating area shared in the cost of drilling and in the revenue from Well No. 5. A gas contract was negotiated with Great Western Gas Pipeline Company and the gas wells in the unit were connected and began producing in 1961, 7 years after initial discovery. This illustrates the changes that have taken place since that time and the gas market. Well No. 5 would easily have been commercial at today's gas prices. The contract price was 16 cents but was rolled back to 13 cents, as I said. In 1968 Well No. 1-A had declined in productivity of gas -- remember it was a Devonian well -- and water production had increased to the extent that it was no longer economical to produce. In contemplation of plugging the well back to a shallower formation, an operating agreement was entered into by the working-interest owners in

the South Area so that all production below a depth of 9000 feet was made of common interest to the working interest owners so that the costs and revenue could be shared on the same basis as that in the Devonian Formation. The depth of 9000 feet was selected so as to exclude the Bone Spring Formation, which was producing in Well No. 3, and was considered non-commercial at that time. Well No. 1-A was plugged back from the Devonian and recompleted in the Morrow. This well also was non-commercial. In 1973 Well No. 4 also became uneconomic in the Devonian and the well was plugged back and recompleted in the Atoka. Well No. 14 was drilled and completed in 1974 as a producer from the Morrow Formation. This well is shown located in Unit F of Section 5; we're talking about the south participating area. On February 1, 1975, we began drilling Well No. 16 located in Unit A of Section 7. This well is being completed in the Morrow at this time.

Q Now, referring to what has been marked as Exhibit No. 12, would you identify that Exhibit?

A Exhibit No. 12 is a plat showing the South Area of the present Bell Lake Unit. Exhibit 12 shows by the blue line the participating area which was established

for the Atoka Formation for Well No. 4. This area consists of the S/2 of Section 31, 23, 34, and all of Section 6 of 24, 34.

Q Now, this participating area applies only to the royalty interests as to the Atoka, is that correct?

A That is correct. Because of the Operating Agreement which was entered into by the working interest, the working interest is fixed as to the entire nine-section area. The effect of this is that the blue area determines the allocation to royalty interests from Well No. 4, from the production from that well, and Well No. 4 is shown circled in blue, as I said, in Unit F of Section 6. Outlined in red is the participating area which has been established for the Morrow Formation for Well No. 14. This participating area consists of the SE/4 of Section 31, the S/2 of Section 32, all of Section 5, and the E/2 of Section 6, and here again this participating area applies only to the royalty interest.

Q Now, does this then mean that the E/2 of Section 5, on which Texas West wishes to drill a well, is within the participating area for more production?

A Yes, it is, and those royalty owners who have ratified the unit agreement are participating in revenue

from that well.

Q From the continental well in the W/2 of the section, is this correct?

A Correct.

Q And the working interest owners are also sharing in productions from that well?

A Yes, they are.

Q For the entire section?

A Yes.

Q Now, how many wells have been drilled in the South Area by the working-interest owners?

A Continental has drilled six wells below 9000 feet -- by Continental I mean Continental and me -- well, some of them by Continental itself. These wells are No. 1 and 1-A in Unit N of 31; No. 4 in Unit F of Section 6; No. 5 in Unit G of Section 1; No. 14 in Unit F of Section 5, and No. 16 in Unit A of Section 7.

Q Now, the location of the No. 16 Well is not yet within the participating area for royalty owners, is it?

A No, it is not.

Q You will create one upon completion of the well, however?

A Yes, based on the data which is developed with

completion and producing history.

Q Now, how much has been invested in the drilling of these wells in the South Area?

A Our records are somewhat confusing because this development has been taking place for the past 21 years. As best I can determine from the records available, Continental has spent about 7-and-3/4 million dollars. Of this amount the working-interest owners have paid their proportionate share of about 6 million. I would like to review this situation: Continental drilled at its 100-percent expense Wells Nos. 1, 1-A, 2, and 4. When the participating area was formed, Continental requested the working-interest owners to reimburse them for their proportionate share of these expenses. We were unable to secure their agreement to pay for the costs of the drilling and plugging of Well No. 1, the cost of No. 2, or the cost of the blow-outs in Wells 1 and 4.

Q What is the payout status of the wells in the area?

A Exhibit No. 13 is a tabulation showing the payout status of the unit as of March 31, 1975.

MR. RAMEY: Excuse me, let me interrupt; it seems to me like you went from Exhibit 10 to 12 and are

now on Exhibit 13.

(Whereupon, a discussion was held off the record.)

BY MR. KELLAHIN:

Q Mr. Lyon, just for the record, would you go back and identify the exhibits you have discussed up to the present time?

A Exhibit 10 is the long plat showing the entire original Bell Lake Unit; Exhibit 11 would be the plat showing the South Area of the present Bell Lake Unit; Exhibit 12 --

MR. KELLAHIN: (Interrupting) We're on Exhibit 12.

MR. RAMEY: The exhibit that you are referring to at this time?

MR. KELLAHIN: Yes.

A (Continuing) Exhibit 12 is a tabulation of the payout status of the unit as of March 31st, 1975. The upper portion is the actual accounting data representing Continental's share.

(Whereupon, a discussion was held off the record.)

BY MR. KELLAHIN:

Q Go ahead now.

A This represents Continental Oil Company's status in here, our 100-percent interest. The lower portion is the same data which is converted to a gross interest, which is that represented by the working interest owners combined. Our figures indicate that the portions of the costs that were participated in by the working-interest owners was paid out as of March 31st, 1975, except for approximately $1000 including the estimated cost for Well No. 16. This, of course, does not include the cost of money over the twenty years that we have been waiting to get our money back. As to the individual wells, No. 1-A has paid out; No. 4 has shown a good profit, and the other wells are still showing a loss. No. 14, however, should have paid out in April of this year.

Q What is the status of the uncommitted interests in the South Area?

A There are three tracts in the South Area which have uncommitted interests. Tracts 68 and 72 have 25 percent and 21.875-percent, respectively, uncommitted interests and Tract 70-C has ten acres of undivided

interest which is not committed. At the time the unit became effective, Continental Oil Company had under lease all interest in Tracts 68 and 72 and attempted to get those interests committed to the unit. The mineral owners of 25-percent of these interests refused to ratify the unit agreement. 3.125-percent interest under Tract 72 has since ratified the agreement. Since the effective date, Continental Oil Company has been carrying 100-percent of the costs attributed to Tracts 68 and 72 at its own 100-percent expense. The ten acres in Tract 72 have been considered not participating --

Q (Interrupting) You mean Tract 70-C, do you not?

A 70-C, I'm sorry.

Q 72 is in the unit.

A 72 is in the unit. Tract 70-C is also in the unit, but ten acres has been deleted; it is producing on a net basis, and therefore that tract is short ten acres and the unit, the participating area, is short by ten acres because of that fact. These interests have been reallocated on that basis in the participation of the tract.

Q Now, when you were talking about Tracts 68 and 72, they're both in the E/2 of Section 5, which is really

the subject of this hearing?

A No, Tract 72 is in the E/2 of Section 5; Tract 68 is in Section 7 and consists of Lot 3, and the SE/4SE/4.

Q So, of Tract 72, the remaining -- another 3.125-percent was committed, so we now have the 25-percent less that interest?

A At the time of the formation of the unit, 8/32nds, 1/4 of Tract 72 was not committed. Since that time 1/32nd interest has ratified the agreement so that there remains still uncommitted 7/32nds.

Q And that is the interest held by Texas West at this time?

A That is my understanding.

Q Now, insofar as participation in the unit production is concerned, what has been done with that during the years, that 7/32nds?

A During that period of time, as I said, Continental Oil Company has treated this on a gross basis. We have been expending all of the interest out of our pocket for the cost attributed to the 7/32nds which was not committed. At the same time we have been collecting the revenue attributable to that interest. The royalty interest, that is 1/8th of the 21.875, has been in effect

escrowed for the royalty interest. Continental Oil Company has used the 7/8ths to help them repay the cost that we have invested in developing the Bell Lake Unit.

Q So, insofar as royalty interests are concerned, it has been treated as though participating, but the question is, who owns it?

A Yes. We have no basis on which to pay out these moneys because we do not have the lease on it, they have not signed the unit agreement, and so, it is just being escrowed.

Q Now, what will be the effect of granting the Application of Texas West in regard to the owners of the South Area?

A The working-interest owners have pooled their interests in nine sections of land. The proposed proration unit is a half-section or approximately 1/18th of the total area, which is about 5-1/5-percent. The drilling of a well solely for the interests of the uncommitted owners in this half-section would permit these people to participate in 21.875-percent of its production rather than th[illegible]1/2-percent, or four times the participation of the unit owners. This would permit them to participate to an exaggerated degree in the production from the reservoir

which has been discovered by the efforts and the risk of the owners in the unit. I consider this to be a serious violation of the correlative rights of those parties who have entered into the unitization agreement. As to the royalty owners, the participating area consists of nine quarter sections which include the E/2 of Section 5, which consists of two quarter sections or about 22-percent of the participating area. The participating area which has been approved permits the owners of the E/2 of Section 5 to participate on an equitable basis from production from the Morrow Formation within this area.

Q As a matter of fact, all of the committed royalty interests have participated?

A Yes.

Q Now, what effect would the granting of the Application have as to the uncommitted royalty interest?

A Well, it would unjustly enrich these interests and deny royalties to the royalty owners outside of the E/2 of Section 5 . It would also deny royalty to those royalty interests in the E/2 of 5 who have committed their interest to the unit. I might point out that five of the nine quarter sections in the participating area are state land and two are federal lands. In order to

protect our correlative rights, we would have to drill a well on each half-section of the reservoir.

Q Now, referring to what I believe will be Exhibit No. 13, would you identify that Exhibit, and does it illustrate the effect on correlative rights of the approval of this Application?

A Yes, it does. Exhibit No. 13 is a bar graph illustrating the distribution of production from the reservoir under several situations. Each bar has two parts: The left side representing the royalty interests, and the right side representing working interests. The bar on the left side of the Exhibit marked "one well" shows the percentage of production from the reservoir which is allocated to the uncommitted interests under Tract 72, which is the E/2 of Section 5, by the participating area which has been approved. This is what the participating area would give them if they were committed. As shown, the royalty interest would receive 4.85 percent of the reservoir production from our Bell Lake No. 14, and the working interest would receive 1.22 percent. This represents 21.875-percent of the tract allocation to Tract 72.

The second bar -- I might point out also that

this is on a reservoir well density of 1440 acres per well -- the second bar which is designated "two wells" shows the percentage of the reservoir which would accrue to the interests -- these uncommitted interests represented by Texas West -- if this Application is granted and a well is drilled at the proposed location and assuming that production from the two wells, our 14 and their well, would be equal. In this situation, both the royalty and working interests would be receiving 10.92-percent of the reservoir production. This would be a well density of 720 acres per well.

The third bar shows the percentage which would accrue to the same interest if Continental should drill a second Morrow well in the participating area. These interests would then be receiving 7.29-percent -- this is Texas West's interest -- of the reservoir production.

The next bar marked "four wells" assumes that the unit would drill two additional wells. At that point the reservoir spacing would be on a density of 360 acres per well, and it also shows that it would take four wells to bring the thing into balance, and then it would be a little bit over balance, but we would run out of acreage too and the result would be we would probably

have five uneconomical wells.

Q Is it likely that the working-interest owners would do this?

A No, it is not; it just would not be economically feasible.

Q Now, what do you expect would be the effect on the participating area of the completion Well No. 16?

A Indications at this time are that Well No. 16 will be a commercial well. We also expect pressure data to show that it is in the same reservoir with Well No. 14. Under the unit agreement we must expand the Morrow participating area to include the area which is reasonably proven to be productive. At this time we believe that the area to be added would consist of the SW/4 of Section 6, all of Section 7, and the W/2 of Section 8. This would result in a participating area for the Morrow Formation containing approximately 2560 acres.

Q This expansion would be subject to the approval of the United States Geological Survey, the Commissioner of Public Lands, and this Commission, would it not?

A That is correct.

Q Have you prepared an exhibit similar to Exhibit No. 13 showing the effect of the approval of this

Application on an expanded participating area?

A Yes. Assuming that the participating area is expanded as I just testified, Exhibit 14 shows approximately the same information that was shown on Exhibit 13. The left-hand bar shows the percentage of the reservoir which would be attributable to the uncommitted interests in the E/2 of 5 if they were committed to the unit. This would be approximately 2.72-percent of the production from both Wells 14 and 16 as to the royalty, and the same 1.22-percent would apply to the working interest since, as I said, the ownership has been spread over the entire nine-section area.

Q There would be no change in it then?

A That's true, but they would participate in -- well, not only these two wells but also in production from 4 and 1 and the other wells which are producing below 9000 feet in that South Area. The next bar, moving from left to right, represents the percent of the reservoir which would be received by the uncommitted interests in the E/2 of 5 if they drill the proposed well. In this event, of course, there would be three wells in the reservoir and they would receive, the royalty and working-interest owners both, would receive 7.28-percent of the

production from the reservoir.

The third bar shows the percent of production which would be received by these interests if the unit drilled a third well, and as I have described in the previous exhibit, this additional bar, moving from left to right, shows the effect of correlative rights as additional wells are drilled to try to match the density of drilling, which is brought about by the drilling of Texas West's well. But, even with the drilling of four additional wells, the unit would be receiving less than its proportionate share of the production from the reservoir.

Q How many wells would they have to drill in order to maximize the effect of the additional well?

A Well, the last bar shows seven wells, and the reservoir density at that point would be 355 acres per well, and we need to get the density down to 320 acres per well before equities are balanced again.

Q In your opinion, would those wells be commercial wells?

A I don't think they would be commercial.

Q Would that constitute waste?

A In my opinion it would.

Q Now, would you summarize your conclusions based on the information shown on Exhibits 13 and 14?

A Exhibits 13 and 14 are intended to illustrate the impact on correlative rights of the parties in the Bell Lake Unit by the drilling of Texas West's proposed well. In my opinion, it is not necessary to drill any more wells, as shown on Exhibit 13. It is my opinion that it is not necessary to drill any of the additional wells shown on Exhibit 14. The information we have indicates that the Bell Lake Unit Well No. 14 is capable of draining the entire reservoir represented by the participating area.

Q Well, now, if this is true, why did the working-interest owners drill Well No. 16.

A You will note that Bell Lake Unit No. 16 is located outside the participating area. At the time that it was projected for drilling we were hopeful it would encounter the same reservoir that No. 14 has found and perhaps find additional reservoir for development, or I should think that should be plural, additional reservoirs. One of the reasons that No. 16 was drilled was to enlarge the participating area so that more interests in the unit area could participate in the production from the Morrow.

The only way that we could do this is to show that the area is productive by drilling it.

Q Now, what is your opinion of the effect of granting this Application on the unit?

A As illustrated in Exhibits 13 and 14, there will be two immediate results of the granting of this Application and the drilling of the proposed well: The first is that there will be a considerable impairment of the correlative rights of those parties who have committed their interests to the Bell Lake Unit; the second effect would be that as a result of the granting of the Application and the impairment of the correlative rights, that in an effort to balance correlative rights the unit would be forced to drill additional wells which are unnecessary to drain the reservoir. In effect, the granting of this Application will be completely contrary to the objectives of unitization and will return us to the "law of capture" which this Commission, through its rules and regulations and through unitization, has been attempting to replace. The Commission must weigh the correlative rights of those who have committed to the unit as opposed to those who have refused to commit to the unit. It is my opinion that it is more reasonable to use the

Commission's power to persuade these people to join the unit, which should represent as close to equity as we can get as it is to permit the drilling of the well and thereby causing the disruption of correlative rights and the drilling of unnecessary wells. On the one hand, by denying this Application, equities can be preserved, whereas, on the other hand, equities can be destroyed under the guise of protecting the equities of those who already have equity available to them.

Q Now, when you say, "equity available to them," do you mean they have the right to join the unit?

A That's true.

Q And participate in production?

A Yes.

Q You mentioned that the No. 16 Well was drilled partially to search for other gas reservoirs as well as to prove additional acreage. Does not the well proposed by Texas West accomplish this same purpose?

A Well, to a limited degree it does. The problem is that by crowding the existing wells for the sake of safety you limit the exploratory value of additional wells. You also limit the additional reservoir drainage value that would accrue from spacing the wells further

apart. If Texas West were proposing to drill their well in the SE of the NE, or even the SW of the SE of Section 5, it might have some exploratory value, but crowding No. 14 as they propose to do will probably turn up no reservoirs other than those found in Well No. 14.

Q Now, you are familiar with Order No. R-5039, which was entered in this case after the prior hearing, are you not?

A Yes.

Q In regard to the risk factor which was authorized in that order, what comments do you have?

A The statute governing compulsory pooling provides for a maximum of 200-percent risk penalty. In my opinion this maximum penalty should be reserved for cases where there is considerable risk, as in the instance of a wild-cat well or where there is some extenuating circumstance indicating an unfair advantage represented by the nonconsenting party. As I have previously testified, the Bell Lake Unit working-interest owners have taken great risks in exploring the unit area. We have expended large sums of money in doing so. We have received greatly reduced prices for the gas which we produced in past years as compared to the prices available

to the Applicant in this case today.

Q Exhibit No. 15. Would you refer to that, please, and discuss it?

(Whereupon, a discussion was held off the record.)

A Exhibit No. 15 is a simple location plat showing the relative distances of one well from another, and Exhibit 16 shows essentially the same information by a bar graph. As shown on both exhibits, Continental Oil Company, on behalf of the Bell Lake Unit owners, stepped out a distance of over 5000 feet in drilling No. 14. This step out was from Well No. 1, which is an extremely weak well in the Morrow. This very well might be a situation where a maximum or near maximum penalty might be assessed. Well No. 16 was drilled a distance of some 4800 feet from Well No. 14 and might call for a large risk factor. In comparison, Texas West is proposing to drill at a location less than 1700 feet from Well No. 14, which is as close as you can get -- and I might add, probably the best gas well in New Mexico. The assignment of a 200-percent risk factor in this case, in my opinion, is absolutely absurd. If a 200-percent penalty is assigned in a situation like this, what would be an equivalent

penalty to be assigned where there really is some risk? Personally, I feel that a 10-percent risk factor is excessive in this case.

Q Mr. Lyon, you heard the testimony earlier to the effect that Continental had stepped out on Morrow wells less than 1400 feet, did you not, Texas West?

A I don't remember the exact testimony.

Q Well, approximately 1400 feet?

A I heard some discussion to that effect.

Q Is that true or is it not?

A I don't know of any place that we had drilled anywhere near this. The closest well that I can see that we have drilled is at least 4500 feet.

Q That is to the nearest Morrow production?

A Yes, sir.

Q Now, in regard to the supervision charges that were authorized by Order No. R-5039, what comments do you have?

A Continental as operator of the Bell Lake Unit is authorized to charge $142.72 supervision for producing wells, each well, and $854.64 supervision for drilling wells. Considering the laboratory, research, and consulting services which Continental has to offer in its

organization, at no charge to our joint-interest owners, and we've had a demonstration of the expertise and equipment and knowledge available at this hearing, I just can't see that Texas West is entitled to nearly twice as much for supervision as Continental is.

Q Now, what do you recommend to the Commission in this case to prevent waste and protect correlative rights?

A This Commission has long been an advocate of unitization. This is consistant with its responsibility to prevent waste and to protect correlative rights since most people knowledgeable in conservation matters readily advocate unitization as the most effective means of preventing waste and protecting correlative rights. The granting of this Application will discourage unitization because the people who have held their interests out of the unit will be permitted to profit unjustly from the efforts and risks of the people who joined the unit and will be receiving an unfair share of the production from the reservoir at the expense of those parties who have joined. If the Applicants are permitted to succeed in their design, other people who have interests in proposed units will be encouraged to hold their

interests out so as to profit in the same manner. It is therefore my recommendation that the Commission deny this Application. It should be perfectly obvious that the Applicants have a remedy readily available to them; to commit their interests to the unit. Should the Commission feel that the statutes require them to force-pool the unit -- and I would like to call the Commission's attention to the language of that statute -- it is my recommendation that no risk penalty be assessed to working-interest owners in the Bell Lake Unit. We have assumed a much greater risk in developing this unit over the past twenty years and we have been operating in the red for that period of time because of low gas prices, primarily. We have proven their acreage to be productive so there is little if any risk involved in drilling the proposed well.

I would further recommend that, in accordance with Section 13 of the unit agreement, that the well be turned over to Continental Oil Company as operator since the unit has 78-percent, by far the majority of the interest in the tract.

Q How can the uncommitted interests in the South Area participate in the unit production on a fair and

equitable basis?

A Well, considering the large expenditures which the working-interest owners have made over the years, it seems equitable that the lessee in this interest should be assessed some penalty for refusing to participate in costs up to this time. Section 7 of the Unit Operating Agreement provides for charging interest at the rate of 6-percent per annum for working interests who have failed to pay their bills. Section 11 provides for a 50-percent nonconsent penalty for any working-interest owner who fails to approve the expenditure for a well. Assuming that my figures are correct, the costs involved in the drilling and operating of the wells up to and including No. 16, totaled approximately $6,000,000. Fifty-percent of this amount would be $3,000,000. The wells on this unit are generating revenue at the rate of approximately a quarter of a million dollars per month, which will increase, we estimate, to 350 to 450 thousand dollars when No. 16 goes on stream. Therefore, by the end of January, 1976, this account will be in the black and therefore applicants in this case can participate in production from the unit as of approximately January with no investment whatever. It would probably be more

advantageous to them to commit their interest immediately and contract for the sale of gas, their share of the gas, at the much more favorable prices available to them. Their payout would thus be accelerated considerably, and I can't think of a more equitable manner for these people to secure an interest in producing properties of the caliber that we have. Assuming the Applicant could start drilling on September 1st, the well would cost about $1,000,000 and could not be producing before January of '76. By paying $37,000 now -- and these are approximate figures subject to confirmation by our Accounting Department -- he could be participating in the revenue as of September 1st, with no risk.

Q Were Exhibits 10 through 16 prepared by you or under your supervision?

A Yes, they were.

MR. KELLAHIN: At this time I would like to offer into evidence Exhibits 10 through 16.

MR. RAMEY: Without objection they will be made a part of the record.

(Whereupon, Continental's Exhibits Nos. 10 through 16 were admitted into evidence.)

MR. RAMEY: Are there any questions of this Witness?

MR. HINKLE: Yes, I have some questions.

(Whereupon, a discussion was held off the record, after which the noon recess was held.)

MR. RAMEY: The hearing will come to order. Were you through with your direct, Mr. Kellahin?

MR. KELLAHIN: Yes, I was.

MR. RAMEY: Are there any questions of this Witness?

MR. HINKLE: Yes, I have some questions of Mr. Lyon.

CROSS EXAMINATION

BY MR. HINKLE:

Q I believe, Mr. Lyon, that you have testified that the working-interest owners created a nine-section working-interest group within the unit, and they are the ones who have defrayed and participated in the working-interest cost to most of the wells, is that right?

A That is true.

Q Now, that includes the Devonian, the Atoka, the Wolfcamp, and the Morrow, does it not?

A There is no Wolfcamp.

Q No Wolfcamp? I understood you to say there was one well completed in the Wolfcamp.

A No, there is no Wolfcamp testing.

Q What was it that you testified that the well was plugged back and completed in the Wolfcamp somewhere?

A No.

Q You didn't; I misunderstood you then. Anyway, it includes all those formations, producing from those formations?

A The Devonian, the Morrow, and the Atoka.

Q Now, the participating area for the Morrow is not coextensive with that nine-section plot, is it?

A No, it is not.

A And all of the royalty owners under that participating area participate in their proportionate part of the production allocated to the different leases in the participating area, is that right?

A When the Devonian was producing, all of the royalty owners committed to the unit participated in the production from the Devonian. That production has ceased in the south area, and the royalty owners would then in each of the presently-active participating areas

participate in production in accordance with the unit agreement.

Q In other words, the production from the participating areas allocated to the respective leases on acreage basis, and that royalty is figured on that part that is allocated in their respective leases, is that right?

A That is correct.

Q Okay. Now, if a well is drilled in the E/2 of Section 5, these working-interest owners would be entitled to 25/32nds of production would they not?

A That is correct.

Q And the other ones who have not participated in the unit would be entitled to the 7/32nds, is that right?

A Say that again?

Q I say the ones who have not committed their interest to the unit, which is 7/32nds interest, would be entitled to the other 7/32nds?

A 7/32nds of the production from the well drilled on that proration unit, yes.

Q Now, I believe you testified that it wouldn't be necessary to drill any other wells, that the present

well in the W/2 of 4 would drain the whole area?

A The W/2 of 5.

Q W/2 of 5, yes.

A Is capable of draining the entire reservoir, yes, sir.

Q All right. Then you admit that that well is draining the E/2 of Section 5.

A You bet it is.

Q So, how do you get around the fact that there is 7/32nds there not committed to the unit and you are violating their correlative rights?

A Well, they have the opportunity of joining the unit, have had for over 20 years.

Q I know, but they're not compelled to do it.

A That's true; we can't compel them to commit their interest. On the other hand, if you drill a well over there, you're going to have an awful lot of trouble equalizing the equities; you're going to completely destroy the equities that the unit agreement provides.

Q But how can your correlative rights be violated when you are going to receive 25/32nds production from that well?

A Because of the proportion that that would give

the people who own in the E/2 of 5, unless we drill additional wells in there, which again is unnecessary.

Q Well, I don't catch your reasoning at all as to how --

A (Interrupting) Well, if you refer to Exhibits 13 and 14, I think that demonstrates it pretty vividly.

Q Now, you say there is no risk involved; why isn't Continental willing to pay their 25/32nds of this well; there's no risk involved?

A Well, the unit agreement has fixed equities in there in the participating area. You are trying to restrict treatment of this as a separate tract so that you're asking the unit to drill a well which is unnecessary, which will drain the unit production unless we drill additional wells, which again isn't necessary.

Q Well, I believe it has already been testified by Mr. McWilliams that you have not adopted special pool rules and 320 acres is the spacing. You have the E/2 of 5, which is a standard proration and spacing unit, is it not?

A Which would apply if there were not a unity here. This is one of the reasons for having a unity; that you don't have to drill a well on each individual

tract, and you can locate your wells so as best to drain the reservoir and protect correlative rights; that's the purpose of the unit.

Q But the unit, in my opinion, has nothing to do with spacing.

A Well, we have a unit here and it certainly is affected by spacing.

Q Well, as I say, I'm not going to argue with you because that is a question of law, but in my opinion it has no bearing whatsoever on it.

Now, if Texas West would decide to commit their interest to the unit, your proposal is that there would have to be an adjustment of all tangible and intangible cost as to all of these wells that have been drilled and which are participated in by this working-interest owners in nine sections, working-interest unit, is that correct?

A That is not right. Continental Oil Company has born all of those costs and they need to settle with nobody except Continental Oil. No other working-interest ownership will be affected by their coming into the unit.

Q But they would have to settle with Continental though on the basis of all of these wells that have been

drilled?

A I think that is appropriate.

Q And whether they are producing from the Morrow or not?

A Right.

MR. HINKLE: That is all I have.

MR. RAMEY: Any other questions?

MR. HINKLE: I would like to put Mr. Dunnavant back on the stand.

MR. CARR: I have several questions I would like to ask.

MR. HINKLE: Okay.

CROSS EXAMINATION

BY MR. CARR:

Q Mr. Lyon, I appreciate your comments on the Commission being an advocate of unitization.

A You and I both know it.

Q But, I think I have only one question here, and that is, are you familiar with any statutory provision which empowers the Commission in any way to use its influence to bring someone into the unit which is being used for primary production?

A No, I do not.

MR. CARR: I think that's all I have.

MR. RAMEY: Any other questions? The Witness may be excused.

(Whereupon, Mr. Dunnavant returns to the stand.)

FURTHER EXAMINATION

BY MR. HINKLE:

Q Mr. Dunnavant, refer to Continental's Exhibit No. 7 and also your Exhibit No. 1. You heard the testimony of Mr. McWilliams in regard to the direction that cross section takes, and the reason why he used the well in Section 33. Do you have any comment on that?

A Yes, sir, I do. Mr. Hinkle, could I refer, instead of Exhibit 1, could I refer to the cross section, which is Exhibit 3?

Q Yes, go ahead.

A And also, while I am at it we will need the structure map, which is presented as Exhibit 2. It might be best to refer to Exhibit 2 first rather than No. 3. Exhibit 3 is our structural contour map based on top of the Morrow Formation. The exhibit here, which is classified as West-East Stratographic Section presented by

Continental, grows from the No. 4 Well in Section 6 over to their No. 14 Well in Section 5, the W/2 of Section 5, and then up to the Shell well in Section 33, the SW/4. I think, in my opinion, it would be the reason they didn't go across in a true west-east direction on a cross section is because that these wells, the zones producing over in the Shell wells in Section 4, are not correlative; they're not there. We have a situation here where you have got a pinch-out from their Continental No. 4 to the wells that are producing in the NE/4 of Section 4, Shell's wells. Now, regarding the well up in the SW/4 of 33, which is the well drilled, I assume jointly by Shell and Continental, this zone is present that is correlative with the zone in No. 14, and is also correlative with the well drilled in the NE/4 of Section 7 down to the south, and there are remnants of that zone in the NW/4 of 6. Now, the difference being, of course, is that they haven't tested No. 16 out; the zone is present; it doesn't look as good as that same correlative zone in the W/2 of 5. In the Shell well in Section 33 it is calculated to be 100-percent water saturation. They felt as such that they didn't even run pipe down to that point to test it; it's that pipe above

it, and it is my understanding that they did test another zone in the Morrow above that that was also non-commercial. Here we have a situation -- going to the cross section once again to further prove a point --

Q (Interrupting) When you talk about the "cross section" you're referring to Exhibit 3?

A Exhibit 3. In the Continental 14 Well, which is the second well from the left-hand side, the zone that they are completed in is approximately 480 feet below the top of the Morrow Formation. The Shell well, which is the second log on the cross section from the right, the base of the perfs in the producing zones there is approximately 300 feet below the top of the Morrow. Now, you can go down 480 feet into the Morrow in the Shell well, and 500 feet, and you won't find any correlative zones at all as far as this Continental Well No. 14 is concerned. Now, you have a remnant of a sand down here approximately 650 feet below the top of the Morrow, but Gentlemen, if you have cross sectioned and correlated these logs as many times as we have, you will find that this is not correlative in any way with this zone over here. So, what they have done is taken a situation here, a known pinch-out area due east of

their well. Now where it exists, I only hope it is not in the E/2 of Section 5, but it is somewhere between their No. 14 Well and the Shell well in Section 4. This, of course, gets us back to the risk factor involved in drilling a Morrow well. To me the Morrow is the most unpredictable animal that we have ever worked with, and especially me as an independent, or even when I worked with Phillips and several of the other companies, Rodman and Miller Oil Corporation, we drilled in the order of 60 to 70 Morrow wells. All of them were not producers. But, along this line, getting over to the east side -- back again to our Exhibit No. 2, the structure map -- on the east side of the Antelope Ridge Area Texas West spent approximately two-and-a-half-million dollars on the well located in the NW/4 of Section 2. This was a discovery zone in the Atoka; this was a blow-out; we had to set pipe. Based on the results of that well we stepped down into the SW/4 of Section 2, hoping to get this same zone in the Atoka, with a possibility of Morrow; we couldn't take the first well down. We found a prolific Atoka producing zone in the No. 2 Well, but it was below the producing zone and not correlative with the zone that was found in No. 1. As a matter of

fact, the zone in No. 1 depleted itself before we got the No. 2 Well down. We drilled on down and completed the No. 2 Well as a dual in the Morrow and the Atoka. The Atoka was a very prolific well in our limited way of thinking; it was making 150 to 180 barrels of condensate and one-and-a-half to two-million cubic feet of gas per day; the Morrow in the range of one-and-a-half to two million. It has dropped since then but it stabilized probably about a million or 1.2 million per day. After the No. 1 Well depleted itself and after we had drilled the well up in the SW/4 of Section 35 and completed it as a producer from the same Morrow zone as the well in the SW/4 of 2, we went back into the No. 1 Well. Now, this well, mind you, is approximately the same distance from our producer here, our very good producer, our No. 2 Well, as is our proposed location from the Continental No. 14 Well. We drilled down and found the same zone that we found in the No. 2, in the Morrow, same technique, same procedures. This zone started out initially with 450,000 cubic feet of gas per day; in two weeks time it was down to 90,000; currently it is less than 60,000 cubic feet of gas per day. I have just submitted an AFE to our participants to plug and abandon the well. So,

here we are with a situation of an inside location, the zones are correlative, and yet we drill a dry hole. This again is what I am talking about is the risk factor involved. Shell Oil Company and Continental, I don't think they assumed -- or they dreamed -- they would get a dry hole up here, which is a little more distant than what we're talking about. As a matter of fact, regarding that, we have submitted to Continental and to Shell on several occasions our request for farm outs to develop this acreage on 320 acres, all of the undeveloped acreage in the Antelope Ridge Unit; we have submitted this several times. There, in so doing, we are going to be located less than 2500 feet to 3500 feet from well to well in some instances. But, this proves just the point that the risk factor is there and that these zones in the Morrow do correlate over a broad area but they lens in and out. Going from this well, the Continental No. 14, over to the Shell well, there is a complete pinch-out in here somewhere. We hope that it is past the E/2 of Section 5, but Gentlemen, it could be very close to the Continental No. 14.

Q Do you have anything further on that?

A No.

Q I believe you heard the testimony of Mr. Walther this morning?

A Yes.

Q Have you had any experience with the formula which he has projected and testified to of determining the radius of production of the well?

A Well, the formula as such, no; the procedure, techniques, and same engineering practices, I have had. As a matter of fact we are in the process right now; we have employed four laboratories to perform a study, over my objections, in my Pecos Unit No. 1 Well, which is an Atoka discovery at about 15,000-foot depth over three miles northwest of Pecos. The only reason we are doing this is because a utility company, who is involved with this thing, wants another tool to look at. I told these people when they started that based on the experience we had that these were very indeterminate procedures in trying to determine reservoir limits because of the variable parameters that you have to put into this thing to come up with an answer.

Q What has been your experience?

A My experience has been variable, but nearly all of it very very bad. As a matter of fact, Rodman and

Miller Oil Corporation -- this has been several years ago when I worked for Rodman and Miller as Production Manager -- completed a well out northeast of Carlsbad. This was a very expensive well; we had a very thick sand section -- one of the prettiest Morrow sand sections that I have seen in that part of the country -- Mr. Miller and Mr. Rodman instructed us to have these reservoir limit studies performed, which we did. They indicated a reservoir of sizeable extent to the point that, based on the information they gave us, we ran in 14 miles of 4-inch line. Unfortunately that well paid out about two miles of that line before it depleted itself. So, my experience has been bad. Core Laboratories, that we have now employed to evaluate our Pecos Unit No. 1, they're trying to sell a product. They tell us that this is a reasonable study within the limits, but the parameters that you put into this thing determine the final outcome, and it is like a data processing machine; you only get out of it what you put into it. Now, we realize that Continental is probably doing -- is very forthwith and forthright with everything they've done here, but we have just had very bad experiences with them and we have never had anything ever really prove anything except bad luck,

as far as we're concerned, from an economic standpoint.

Q Do you have anything further you would like to submit to the Commission?

A Well, there is one or two things that kind of concern me, Mr. Hinkle. One is, I guess there is a new meaning or a new phrase regarding -- or new meaning I should say -- regarding conservation and waste. To me drilling wells on standard proration units is not a waste. It is a waste economically if it is a dry hole, but you are proving up potentially new reservoirs. I don't care if it is just 330 feet from a known producing well. I think where you do have a loss, a destructive effect on a thing, is where you don't drill on proper spacing, where you take a well and assume that a well -- especially in this animal that we're working with called the Morrow -- assume that it will drill 640 acres. Now, we have attempted on several occasions to run interference tests between wells in the Morrow Formation -- this is up in the Panhandle of Texas and in Western Oklahoma -- and these wells were located on 320-acre spacing and we have run these tests over a six-month period of time with no conclusive evidence at the end of this period. Now, the animal that we're working with here is variable

in that you get, even in a lenticular situation, you get a lithology change; you get a reduction in porosity; you get a reduction in permeability. This is what happened to us over here on this well in the NW/4 of 2. Now, as far as gut cinches go, my backers are on sedataion right now on that well, believe me, because they thought it was a gut cinch too, you know, but anyone that believes the Morrow can drain 620 acres without extensive, extensive study, actual field study, is presenting a great deal, or a lot, in my opinion.

Q Is that all?

A Yes, sir.

MR. HINKLE: That is all we have.

MR. RAMEY: Any questions of this Witness? Mr. Kellahin?

FURTHER EXAMINATION

BY MR. KELLAHIN:

Q Is it your testimony now that the Continental Well is not draining this acreage?

A No, no. No, sir. How did you assume I said that.

Q You said we were presuming a lot if we thought it could drain 640 acres.

A There's not 640 acres between your well and mine.

Q That's true. If you take the radius of drainage there is approximately that much, is there not?

A Well, most assuredly, we feel like until the well is drilled, perforated, or drill-stem tested, we're being drained. The only way, in my opinion, that you're going to know about this particular well here is by drilling it, and that is the same thing that we had over here.

Q Now, how far is your proposed location from the Shell wells in Section 4?

A Over to the east of us?

Q Yes, sir.

A I don't have the exact distances; off-hand I would say here about one and one-eighth miles.

Q Could you reduce that to feet as compared to your distance from the Continental well?

A Yes, sir. You are located 1683 feet; this well here we would say -- would you settle for 6000?

Q Which one was that?

A Across from here to here; that's an approximation.

Q I'll settle for it, yes, sir.

A About 4317 feet.

Q So it is considerably closer to the Continental well, than the Shell wells?

A Certainly.

Q All things being equal, you would anticipate you would be more likely to find the same conditions as the Continental well in your proposed location, than the Shell well conditions, would you not?

A If I didn't think so I don't believe I would want to drill it.

Q You wouldn't drill a well?

A No, sir, I sure wouldn't.

Q Now, you were discussing the testimony of Mr. Walther. Have you made such a study of boundaries in this area?

A No, sir.

Q The only one you are talking about is the one in Eddy County?

A Eddy County, the ones that we made up in Western Oklahoma.

Q Well, now, the situation in Western Oklahoma is somewhat different than the Morrow Formation in New

Mexico, is it not?

A The Morrow is different from one section to another, I agree.

Q So you can't really make that distinction, can you?

A No, sir,

Q Now, how was the pressure study in Eddy County? Was that a pressure draw-down?

A This was a complete -- now mind you, Mr. Kellahin, this has been several years ago -- this was an engineering firm from Dallas who did this for Rodman and Miller Oil Corporation. This was to determine the reservoir limits, or the maximum extent that they could from the wellbore, to determine if it was economically feasible to run 14 miles of 4-inch line.

Q Had there been any production that would give you access to a material-balance curve?

A At that time?

Q Yes, sir.

A Yes, sir.

Q Did it compare to the reservoir --

A (Interrupting) We had some conflicts, Mr. Kellahin. We had -- as I recall, they were not in agreement.

Q They were not in agreement?

A They were not in agreement.

Q Isn't that unusual if the study is properly made and the material-balance curve properly --

A (Interrupting) Well, material balance, of course -- now I'm not an expert on this; I hire engineers to do this for me, you understand.

Q Yes.

A Material balance is to me if you have all of the information, reliable information, it is a very good tool to use, yes, sir.

Q And you heard the testimony this morning that we do have a material balance?

A You have a material, yes, sir.

Q Now, did you have the PZ information at all on these wells, P over Z?

A Ph, P over Z?

Q Yes.

A On which wells?

Q On the Eddy County test?

A Oh, yes. We had Ph, P over Z approximated; we had the whole engineering performance studies made.

Q You testified that just as quick as you started

production the well went right down, didn't you?

A No, I said within -- I don't recall from the testimony -- within 6 months. I said that it didn't pay-out 2 miles of the 14 miles.

Q But it did extend for two months according to your calculations?

A Over a six or eight-month period.

Q Now, in your testimony as to conservation and waste, would you agree that an unnecessary well would constitute waste?

A Well, I don't know what you mean by an unnecessary well.

Q Well, let me define my term. If you're going to drill a well in an area that can adequately be drained by an offsetting well, would that not constitute waste?

A It depends on the circumstances. If you have correlative rights that you are protecting --

Q (Interrupting) I'm talking about waste for the moment; let's talk about waste.

A Okay. I don't think that you can ever -- like I said earlier -- you can waste money, but you cannot waste recovery.

Q You could waste money drilling an unnecessary well?

A You could waste money; I agree with that.

Q Just as well as drilling a dry hole?

A Sure.

Q Now, has there been any interference test run in this area?

A None to my knowledge.

Q On the well you testified to over here in Section 2, your Atoka discovery, I believe, labeled as?

A Yes.

Q Did you have any reservoir information at the time you drilled that well?

A Did we have any reservoir information?

Q Yes, sir, when you drilled the well?

A We always have reservoir information when we drill a well.

Q What was the source of that reservoir information?

A From the No. 1 Well.

Q From the No. 1 Well?

A And all of the surrounding wells.

Q Are these wells or any of them comparable to productive activity of the Continental well?

A No, sir.

Q In other words you classify the risk in drilling an offset to your well the same as drilling an offset to the Continental well?

A Yes, sir, every bit of it.

Q Well, it's a much poorer well, you just admitted,

A No, sir. I'm saying the potential is there. I wouldn't guarantee a cinch well in the middle of the ACE (sic) pool.

Q But you say the risk in drilling an offset to your well in Section 2 there is equal to the risk of drilling an offset to the Continental well?

A I'm saying that before we started I would have thought the risk in the NW/4 of 2, our No. 1 Well, was less than what we could expect over here going from the Continental No. 14 Well to our proposed location.

Q Even though it was not a good well that you're offsetting?

A Yes, you might consider it a dry hole, and I think the risk involved going from Continental's well to this proposed location is greater than going from our No. 2 to our No. 1.

Q That is greater than offsetting a dry hole, is this what you are saying?

A No, no. I am saying the risk involved in going from Continental's No. 14, No. 1, to our proposed location is greater than going from our No. 2 Well to a location for No. 1 because it is an inside well; it is an inside location. You're going from the Continental 14 No. 1 over to a pinch-out zone in the No. 4 Well.

Q Well, you have no evidence of that other than the Shell well over there more than a mile away.

A Well, that is enough evidence for me.

Q That No. 2 Well is a non-commercial well, is it not?

A The No. 2?

Q Yes, sir?

A No, sir.

Q Maybe I'm looking at the wrong -- I mean your No. 1 Well?

A The No. 1 is definitely a non-commercial well.

MR. KELLAHIN: That's all the questions I have.

MR. RAMEY: Any other questions of this Witness? The Witness may be excused. Do you have anything further to add to this, Mr. Hinkle?

MR. HINKLE: I have no further evidence.

MR. RAMEY: Would you gentlemen like to submit your statements in writing?

MR. KELLAHIN: I would be happy to; I don't know what Mr. Hinkle wants to do and I'll go with whatever he says.

MR. HINKLE: Let me say this, Mr. Dunnavant has another engagement he has been trying to get to all day, and he would like to be excused if there are no further questions.

MR. KELLAHIN: We would like to have Mr. Walther excused also.

MR. HINKLE: As far as submitting a written memorandum, I would just as soon go ahead and argue the case for this reason. You're going to want another couple of weeks or ten days to submit memoranda, which is just going to further delay this thing.

MR. KELLAHIN: If the Commission please, I could have my memorandum in by next Tuesday.

MR. RAMEY: I was thinking five days, Mr. Hinkle.

MR. HINKLE: I'm going to leave on vacation; I put my vacation off a week in order to attend this hearing today and I'm leaving tomorrow and will be gone until the 10th of August, so that means I can't very well leave

it with another member of the firm because they are not up-to-date on it and that puts me in a bad situation. As far as I'm concerned, my statement won't take over 15 minutes.

MR. KELLAHIN: Mine may take about 20.

MR. HINKLE: I think we better make them.

MR. RAMEY: All right, proceed.

MR. KELLAHIN: If the Commission please, as I stated at the outset of the presentation of our testimony, this is a unique case and it's not the usual forced-pooling case which involves a single proration unit in which one operator owns an interest, has the right to drill, desires to drill, and the others won't agree. We had that situation, it is true, but the significant thing is that it is within the boundaries of a unit, and not only within the boundary of the unit, a proposed well location is within a participating area within that unit, and we feel that makes a substantial difference from the normal case.

At the outset, we are in agreement on the one item, I believe. I think it is pretty definite that we both agree that Continental is draining the E/2 of Section 5. Everybody agrees on that. At that point we

part company. I think it is the significance of this drainage, over which we really differ, and that they say we are impairing their correlative rights by draining this acreage, and we say that they have an avenue open to them approved by this Commission, approved by the State Land Office, approved by the United States Geological Survey; they can join the unit, there are provisions in the unit agreement which permits them to do so, and they could have joined at any time in the past 20 years. I think it is rather significant that this Applicant acquired his leasehold interest by his own testimony some months after the Continental Oil well was drilled. He testified further that he didn't know the capacity of this well, and perhaps in fairness to him he didn't know the exact capacity, but his own testimony also shows that the owner called him and told him about the fine well that was offsetting this acreage and asked him to take the lease, and so we have to reconcile those two statements, In any event, it was offset by probably one of the best wells in the State of New Mexico at the time he acquired the lease.

Now, when we get into this question of the effect of the unit, I'll come to that a little later, I

think I would like to discuss first this question of drainage and its relationship to the risk factor involved here. We both agree that we are draining the acreage. Well, if we are draining the acreage, there is producible gas underlying this tract, and certainly there is not a very great risk if this is true, and the Witness says it is true. We are in a rather difficult role. In the first place they say we are draining them and in the second place they say there is a dog-gone good chance they won't get any well over there. They are having to take both sides, and that is understandable for that is the role they have cast themselves in, but the testimony of Mr. McWilliams and the reservoir information clearly shows by his calculations that the Continental Oil well is draining far in excess of the 320 acres dedicated to it, and this is perfectly proper when we are talking about the well inside of a unit. The testimony of Mr. Walther -- and it's not just based on his single computation under the formula, as Mr. Dunnavant would seem to have indicated in his last testimony -- is based on several different approaches, including the material-balance curve which agrees with it, which he admitted if you have a valid material-balance curve you have a very

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good indicator of the size of the reservoir, and that calculation agrees almost precisely with the calculation he has made as to the closest boundary of this reservoir, which he says is not closer than 2500 feet, which is considerably farther away than the 1700 feet from the Continental well to his proposed location. So, on this basis I think this is about as low a risk well as any Morrow well could be. Continental, in the operation of this unit and development of the south participating area alone, has assumed risks far far greater in developing this reservoir and discovering the resources available on which this Applicant would not wish to capitalize. Now, this, by all the evidence, would be an unnecessary well.

Under the provisions of Section 65-3-14, Subsection C, the Commission is given authority to enter a compulsory pool, but in doing so I want to call their attention to this, and this is the matter I think that Mr.Lyon had in mind when he said, "I would like to call your attention to the statute." (Reading) Where, however, such owner or owners have not agreed to pool their interests, and where one such owner or owners has the right to drill, has drilled, or proposes to drill a

(Reporter's note: Page 137 inadvertently skipped in transcription; text of deposition is intact.)

well on said unit to a common source of supply -- and the word unit is talking about the proration unit, not the Bell Lake Unit, of course -- the Commission -- and this is the significant part -- to avoid the drilling of unnecessary wells, or to protect correlative rights, or to prevent waste, shall pool all or any part of such lands or interests or both in the spacing or the proration unit of the unit. (End of reading.)

Now, you have to make at least one of those findings that it will prevent the drilling of an unnecessary well, and we submit the drilling of this well is an unnecessary well, and that in itself constitutes waste.

The protection of correlative rights, well, let's get first to the question of waste. The Applicant has offered no testimony whatsoever to show that waste will occur if this well is not drilled. There is no testimony offered here to say that gas is going to be left in the reservoir; that anybody is going to lose anything in the way of economic or service or underground waste if the well is not drilled. So, we are left only with the question of correlative rights. When we get into the question of correlative rights, you are talking about 7/32nds interest under a half section of land as opposed

to the overriding interest which is committed to the unit and has been participating in production ever since there has been production in the unit. The interest which would be attributable to this fractional interest has been set aside, and certainly they have the right to come and negotiate to enter this unit, which was the intent when the unit was formed.

Now, talking about the unit agreement, and I think this is a really significant thing in this case. This was an exploratory unit; it was set up some 30 years ago; it was approved by the Oil Conservation Commission Order No. R-355 on August the 20th of 1953. I have a copy of the Order here for your reference. In that Order the Commission made a finding that the proposed unit plan will in principle tend to promote conservation of oil and gas and the prevention of waste, and it also, in Section 3 of the Order portion, said that the Bell Lake Unit plans shall be and hereby is approved in principle as a proper conservation measure.

In Section 6 it is further provided -- and this is their remedy if they are dissatisfied with the present situation -- that any party owning rights in the unitized section who does not commit such rights to

said unit agreement before the effective date thereof may thereafter become a party thereto by subscribing to such unit agreement, or counterpart thereof, or by ratifying the same. (End of reading.) So the Commission has already taken care of their correlative rights in the order that was presented in approving this unit agreement.

Now, I call your attention again to Section 65-3-14 of the statute in which the Commission is given authority to approve unit agreements, and I think we have to assume that the Commission followed this statute back in 1953 when this agreement was approved. In Subsection E it provides that whenever it appears that the owners in any pool have agreed upon a plan for the spacing of their wells or upon a plan for the method of distribution of any allowable fixed by the Commission for the pool, or upon any other plan for the development or operation of such pool, which plan in the judgment of the Commission has the effect of preventing waste and is prohibited by this Act, and is fair to the royalty owners in such pool, such plan shall be adopted by the Commission with respect to such pool. Now, this is the statute under which Continental Oil formed Bell Lake Unit and it was, as I say, an exploratory unit fraught with considerable risk; it

covered a tremendous area of land, and wisely it was provided in the unit agreement that as development proceeded it would be reduced to a participating area at a definite time in the history of the pool. I think it is almost universally agreed that unit operations are a sound conservation practice. I would like to read from Section 16-2, Law of Federal Oil and Gas Leases, an article by Mr. Hinkle in which he stated: (Reading) In addition to the conservation and economic benefits to be derived from unitization, unit plans often furnish a convenient vehicle for pooling of the resources of operators and the sharing of this incidental to the drilling of wildcat wells, particularly where deep and expensive wells are involved. (End of reading.) That is exactly what we have got here. These were deep and expensive, and as the Witness has testified, some seven million dollars has been spent on this unit up to the present time in proving up the very acreage Texas West now wants to drill for itself.

Mr. Hinkle went on to say that exploration and development of federal lands under units has become increasingly popular since authorized originally in 1930; unitization has been effective and pioneered in the public

land states by the Interior Department -- and I might add that in 1924 the Secretary of the Interior in authority was on the verge of insisting upon federal compulsory unitization, and it was started off at that point. He says that State conservation authorities have recognized unitization as the most efficient method of operating oil and gas fuel for the pools insofar as conservation is concerned.

Well, I agree with Mr. Hinkle; I think that is a correct statement of the situation. There are numerous other articles arriving at the same conclusion. I would refer to William and Meyers Oil and Gas Law, in Section 910, in which he points out: (Reading) It is always urged that efficiency in results in the operation of oil and gas reservoirs and the prevention of waste of recoverable hydrocarbons require some reservoirs be developed and operated as a unit without regard to surface boundaries. (End of reading.)

Well, now, that gets us back to this question about 320-acre spacing. True, the Commission has set up 320-acre spacing for the Morrow Formation, but that does not necessarily say that every unit has to be developed. A unit operation can be developed on the most efficient

basis, and that is the purpose of unitization.

The Williams and Meyer Section goes on to say: (Reading) The purpose of unitization is to permit the entire field, or a very substantial portion of it, to be operated as a single entity without regard to surface boundaries. (End of reading.) Now, Professor Sullivan, in his Treatise on Oil and Gas Law in Section 185 points out that it merely makes possible the development and exploitation of the pool as a single producing mechanism in accordance with accepted scientific and engineering principles. The result is a maximum economic recovery of the oil and gas in place and the division thereof among the respective owners in accordance with the terms of the Unit agreement. The law of capture is inapplicable because ownership is not conditioned upon a reduction to possession through producing operations but upon the terms of the participating formula in the unit agreement. (End of reading.) That again protects the correlative rights of the parties involved in this particular case.

Now, to get to another, to me, rather serious question. I'm sure Mr. Hinkle is going to say that he agrees with unitization; I knew he does; he has had a considerable hand in the development of unitization law

in the State of New Mexico, and if I'm not mistaken he wrote the Bell Lake Unit Agreement, and he did an excellent job. Among other things it does provide in Section 13 that (Reading) Any party hereto owning or controlling the working interest in any unitized land having thereon a regular well location may, with the approval of the Supervisor as to Federal land, the Commissioner as to State land, and the Commission as to privately owned land, at his own risk, cost and expense, drill a well to test any formation for which a participating area has not been established. (End of reading.) It doesn't say that you can drill one where the participating area has been established, so in that sense, this Application is in violation of the provisions of this unit agreement. Admittedly, that interest did not join the unit agreement, but I would point out that it was approved by the United States Geological Survey and the Commissioner of Public Lands, and they have in that sense become a party to this agreement, and I think for this Commission to approve -- unless it is also approved by the Commission, of course -- to approve this well location would at least violate the spirit of their action and the participating in the organization of this unit agreement.

Now, the Section goes on further to provide that after the well has been drilled, the operation of the well -- let's see if there is such a part here . (Reading) The well shall thereafter be operated by the unit operator in accordance with the terms of this agreement and the Unit Operating Agreement. (End of reading.) Now, this is talking about a well that is drilled by a working-interest owner not within a participating area. It provides that if he elects to drill a well in there then the unit operator will then take over the well and operate it. We have a much stronger situation where we have a well being drilled within a participating area where there is no provision at all in the unit agreement accompanying such a procedure. We submit that if the well is to be drilled, the well should be turned over to Continental Oil Company to operate as a unit well in order to keep the production and participation in line with the letter and the spirit of the Bell Lake Unit Agreement as approved by this Commission.

The question of a risk factor I think is a very serious one. I believe it is rather clear that a 200 percent risk factor would be a very strong incentive to this operator to drill the well, not from the point of

view of protecting the risk but from the point of view of his economic recovery from this well that is drilled, and I have serious doubts that he would even drill this well if the risk factor of 200-percent is not allowed. I think our evidence further shows, though, that there is no high degree of risk in drilling this well. There has been no evidence as to any physical hazard that might be encountered in this particular well; the Applicant has given us no testimony on that score, and on cross examination he said that he did respond "yes" to the question that the risk we are talking about is a risk of not encountering production. I think our testimony and evidence clearly shows he will encounter production, and that being true, this is a low or no risk well from the point of view of the provisions of the New Mexico statute.

Thank you.

MR. HINKLE: If the Commission please, I have no quarrel at all with what Mr. Kellahin has said about unitization. It is true that I did wri - chapter in the law of federal oil and gas on unitization and have been an advocate of unitization from the very beginning and promoted it, and it has its place and is a very good

conservation measure, but I don't think you can find anything in what I have written to the effect that you can require anybody to join the unit outside of the statute that so provides, and we haven't had one in New Mexico until this last legislature, and that was when they passed Chapter 293, 65-14-1, which we now have compulsory unitization, but up until that time there was nothing that you could find anywhere in our statutes that required anybody to join the unit. The Commission -- with reference to the order that was issued by the Commission approving the Bell Lake Unit -- is no statutory authority on the Commission to require anybody to join the unit. It has no bearing whatsoever upon those who didn't join. This case, the 7/32nds interest, the mineral owners, refused to join in the beginning. Now this is true of practically all units of any consequence or any size. You have cases where you have some mineral owners who just don't join, and that is the risk that the operator takes when it forms the unit of that kind. I think -- I'm in favor of the compulsory unitization, I think it is going to be better in the future, but we are talking about a situation here that was -- the unit was put into effect when there was no compulsion whatsoever.

There is nothing in the unit that can affect this 7/32nds interest.

Now, I am surprised that Mr. Kellahin would take the position that the section providing for compulsory unitization refers to a field-wide unit.

MR. KELLAHIN: I didn't take that position, Mr. Hinkle.

MR. HINKLE: Well, you said "unit." "Well on said unit," which indicated to me that you were talking about the whole unit.

MR. KELLAHIN: I made it quite clear that we were talking about a proration unit.

MR. HINKLE: That's what I wanted to clear up; I misunderstood you because that is the impression I got.

MR. KELLAHIN: If the Commission please, there are two section in that section of the statute; one applies to the proration unit and one applies to unit operations. I was quoting from both.

MR. HINKLE: Well, let me read to the Commission the section Mr. Kellahin read but didn't read the last part. (Reading) Where, however, such owner or owners have not agreed to pool their interest and where one separate owner or owners who have the right to drill has

drilled or proposes to drill a well on said unit to a common source of supply, the Commission devoids the drilling of unnecessary wells or to protect correlative rights or to prevent waste, shall pool any part of such land or interest or both in the spacing of the proration unit as a unit. (End of reading.)

Now, Mr. Kellahin has stated that this is a unique case. In my opinion this is just simply a mill-of-the-run pooling cases. The only difference in this case is that you have 25/32nds under a unit, owned by a unit, rather than by an individual. Otherwise it is just a mill-of-the-run case.

Now, the statute that I have just read provides three things: One, where the owner or owners of undivided interest in the spacing of a proration unit have not agreed to pool their interests; they haven't agreed here. It is very clear that they can't get together. Two, where one of the owners has a right to drill and proposes to drill; we have that. We have a case where 7/32nds interest and the owner proposes to drill a well. The third requirement of the statute is that the forced pooling will avoid the drilling of unnecessary wells or protect correlative rights or prevent waste.

Now, the field-wide unit, the Bell Lake Unit, does not provide for any spacing at all; it is just a unit for the development of the whole pool or area. The Commission sets up spacing units based upon certain factors, such as drainage, what one well will effectively and efficiently drain. Here they talk about we want to develop this on 640 acres, but they haven't applied to the Commission for 640-acre spacing; it's admitted and clear in this case that the spacing unit here is 320 acres, and here we have the 320 acres without a well on it. We have a party that wants to drill, and under the rules they have a right to drill a well on 320 acres. So there is no question of what -- the testimony is clear and Mr. Kellahin has admitted that the Continental well in the W/2 of Section 5 is draining the E/2, so their correlative rights are protected; that's admitted, and that is one of the requirements of the statute, so we've got all of the requirements here of this statute so it is a relatively simple proposition and it says that if they exist, those three things, that the Commission shall pool these interests. I don't think there is any alternative on the Commission except to write a pooling order in this case.

Now, Continental is talking about us having the right to protect our interests by joining the unit on their terms. They have a right to protect themselves by paying that 25/32nds; they don't have to assume the 200-percent risk, but I think that the 200-percent risk factor is proper in this case because the evidence clearly shows that a development of the Morrow Formation is a high-risk proposition and this well could well turn out to be dry. There has been a very recent case where they drilled within 330 feet of the line in Eddy County on Morrow wells as against a very large well and it looks like it's a relatively small well. This just happened this last hearing. So, you have a very hazardous situation in developing the Morrow Formation, and I think there ought to be the maximum of 200-percent granted here. As I say, if they don't think there is any risk, let them pay the 25/32nds of their cost. If they don't want to do it, why they think there is a lot of risk involved.

As far as Continental being operator of the well, I haven't talked with Mr. Dunnavant about this at all, but I think if they want to come in and pay their 25/32nds and agree upon an AFE and drill a well, I don't think -- this is just my off-hand judgment -- that

he would have any objection to them being the operator. The main thing is to get this well drilled and protect this 7/32nds interest that is being drained.

So, I submit that the Commission should approve the Application and do it without delay because of the drainage that is taking place. You'll note that the testimony is clear and they haven't denied it that for the last three months they have increased the production from this well every month in order to -- well, I say, I won't accuse them of it -- but anyway it is being drained.

The history and the long testimony here before the Commission has been very interesting and I know Continental has been saddled with some very bad experiences over a period of 20 years and I am sympathetic with their position, but it is one of those things, that business risk that they took and they lost and it has taken them a long time to even get even, but that in itself, and all of this history, and all of the testimony in regard to the unit, in my opinion, has absolutely nothing whatsoever to do with this case; it is irrelevant. The three factors are here, which I mentioned, and because of those I think the Application ought to be approved. That's it.

MR. RAMEY: I don't believe I have anything further. The Commission will take the case under advisement and the hearing is adjourned.

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

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

RICHARD L. NYE, Court Reporter

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
May 28, 1975

EXAMINER HEARING

IN THE MATTER OF:

Application of Texas West Oil & Gas Corporation for compulsory pooling, Lea County, New Mexico.

Case No. 5493

BEFORE: Richard L. Stamets, Examiner.

TRANSCRIPT OF HEARING

A P P E A R A N C E S

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I N D E X

E X H I B I T S

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MR. STAMETS: Case 5493. Application of Texas West Oil & Gas Corporation for compulsory pooling, Lea County, New Mexico.

MR. HINKLE: Clarence Hinkle, Hinkle, Bondurant, Cox & Eaton, Roswell, appearing on behalf of Texas West Oil & Gas Corporation.

MR. STAMETS: Call for other appearances in this case.

MR. KELLAHIN: Jason Kellahin, Kellahin & Fox, Santa Fe, appearing for Continental Oil Company, operator of the Bell Lake Unit.

MR. HINKLE: We have one witness and four exhibits; we would like to have the Witness sworn.

MR. STAMETS: Mr. Kellahin, do you have any witnesses?

MR. KELLAHIN: Yes. We will have at least one depending on what testimony is offered; we might have another.

MR. STAMETS: I would like to have all the witnesses and potential witnesses stand and be sworn at this time.

(Witnesses sworn.)

MR. STAMETS: You may proceed.

L.M. DUNNAVANT

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

DIRECT EXAMINATION

BY MR. HINKLE:

Q State your name, your residence, and by whom you are employed.

A My name is L.M. Dunnavant, 609 Midland National Bank Building, I am President and owner of Texas West Oil & Gas Corporation.

Q Are you a Petroleum Engineer?

A Yes, sir.

Q Have you previously testified before the Commission?

A I have not.

Q State briefly your educational background and your experience as a Petroleum Engineer.

A I was graduated from Oklahoma State in 1954 with a BS in Engineering; I was with Phillips Petroleum Company for four years as an Engineer Trainee and Petroleum Engineer; I was with Argo Oil Corporation out of Midland, Texas, for three years as a Petroleum Engineer and Coordinator of Engineering and Geological

Departments; I was with Rodman Oil Corporation for four years as Production Manager; I was co-founder and Manager of Operations of Southwestern Natural Gas Corporation in 1965; co-founder and Manager of operations for Western States Producing Company in 1969. I became independent and formed Texas West Oil & Gas Corporation in June of 1971.

Q Have you had considerable experience in New Mexico?

A Yes, sir, I have.

Q Exploration and drilling for oil and gas?

A Yes, sir.

Q Have you drilled any wells in the area that is involved?

A Yes, sir, we have.

MR. HINKLE: Are the Witness' qualifications sufficient?

MR. STAMETS: They are.

BY MR. HINKLE:

Q Are you familiar with the Application filed in this case?

A Yes, sir.

Q What is Texas West seeking to accomplish?

A Texas West is requesting compulsory pooling for all the mineral interests in the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East. They call it the Bell Lake Field, Lea County; I thought it was listed originally as the Antelope Ridge Field, New Mexico. This acreage is to be dedicated to a well to be drilled at an orthodox location 1980 from the North and East line of Section 5. Further consideration would be the cost of drilling and completing this well and the allocation of those costs as well as the operating costs and charges for supervision. Further consideration of Texas West being designated as operator of the well and for a charge for the risk involved in drilling this well.

MR. HINKLE: Mr. Examiner, when we prepared this Application we were informed that there were two small mineral owners, J.M. Clark and Dale M. Thompson, each of which had .0078125 interest in the minerals. We have since been informed that these mineral interests have been committed to Bell Lake Unit so we are asking that any reference to Clark and Thompson in the Application be deleted because they are committed to the Bell Lake Unit.

MR. KELLAHIN: If the Examiner please, I would like to ask for another stipulation if possible. Would you be willing to stipulate that the entire Section 5 is in the participating area of the Bell Lake Unit, southern participating area?

MR. HINKLE: Is in the participating area, you say?

MR. KELLAHIN: For the Morrow.

MR. HINKLE: Of the Bell Lake Unit?

MR. KELLAHIN: Yes, sir.

MR. HINKLE: The entire section is not in the participating area, is it?

MR. KELLAHIN: Our testimony would so show, that the E/2 is also in the participating area.

MR. HINKLE: Do you know anything about this Mr. Dunnavant?

MR. DUNNAVANT: Well, it's not part of the Unit, the 70 acres that we have.

MR. HINKLE: The acreage that we have is not a part of it.

MR. KELLAHIN: I'm talking about the committed acreage in the SE/2.

MR. HINKLE: Well, I think we are willing to

stipulate that all of the acreage in the E/2 of 5 is committed to the unit except this that is owned by Texas West.

MR. KELLAHIN: It is also in the participating area is what I'm saying.

MR. HINKLE: Oh, I don't know about the participating area; I can't stipulate to something I don't know about, but it probably is. I just don't know.

BY MR. HINKLE:

Q Mr. Dunnavant, have you prepared or has there been prepared under your direction certain exhibits for introduction in this case?

A Yes, sir, there has been.

Q They are exhibits which have been marked 1, 2, 3, and 4?

A Yes, sir.

Q Refer to Exhibit 1 and explain what this is and what it shows.

A Exhibit No. 1 is an ownership map of the area of interest reflecting the Bell Lake area and the Antelope Ridge area. The Morrow producing wells are shown color-coded yellow. Each of those has perforations and the calculated open flows there by that particular well. The

320-acre unit that is in question here is outlined, which represents the E/2 of Section 5

Q Does this also show the ownership of all the acreage in the area?

A Yes, sir.

Q The outline of the Bell Lake Unit?

A Yes, sir, it does.

Q And also the Antelope Ridge Unit?

A Yes, sir, it does.

Q Does this Exhibit also show the potential of the different wells, that is, the completion potential of the different wells that have been completed in the Morrow formation?

A Yes, sir. It has the calculated open flow there by each well completed in the Morrow formation along with the perforated intervals.

Q Are any of these wells shown here on Exhibit 1 owned by Texas West?

A Yes. We have drilled and completed three wells on the east side of the Antelope Ridge Field, one of which is a dual completion.

Q Can you mention the sections that they are in?

A Yes, sir. One well is located in Section 35;

two wells are in Section 2. We have re-entered and deepened a Shell drilled-and-abandoned location in the NE/4 of Federal 9, which is also completed as a Morrow producer.

Q What is the potential of the Continental well in the W/2 of Section 5?

A The reported potential was 82 million cubic feet of gas per day.

Q What about the two wells that are in Section 4?

A The Shell No. 2 Well was originally completed -- that's in Section 4 -- with a COF of 38 million, and they drilled a replacement or extension well, a twin well to it, which was later recompleted in the Morrow. Both wells are producing from the Morrow at this time because of mechanical problems downhole.

Q Do you have anything further with respect to this Exhibit?

A No, except that this pretty well reflects that the area is pretty broad and that the development that Texas West did on this side set off quite a bit of additional drilling. Shell Oil Company now has drilled a well in the SW/4 of Section 33. They haven't completed it yet to our knowledge. And, Great Basin Petroleum Corporation has stepped out to the north up there

sometime ago and drilled and completed a Morrow well.

Q Do all of these producing wells have pipeline connections at the present time?

A All that we -- except possibly the Basin Petroleum well up to the north.

Q What pipeline companies are in there?

A To my knowledge we have El Paso Natural Gas, Southern Union, and Trans Western Pipeline.

Q Now, refer to Exhibit No. 2 and explain what it shows.

A Exhibit No. 2 is a structure map based on top of the Morrow formation reflecting all of the wells in the area of interest in both the Bell Lake and the Antelope Ridge areas with the Morrow tops shown by each well. This is our structural interpretation of the area involved.

Q Would you interpret this to mean that all the wells that are located on this structure are in communication with each other?

A I think that they are all producing from the Morrow sands that correlate throughout the entire area. Structurally speaking, our proposed location could be flat, or possibly high, to the well, Continental's No. 14

Well in the W/2 of Section 5.

Q In your opinion will the E/2 of 5 prove to be productive in this formation?

A Yes, I definitely do. We are producing both above and below this depth in both the Bell Lake and the Antelope Ridge area.

Q Do you have any opinion as to drainage occurring at the present time?

A Yes. I don't think there is any doubt but what there has been drainage across lease lines. This is a very prolific well in the W/2 of Section 5. It is my understanding that it is currently producing, or was the last information I had, from 8 to 10 million cubic feet of gas per day.

Q How long has this been on production?

A This well was potentialed I believe in early '74. It has been in there approximately 11 months; producing approximately 11 months.

Q How long has the well in Section 4 been producing?

A For several years. These wells were completed -- the original wells were completed in the late '50s and early '60s.

Q Do you have any further comments with respect to this Exhibit 2?

A No, sir; I think it is self-explanatory.

Q Refer to Exhibit 3 and explain what this shows.

A Exhibit No. 3 is a cross section extending from the westernmost Bell Lake Unit well to the easternmost Antelope Ridge well, reflecting the top --

Q (Interrupting) Excuse me, is the insert map showing the --

A (Interrupting) The insert map shows the line of the cross section, yes, sir, going from west to east, and it reflects the Atoka tops and the Morrow tops and the perforated intervals with the calculated open flow at the base of the log.

Q This also shows the relative location of the proposed well?

A That is correct. I would like to mention that these intervals shown here, these perforated intervals, are gross intervals, gross perforations.

Q The first well"A",shown there, there is only a small amount perforated, is that right?

A This is a small zone. Most of the completions out here extend down to approximately from 500 to 600 feet

from the top of the Morrow and going anywhere from the top down to this depth. This particular well has one zone completed at 14,417 to 454, and it is a very clean looking sand, good looking sand. There are other zones of interest, other sand zones, that have potential, but we have not evaluated those with detail.

Q What is your interpretation of this cross section as far as producing formations is concerned and how would it affect the well that you propose to drill?

A Well, I think that it reflects here that this zone can be correlated with -- that the zone producing from the Continental Bell Lake No. 14 Well -- can be correlated with zones in other wells throughout the bulk of Bell Lake and the Antelope Ridge area. For instance, our Federal 9 No. 1 atop of our perfs start approximately 70 feet from the top of the Morrow and extend down several hundred feet, which would be inclusive of this producing sand in the Bell Lake Unit. Also, over on the east side of the Antelope Ridge area, which is the log on the right-hand side of the cross section, extends down approximately 700 feet; the perforations being from 300 feet approximately, below the top of the

Morrow, down to 700 feet below the top of the Morrow. These sands are correlative throughout the area. As a matter of fact -- it's not shown on this cross section -- Shell drilled their No 5 Well, which I mentioned previously, in the northwest quarter of the southwest quarter of 33, and this has a correlative sand that produces in this Continental well, and it is 200 plus feet low to it.

Q Do you have any further comments with respect to this Exhibit?

A No, sir.

Q Have you had any contacts with Continental with respect to trying to reach agreement with respect to the drilling of this well?

A Yes, sir, I have. I called them earlier this year and talked to their District Landman and informed him of the lease status there and that we felt like we were being drained and that we would like to negotiate an AFE operating agreement with them at that time. They were not interested; we later -- this would be February the 28th, 1975 -- wrote them a letter, attention Mr. L.P. Thompson, Division Production Manager, and requested that in order to protect our acreage in the drainage across lease lines, that they submit us an AFE. We were

ready and willing to participate in the drilling of a well to an approximate depth of 14,150 to test this particular sand zone that is producing in the Bell Lake Unit No. 14. We later received a response from them dated March 26th, 1975, whereby they said they were not interested in doing this and suggested, or gave us the opportunity to participate in the Bell Lake Unit, which, of course, we do not wish to do.

Q Have you made an estimate of the cost of drilling this well?

A Yes, sir, we have. This is based on --

Q (Interrupting) Refer to Exhibit 4, is this your estimate?

A Yes, that is correct, Exhibit 4. This is based on the cost that we have experienced in the area; it's fairly updated; I don't think it will be more than 1 or 2 percent off because of increased costs. The total intangible well cost is estimated to$567,300; the total tangible well cost is estimated to be $375,350 for a total well cost of $903,150.

Q And, as I believe you stated, this is in line with your experience in drilling other wells in the area?

A Yes.

Q Have you made an estimate as to the cost of supervision during the drilling of this well?

A Yes, sir, we have. We think the area rate probably, in our estimation anyway, would be $1600 per well per month.

Q Is this in line with what is being charged by other operators in the area?

A To our knowledge it is, yes, sir.

Q What about the operating cost, the monthly operating cost, in case you do drill that well?

A We think $250 per month would be a fair charge.

Q Is that in line with other operating costs in the area?

A That we've experienced, yes, sir.

Q In your opinion, should a risk factor be assigned in connection with this well; that is to those who do not participate?

A Yes, sir, I do, I definitely do, because you can geologize and engineer the Morrow and come up with the best information you've got, and most of the time you are long, but there is a great deal of risk involved. We think that it's correlative across the entire area, but there is a great deal of risk involved.

Q Do you think the maximum factor permitted under the law should be assigned in this case?

A I definitely do, yes, sir.

Q Do you have any further comments?

A I have none, sir.

MR. HINKLE: We would like to offer Exhibits 1 through 4.

MR. STAMETS: Without objection these Exhibits will be admitted.

(Whereupon, Applicant's Exhibits Nos. 1 through 4 were admitted into evidence.)

BY MR. HINKLE:

Q I have one other question here: In your opinion, if this Application is approved, would it be in the interest of conservation, the prevention of waste, and protection of correlative rights?

A Yes, sir.

MR. HINKLE: That's all I have.

MR. STAMETS: Are there questions of the Witness? Mr. Kellahin.

CROSS EXAMINATION

BY MR. KELLAHIN:

Q Mr. Dunnavant, in reference to your Exhibit No. 2, I believe you testified that the Morrow is correlative across the entire area. You don't mean by that that all these wells are completed in the same zone?

A No, sir, I do not.

Q Are they interconnected?

A They are interconnected. We think that not all of the zones are interconnected; we think that there are some zones that are interconnected.

Q Some are not?

A Yes, sir.

Q It's a typical Morrow pool?

A That is correct.

Q Stringers interconnected here and there and you don't know whether you are going to encounter where those are or not?

A Well, we can correlate from the west side over here and we can see zones that we are producing from over here on the east side.

Q Now, on the Exhibit No. 2 you have seemed to indicate that your proposed location varies structurally

to the Shell wells in Section 4, do you not?

A No. What we have shown there, Mr. Kellahin, is a saddle between the Bell Lake and the Antelope Ridge area. Now, we could very easily, instead of closing this off, as you can see, we could have extended the contour levels here such as probably our proposed location and the Bell Lake Unit No. 14 Well, could be flat. We think this is the best geological practice, to show it the way we have shown it.

Q It would be valid to show it as flat wouldn't it?

A Yes, sir.

Q From a geological point of view?

A Well, from a geological standpoint, in our interpretation, this is the best interpretation.

Q In your opinion.

A Yes, sir, in my opinion.

Q Now, on your Exhibit No. 3, those wells are not all completed in the same correlative zone, are they?

A On the cross section?

Q Yes, sir, on the cross section.

A No, sir, they are not.

Q Do you know what the bottomhole pressure was

in the Bell Lake No. 5 on the left-hand log?

A No, sir, we do not.

Q Would you accept the figure of 1000 pounds?

A Currently you mean?

Q Yes, sir.

A Well, if you say so.

Q Well, do you know what it was when the well was completed in Section 5, the West Half?

A No, sir, I do not.

Q You didn't have the bottomhole pressure?

A We do not have access to that information.

Q What do you have as the calculated open flow?

A We have the calculated open flow to the logs; we have some reported flowing to the pressures at the time of completion, which was in excess of 6000 pounds.

Q Do you have any pressures of the other wells shown on the Exhibit?

A No, sir, we do not.

Q No pressures at all?

A We have pressures on our wells.

Q Yes, sir.

A Would you like those?

Q I would like those, yes, sir.

A The flowing pressures on the -- now, these are approximate; I'm pulling this out of here.

Q Okay.

A On our State, which would be the easternmost well in Section 2, it is approximately 1000 pounds flowing-tubing pressure. Our Federal 9 No. 1, which is in Section 9, is approximately 850 pounds; this was the re-entry well.

Q And that again was flowing-tubing pressure?

A Yes, sir. We have not checked the other offset wells as far as flowing-tubing pressures are concerned.

Q Your Exhibit shows your proposed location is high as compared to the Continental Well, and also high as to the well to the west?

A This was reflected on the structural map. We're taking that, Mr. Kellahin, from the structural interpretation which is reflected on Exhibit 2.

Q You also show it lower than the Wildcat Antelope Ridge No. 2 Well?

A Which well are you referring to?

Q Well, the well next to the last to the right.

A Yes, sir. This is Shell Oil Company's well

in the NE/4 of Section 2. The cross section goes from the Bell Lake Unit No. 14 down to Section 9 and back up to the Shell well.

Q But, from your structural position you're more nearly related to the -- what is the name of that well?

A Antelope Ridge.

Q Antelope Ridge Well?

A No, sir. Actually we would be on -- structurally, referring to Exhibit 2 again -- we would be on a structural level of about minus 9600. The Shell well is located above a minus 9300; the Continental well has a minus 9747, something like that. It's pretty close, yes. It could be structurally a little closer to the Antelope Ridge Well.

Q In that case it would be more advantageous to move farther to the east rather than crowding the west line?

A No, sir. We do not think so because the drainage occurs there. That well is located less than 1000 feet from our boundary line to the west.

MR. KELLAHIN: That's all, thank you.

REDIRECT EXAMINATION

BY MR. HINKLE:

Q Your proposed well is at an orthodox location, is it not?

A It is an orthodox A-standard location, yes, sir.

Q What is the designated pool of the OCC for this area that you are going to drill?

A The designated pool?

Q Yes.

A The Antelope Ridge Field, is that what you mean? It's 320-acre proration units.

Q Is there a definition of the Morrow formation in connection with that?

A Yes, sir.

Q Does that include any particular stratas in the Morrow formation or is it the entire Morrow formation?

A Yes, the Morrow formation.

RECROSS EXAMINATION

BY MR. KELLAHIN:

Q Mr. Dunnavant, what is your reason for not wishing to join the Bell Lake Unit?

A Costs.

Q Costs? In other words you are talking about

the present costs or costs of development of the area as a unit.

A Well, one thing, could I refer to a statement in this letter I got from Mr. Thompson?

Q Yes, sir.

A May I refer to that?

Q Yes, sir.

A It says, "Continental Oil Company, speaking for itself and other working-interest owners who have invested their moneys, we have little enthusiasm," and so forth -- that is not what I wanted to find here; just a moment.

Q I know you would.

A I can't find it on here. Oh, here it is, I apologize. (Reading) Continental Oil Company and the other working interest owners which committed to Bell Lake Unit area, have been developing the Bell Lake Unit since 1954 and had expended very large sums of money in doing so. These moneys have not been returned through production as of this date, but presently producing wells are finally moving us toward the break-even point. (End of reading.) We can't stay in business by breaking even.

Q How long have you owned this acreage here?

A This is a short lease. We got it in January of this year.

Q Do you have any knowledge whether there was any reason that acreage was not committed earlier?

A Yes, sir, a very definite reason. Mr. Madera has interest in other leases with us and Mr. Madera, in his own words, which are not exact, he considered us to be prudent operators in that we met all timely offsets and so forth. He did not want to commit his to the area because -- the Bell Lake Unit area -- because he thought there would be inequities involved. He asked that we try to protect his interests.

MR. KELLAHIN: That's all. Thank you.

RECROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Dunnavant, Texas West has drilled three wells over there on the east side, and there is another well on to the south. Does your experience there seem to indicate that the Morrow can be developed on 320 in this area economically?

A I 320, yes, sir, I do.

Q I believe from your testimony that you approached

Continental with a proposition that they would either drill the well or you would drill the well?

A Initially we asked them for an AFE and we just told them that we would join them and pay our proportionate part and they refused to do this.

Q Now, also taking from your testimony, you believe the only way to protect this acreage is to drill this well?

A Yes, sir.

MR. STAMETS: Any further questions of the Witness? He may be excused.

(Whereupon, a discussion was held off the record.)

MR. STAMETS: At this time we will recess the hearing until 1:00.

(Whereupon, the noon recess was held.)

MR. STAMETS: The hearing will please come to order. Mr. Kellahin, you may proceed.

(Witness previously sworn.)

VICTOR T. LYON

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q State your name, please.

A Victor T. Lyon.

Q By whom are you employed and in what position?

A I'm employed by Continental Oil Company as Conservation Coordinator in the Hobbs Division located in Hobbs, New Mexico.

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

A Yes, I have.

MR. KELLAHIN: Are the Witness' qualifications acceptable?

MR. STAMETS: Yes, they are.

MR. HINKLE: How are you qualified; as a Petroleum Engineer?

MR. LYON: Petroleum Engineer.

(Whereupon, a discussion was held off the record.)

BY MR. KELLAHIN:

Q Mr. Lyon, are you familiar with the Bell Lake Unit?

A Yes, I am.

Q Is Continental Oil Company the unit operator of that Unit?

A Yes.

Q For the benefit of the Examiner, would you briefly review the history of that Unit?

A Yes, sir. Bell Lake Unit became effective September 30th of 1953. The Unit contained a total of 37,177.86 acres of which 27,041.34 acres, or 72.7 percent of the Unit was Federal land, 20 percent was State lands, and 7.3 percent was fee lands. Exhibit No. 1 is a plat of the original unit area showing the entire unit area and the acreage is designated by a symbol found at the bottom as to the 3 types of lands involved. It also shows the wells which have been drilled in the unit area. The wells which are circled in green are those wells which were drilled at Continental Oil Company's 100 percent expense. These include Well No. 1, located in Unit N, Section 31, 23 South, 34 East; No. 2 in Unit N of Section 30, same township; No. 3 located in Unit C or Section 6, 24, 34; 7, which is in Unit A, Section 1, 24, 33; 8 in Unit M, Section 7, 22, 34; 9, which is in Unit K of Section 18, 23, 34; 11, in Unit N,

Section 31, 23, 34; 12 in Unit J of that same township, and Wells 13 and 13Y in Unit H, Section 6, 24, 34.

Now, the Unit Agreement provided for automatic contraction to the then existing proration unit on the tenth anniversary of the effective date, and it also provided for extension of 5 years upon application. This 5-year expansion was granted and the unit contracted automatically on September 30th, 1968, to the then existing, participating areas, which are shown on Exhibit 1 by the red outline. The area to the north, which we call the North area, or participating area B, consisted of Sections 36, 22, 33; 31, 32 of 22, 34; 1 and 12 in 23, 33; and 5, 6, 7, and 8 in 23, 34. The South area, or participating area A, consists of 9 sections, exactly the same sections one township further south. Now, the wells which are circled in red are the wells which have been drilled by working interest owners in some combination in the unit. These include Well No. 1-A in Unit N of Section 31, 24, 34; No. 4 in Unit F, Section 6, 24, 34; No. 5 in Unit G of Section 1, 24, 33; No. 6 in Unit O of Section 6, 23, 34; No. 14 in Unit F of Section 5, 24, 34; No. 15 in Unit K, Section 8, 23, 34, and a well is currently drilling, No. 16 in Unit A, Section 7, 24, 34.

Q How was Well No. 10 drilled?

A Well No. 10 was drilled by the working-interest owners which own the leasehold that states it is the 9-section area which is between the north and south area.

Q Wells No. 1-A and No. 4 were drilled by Continental Oil, is that correct?

A Originally they were drilled at Continental's 100-percent expense, and at the time that the south participating area was formed, Continental asked the working-interest owners to contribute their share of the cost of drilling the wells that had been drilled to that date. We were unable to secure their approval to reimburse us all of those expenses.

Wells 1, 1-A, 2, 3 and 4 had been drilled at that time. Well No. 1, which was the discovery well, actually blew out and burned and was subsequently plugged and abandoned. No. 1-A was drilled as a twin well and was successfully drilled to the Devonian as the discovery well in the Devonian formation. No.2 was drilled --

MR. STAMETS: (Interrupting) Excuse me just a minute; I have a question here. On the Exhibit No. 1, between 1, 1-A and 11, it appears on my Exhibit as Wells No. 1 and 11 are green circles and 1-A is a red circle.

MR. LYON: That is correct.

MR. STAMETS: Okay.

MR. LYON: The green circles represent those wells drilled at Continental's 100 percent expense.

BY MR. KELLAHIN:

Q You are referring to No. 1-A as having been drilled at Continental's expense, I believe, are you not?

A Well, we're getting to that. It was initially drilled at Continental's 100 percent expense. Well No. 2, which is immediately outside the participating area, just to the north of the South area, was drilled to the Atoka formation and was completed as a producing well in that formation. That well provided drilling fuel for a number of the wells that were drilled in the unit area. It subsequently went to water and was shut in. It currently is being used as a salt-water injection well.

No. 3 was drilled to and completed in the Bone Spring formation and the well was considered noncommercial for some 18 years.

No. 4 was drilled to and completed in the Devonian formation, and this well also blew out but it did not burn. On the basis of the test data from Well No. 1-A and No. 4, an application was filed and the

participating area was approved consisting of the nine sections which I have previously described.

Q Does that include the E/2 of Section 5?

A Yes. It includes all of Section 5.

Q That is in a participating area, is that correct?

A Yes.

Q Now, that applies only to the Devonian formation?

A That's right. That applies to the Devonian formation only. Now, this is at the time that I mentioned before; when this participating area was being formed we requested that we be reimbursed for our expenses to that time. The other working-interest owners declined to pay for the cost of drilling and plugging Well No. 1 and the blow-out in both Well No. 1 and No. 4.

Q What did you learn when you drilled Well No. 5?

A Well No. 5 was drilled as a unit well; all of the working-interest owners in the South area participated in those costs; the Devonian was found approximately 1000 feet low and water productive. It was plugged back and recompleted in the Morrow formation but was declared noncommercial. The working-interest owners

in the Devonian participating area participated in the cost of drilling this well and they have participated in the revenue which the well generated from its production.

A gas contract was negotiated with Trans Western Gas Pipeline Company and the wells in the unit were connected and began producing in 1961, seven years after our initial discovery. In 1969 Well No. 1-A had declined in productivity and gas production and the water had increased to the extent that it was no longer commercial. In contemplation of plugging this back and recompleting, the working-interest owners entered into an agreement whereby all formations below a depth of 9000 feet were, in effect, pooled as to working interest, so that we fixed participation of the working interest in any drilling, recompletion, or production from any formation below 9000 feet in this area. Now, the reason that we excluded the area above 9000 feet was that the Bone Springs was producing in Well No. 3 at what appeared to be noncommercial rates, and rather than go through the hassle of trying to establish what they would pay for -- other working-interest owners -- would pay for in this thing, we just excluded it, so that Bone Spring is excluded by that -- it has the effect of excluding that

in our operating agreement with the working-interest owners.

After this agreement was entered into, Well No. 1-A was plugged back from the Devonian and recompleted in the Morrow. This well was also noncommercial. In 1973, Well No. 4 also became uneconomic in the Devonian and was plugged back and recompleted in the Atoka. This well was potential for a calculated absolute open flow of 69 million cubic feet of gas per day.

Well No. 14 was drilled and completed in 1974 as a producer from the Morrow. This well is shown in Unit G of Section 5. Then, late in 1974 we commenced drilling No. 16, which is located in Unit A of Section 7.

MR. STAMETS: Excuse me a minute Mr. Lyon; did you identify No. 14 as being in Unit G of Section 5?

MR. LYON: Yes. I'm sorry; it's in Unit A.

A (Continuing) And No. 16 is very near total depth; it may have reached there this morning.

Q Now, under your arrangement whereby these units participated in the drilling of all the wells below 9000 feet, subsequent to 1968, did that put the E/2 of Section 5 in the participating area for the Morrow formation?

A No.

Q It did not?

A It did not.

Q Okay.

A It affected only the working-interest owners, and those which were committed to the unit.

Q The working interest which was committed to the unit?

A Right.

Q That does participate?

A What does?

Q The E/2 of Section 5; that is to the working interest?

A The interests -- yes, as to the working interests that is committed to the unit it does participate. Now, since the inception of this participating area, Continental Oil Company has paid all of the -- we paid our expenses as if all of the E/2 of Section 5 was committed to the unit.

Q Did all of the working interests participate as to Section 5, the E/2 of Section 5, including those that were mentioned by Mr. Hinkle this morning as being committed to the unit, Thompson and Clark?

A Oh, yes.

Q Now they have participated in --

A (Interrupting) All interests which were committed to the unit, which comprises 78-plus percent, has participated in production from that unit.

Q Would you refer to Exhibit No. 2 and identify that Exhibit, please?

A Exhibit No. 2 is a plat showing the area of the Bell Lake Unit as it exists today, after it was contracted as I previously testified. It shows participating area A to the north, which we sometimes call the North Area --

Q (Interrupting) You mean B do you not?

A B, I'm sorry. (Continuing) And, participating area A, which we refer to as the South Area. It shows, by the blue outline, the participating area which was established for the Atoka formation as a result of Well No. 4. This area consists of the S/2 of Section 31 and all of Section 6. Well No. 4 is shown by the blue circle.

By the red outline it shows the participating area which was approved for the Morrow formation as a result as the drilling and completion of Well No. 14, which is shown by the red circle. That participating area consists of the SE/4 of Section 31, S/2 of 32, all of

Section 5 and the E/2 of Section 6.

Now, these participating areas apply to royalty interests only because the working interests were fixed by virtue of the 1968 operating agreement which, in effect, pooled the entire nine sections.

Q Now, how many wells have been drilled in the south area by working-interest owners, and how much has been invested in this project?

A Continental has drilled five wells below 9000 feet in the South Area and is currently drilling the sixth. These wells are Well No. 1 and 1-A in Unit N of Section 31, No. 4 in Unit F of Section 6, No. 5 in Unit G of Section 1, No. 14 in Unit F of Section 5, and the well that is currently drilling, No. 16 in Unit A, Section 7.

Our records are somewhat confusing because this development has taken place over the past 21 years, and as best I can determine, Continental Oil Company has spent $6,700,000 on these wells, and of this amount the working-interest owners have paid their proportionate share of slightly more than $4,900,000. Now this goes back to the negotiation with the working-interest owners to attempt to get them to pay their share of the

costs of wells which have been drilled up to the formation of this unit. The difference between those figures is the amount which Continental was not reimbursed for.

Q Do you have any figures on the pay-out of these wells, Mr. Lyon?

A Yes, sir. The best information that I can gather on this comes from our pay-out statement. The latest statement we have is of the end of 1974. I'm referring to Exhibit No. 3.

Q Exhibit No. 3?

A Yes. Exhibit 3 shows the pay-out status of each of these wells as best we can determine from our pay-out statement. Now, I would like to explain that this pay-out statement is based on Continental Oil Company net, and the figures which are shown at the top portion, where it says, "Conoco, 100 percent," are the actual figures which I took off the pay-out statement.

Now, since Wells 1-A and 4 were in the Devonian participating area, the accountants, in their inimitable manner, have lumped the costs of that participating area. When Well No. 1-A was plugged back from the Devonian, they started that well out brand new fresh, but they left all of the costs and so forth under Well No. 4. So, the costs

shown in the first column there under Well 1-A are the costs of the plug-back and recompletion in the Morrow. No. 4 includes the costs of drilling both 1-A and 4 in the Devonian, and the costs of plugging No. 4 back to the Morrow. No. 5, if you look under the fourth item, "Retirements," contains the figure in there of over $1,500,000. The accountants evidentally -- I can't say that this is absolutely true -- but, I've talked to our accountants as recently as yesterday afternoon and they tell me that they believe that this is true: That the costs that we were unable to recoup from the expenses of drilling the other wells, Well No. 1, the blow-out in No. 4, and so forth, were dumped in this account as retirements. I have added up all of those costs, revenue and so forth, in the column that is headed "South Area." This is just a sum of those four accounts. Now, in trying to get back to where the working interest owners,other than Continental Oil Company, stand in this matter, the second section is utilizing the same data, changing the Conoco net to the working-interest owners gross, and eliminating those charges which are borne 100 percent by Continental Oil Company, such as the bonus costs and retirements, so that this is an

accounting, as best we can determine right now, subject to accounting adjustments, that the working-interest owners stand in this unit today. Not today, but as of the end of 1974.

It indicates, if you will look at the pay-out item under "Working-Interest Owners," about 2/3rds of the way down the column, that this area was paid out with the exception of $54,859.

Q In this connection, Mr. Lyon, to you knowledge did Continental ever have an inquiry from Texas West Oil and Gas Corporation as to the status of pay-out of these wells?

A No, not to my knowledge.

Q What is the status of the uncommitted interest in the South Area?

A There are three tracts in the South Area which have been uncommitted interests: Tracts 68 and 72 have 75 percent and 21.375 percent respectively uncommitted interest, and Tract 70C has 10 acres of undivided interest, which is not committed. At the time that this participating area went into effect, Continental Oil Company had all interests under Tracts 68 and 72 under lease. At that time we had to make a decision as to

whether to commit the total acreage or whether to commit just the net acreage, and I did not make the decision, but evidentally the decision was made to commit the gross interests so that if those mineral interests chose to commit their interests to the unit, they could do so without disrupting the ownership of all the other people in the unit, and hoping, of course, that they would bring their interest in and commit it to the unit.

Now, since that date, Continental Oil Company has been carrying this interest at its own 100-percent expense, and as to the ten acres which were not committed under Tract 70C, the working-interest owner was the one who declined to put that interest in and therefore we netted that Tract. It is a 40-acre tract. We deducted the 10 acres that was not committed so that Tract is committed as to 30 acres only.

Q Turning back for a moment to Exhibit 3, you have an item there called "Non-Consent Penalty." What does that signify?

A Well, the unit agreement has two provisions for treating people that don't pay their bills or don't consent to the drilling, and so forth. Section 7 provides for charging interest at the rate of 6-percent per

annum for people who don't pay their bills. Section 11 provides for a 50-percent non-consent penalty for any working-interest owner who fails to approve the expenditure of drilling or recompleting the well. So, what I have done is to accumulate all of the expense and investments, etc., for all of the wells which are shown on this Exhibit, and then apply 50-percent to it, which is what is represented by the non-consent penalty.

Q Now, what will be the effect of granting this Application in regard to the owners in the South Area?

A Well, the working-interest owners have pooled their interest in nine sections of land, and this proposed proration unit is approximately a half section, or approximately 1/18th of the total area, which is about 5-1/2 percent. The drilling of a well for the interests of the owners in this half section would permit those people to participate 100-percent of the production rather than in 5-1/2 percent, and this would permit them to participate in an exaggerated degree in the production from the reservoir, which has been developed, discovered, etc., by the efforts and risks of the working-interest owners who have committed their interest to the unit. We consider this to be a very serious violation of our

correlative rights and the rights of those who have entered into the communitization agreement. As to the royalty owners, the participating area consists of nine quarter sections, which include the E/2 of Section 5, which consists of two quarter sections. The participating area, which has been approved, permits the owners of the E/2 of Section 5 to participate on an equitable basis from production from the Morrow formation within this area. The granting of this Application would unjustly enrich the uncommitted royalty interests and deny royalties to the royalty owners who have committed to the unit agreement.

I might point out that five of the quarter sections in the participating area are state lands, two are federal lands, and then, of course, the remaining two are the fee lands represented in the E/2 of Section 5. Really to protect our correlative rights in here it would be necessary for us to drill a well on every half section of land within the productive area of this reservoir in order to protect our correlative rights, which takes us right back to the law capture which this Commission has been trying to eliminate through its efforts to support communitization and protecting

correlative rights and preventing waste.

Q In your opinion, would that defeat the purpose of communitizing this area?

A Well, it certainly would, plus the fact that I think that it would cause a very serious question of economic waste in the drilling of unnecessary wells. I think the quality of Well No. 14 very amply demonstrates that it isn't necessary to drill a well on each half section of land in this reservoir, and we so stated in our application for approval of the participating area.

Q This participating area was approved by this Commission, is that correct?

A Yes, it was.

Q What do you recommend the Commission do in this case to prevent waste and to protect correlative rights?

A Well, it would be my recommendation that they deny this Application for forced pooling. I think it's perfectly obvious that the Applicant has a remedy which is readily available to them, which is to commit this interest to the unit.

Q Do you feel that the unit has proved up their acreage?

A I don't see how you can prove it up any better.

Q In that connection, what would you say as to any risk factor to be allowed in the event that the Commission does enter an order approving this E/2?

A If you want to talk about risk, I'd like to talk about the risk that Continental Oil Company and the other working-interest owners have taken in developing this to the tune of some $6,000,000, in our case, and we have drilled a well just about as close as you can get to their interest to their land. So, if there is a Morrow well anywhere in New Mexico that could be drilled without risk, this is the well.

Q How can the uncommitted interest of the South Area participate in unit production on a fair and equitable basis?

A Well, they have had an opportunity over the years to commit their interest to the unit. Referring back to Exhibit No. 3, the right-hand column shows the share of expenses in the past which would be attributable to those interests that Texas West represents here.

Q Do you feel that the penalty applicable under the terms of the unit agreement should be applied to this interest in the event that it does join?

A Well, I think this is much more equitable than what they propose in regard to the well they propose, where they recommend that the full-risk penalty be applied when actually we took the risk. I don't intend to recommend to my management that we penalize them to the extent of 200-percent, but I do think it is appropriate that they be penalized 50-percent, or we could go to the 6-percent interest on the money, which, according to my figures, would amount to some $3,500,000; considerably more than the amount that we propose here. I would like to point out that this unit has been operating in the red for 20 years, and if you will look down here at the bottom, the pay-out status, this unit is almost paid out. By this time it should be paid out. It has a revenue stream of approximately $250,000 per month, which by October of this year, according to our projected income, the Applicants in this case could participate in the revenue stream at no risk whatsoever. Now, these figures do not include the cost of Well No. 16, which will cost approximately $1,000,000; probably a little bit more than $1,000,000. As I say, that well should be at or near total depth this morning. Their share of that well would be approximately $12,000.

Now, this is opposed to their investment of $1,000,000 for a well that -- of course, they'll be getting, until payout--if the working-interest owners should go non-consent, and I feel that they would--they would be getting 100-percent of the stream to pay-out, but they would be risking $1,000,000, and certainly they would have to account to us for revenue at the pay-out for those interests that they do not own. I don't see how they could refuse to join the unit under that set of circumstances.

Q Now, you're talking about a cost of $1,000,000. Do you consider this well-cost estimate of $943,000 somewhat optimistic?

A I think it is pretty optimistic. We drilled No. 14 a little bit less than that, but that was a year ago, and costs are going up every day. Our No. 16 has been supplemented and I think we project that well to cost more than $1,000,000, but their figure is pretty close to a million.

Q Now, what about their cost of supervision at $1600 per well per month?

A Well, this is certainly more than we charge, that we are authorized to charge under the operating

agreement. I don't believe that I brought with me the current drilling supervision charge on that.

Q Does that change from time to time under the provisions of the operating agreement?

A Well, we change the accounting procedure under an amendment, I believe in 1969, where we use the COPOS 1962 accounting procedure and those overhead rates escalate in proportion to the cost of living factor -- I'm not sure exactly what goes into it -- it does escalate each year, or go down -- I've never seen it go down, but it could go down if the cost of living goes down.

Q On the basis of this escalation clause would you consider the overhead charges and supervision charges to be comparable to current charges?

A Well, they are considerably in excess of what we are authorized to charge.

Q I mean yours; do you consider them current?

A Yes, I think ours are current. As I say, I don't have the ones that apply in the Bell Lake Unit now; I would estimate that they are somewhere around $1000 or $1100 a month. Now, as far as the producing well supervision, we currently are charging $142.72 per well per month, and I think that considering the fact that we've

got laboratory facilities and a large staff of technical experts to offer to the non-operating interests, that we should be able to charge at least as much as anybody else and probably more because I think we have more to offer.

Q Mr. Lyon, have you made a calculation of what Texas West Oil and Gas would have to pay in order to participate in the unit at this time?

A Well, I have -- it depends on when they would be committed. As best I can figure -- now, our accounting statements are current to the end of 1974; the past 8 months are distributed quarterly and we should, within the next few days, receive the pay-out status at the end of the first quarter, 1975, and the figures that I have shown at the bottom on the right-hand side, are my best approximation of what their pay-out status would be. At the end of the second quarter it would appear that they would have to pay $11,179 plus the cost of Well No. 16, and there are also some charges that are being accumulated in attempting to recomplete Well No. 5 to the Atoka, which I have not included in here.

Q Let's assume that Texas West started drilling by July the 1st. You say the well would cost approximately

$1,000,000; how soon would it be producing do you think?

A Well, unless they know some drilling techniques that our people don't know, there is no way they can have that well producing before the end of the year, and it would be more likely to be about the first of March. Then they would need to contract for the gas and get a gas connection, and I would imagine it would be the first of May before they could have that well producing. Let me go back to your previous question: I was doing some calculations last night, and if their commitment were to be effective the first of July, I estimate that the amount of money they would have to pay would be approximately $25,000.

Q Now, how soon, on that basis, would they commence participating in the production from the unit?

A Immediately.

Q Do you have anything else to add, Mr. Lyon?

A I don't believe so.

Q Were Exhibits 1, 2, and 3 prepared by you or under your supervision?

A Yes they were.

MR. KELLAHIN: At this time I would like to offer in evidence Exhibits 1, 2, and 3.

LYON-CROSS

MR. STAMETS: Without objection they will be admitted.

(Whereupon, Continental Oil Company's Exhibits Nos. 1, 2, and 3 were admitted into evidence.)

MR. KELLAHIN: That is all we have of this Witness.

MR. STAMETS: Any questions of the Witness?

MR. HINKLE: Yes, sir.

CROSS EXAMINATION

BY MR. HINKLE:

Q I don't know whether I understand all that you mention in regard to these participating areas. In Exhibit 1, that shown in red, is the participating area for the Devonian formation?

A That is correct.

Q Now, over here on Exhibit No. 2, you have in blue that, I take it, is the participating area for the Atoka formation?

A Right.

Q And that which is shown in red for the Morrow formation?

A Yes, sir.

Q Now, I believe you testified that you have Atoka, Bone Springs, Devonian, and Morrow. What about Bone Springs; was there ever a participating unit for Bone Springs?

A Yes. There is a participating area for the Bone Springs. It consists of the NW/4 of Section 6 and the S/2 of Section 31; it is all on state lands; it is all outside of the confines of our working-interest owner operating agreement; it is all 100-percent Continental Oil Company's, and it is in the red.

Q Now, when you completed the well in the W/2 of Section 5, at that time what constituted the Morrow participating area?

A I'm sorry; I didn't understand you.

Q When your Well No. 14 was completed in Section 5, or prior to that time, what constituted your Morrow participating area?

A There was none.

Q There was none? In other words, you didn't create the Morrow participating area until Well No. 14 in Section 5 was completed, is that right?

A I don't believe we can do that, Mr. Hinkle. As you well know, dealing with the Federal government

you can't very well form a participating area until you have a commercial well.

Q Well, none of these other wells were producing from the Morrow?

A Yes, they are producing from the Morrow.

Q Well, weren't they completed before 14?

A Yes, they were, but they are non-commercial.

Q They are all non-commercial in the Morrow?

A Yes, sir.

Q I see. Now, when you completed Section 14, what was your recommendation as unit operator, that is Continental, to the USGS, that would be included in the Morrow participating area?

A The area which is shown.

Q All of it?

A Yes, sir.

Q There was one remark made here that all of your royalty owners, I believe, did not participate in the Morrow participating area, is that right?

A Yes. There is a difference in the participation of the royalty interests and the working interests because of the supplemental operating agreement which was entered into by the working-interest owners whereby

they pooled all of their interest in this nine sections comprising the South area. Now, this does not apply to the royalty interest because they were not a party to this thing and because the USGS does not operate that way. The royalty owners -- the royalty interests are paid on the basis of participating area, if there is a participating area which is formed when a commercial well is drilled. If it is non-commercial then the royalty is paid on the lease on which that well is located.

Q That's right, but now, are the committed mineral owners, or royalty owners in the E/2 of 5 participating in Well No. 14?

A They are not yet. What I mean is they are not receiving revenue to this time because the division order has not been completed. They should have been mailed out last week I believe. We could not prepare the division orders until the participating area had been established, and that being established, then we can construct the division order. When those division orders are signed, those people will be paid for all production from No. 14 from its inception.

Q Now, has the Morrow participating area been

approved by the USGS?

A Yes, sir, it has.

Q Has it been approved by the Oil Conservation Commission?

A It is completely approved.

Q Now, you said that under your present operating agreement you're getting $142 a month for supervision?

A Yes, sir.

Q You have reference to the one that was entered into in 1953, do you not?

A As amended by the working-interest owners in, I think it was,1969. The original accounting procedure was the El Paso form, which did not provide for escalation. It did apply for allocation of district expense and this sort of thing.

Q Now, you know as a matter of fact that the operating agreements entered into currently are a lot more than $142 for supervision, isn't that true, generally in the industry?

A We currently are authorized to offer to other people in areas that we operate, or to accept from people in areas that we do not operate $175 per well per month, but the $142 is what we are currently receiving for the

wells that we operate in the Bell Lake Unit.

Q Now, as far as the supervision during drilling of a well that is usually put in accounting procedure, it depends largely upon the depth of the well, does it not?

A In some cases, not always.

Q Now, isn't it a fact that under present conditions, because the costs may have gone up and all, inflation, that $1600 is about the current price for a drilling well?

A I'm sorry that I didn't bring that data with me; I do have data in my office that does give what we're authorized to offer and to accept, and this is probably in the ball park; $1500, something like that.

Q Now, I believe you mentioned there that simply because this acreage is not committed that that shouldn't be taken into consideration at all; that their rights should be disregarded. Now, isn't it a fact that their --

MR. KELLAHIN: If the Commission please, I object to the form of the question. I don't recall that the Witness testified to any such thing as that.

MR. HINKLE: He did.

MR. KELLAHIN: To disregard the interests? I object.

BY MR. HINKLE:

Q Well, let me ask this, isn't it a fact, Mr. Lyon, that in forming these units, often-times there is acreage that is not committed?

A Well, it must be; we haven't missed in this unit.

Q But you know,as a matter of fact,that you'll find this in quite a few units?

A Yes.

Q And doesn't the unit operator, or those that are involved in the unitization, run the risk that there might be a well drilled on that non-committed acreage?

A Well, the operator has an obligation to look at the interests of the people that they have committed also, and if you look at the rights of the people who have not committed, and respect their wishes and don't do anything, you are penalizing the people that have committed. So, if you are going to develop under your obligations as a unit operator, then you must go ahead and you have to assume certain risks. We have done this.

Q I have forgotten exactly the form of his answer,

but in substance it was that this is putting Continental to an unusual risk because of non-committed acreage. Now, isn't it a fact that if you are draining non-committed acreage that correlative rights are being violated?

A I don't see how they could be, at least not as long as we were operating in the red.

MR. HINKLE: Well, I don't think that that has anything to do with it at all. As a matter of fact, I would like to move at this time that all of Mr. Lyon's testimony be stricken relating to the history of the Bell Lake Unit; that has nothing whatsoever to do with this Application before the Commission. The fact that they have run in the red for 20 years doesn't make one iota of difference here as to whether or not a well on this non-committed acreage would pay out or have anything to do with it. It is just not material to this case and I move that it all be stricken.

MR. KELLAHIN: If the Commission please, I think it is quite material to this case for several reasons: In the first place, it shows the risks and expense of the working-interest owners with the exception of some 5-1/2 percent of the unit, who've assumed, in developing this acreage and proving up the small

interest that exists in the E/2 of the section. In addition to that, the testimony is material in showing the amount that it would now cost them to join the unit and participate in unit production on the same basis as all the other working-interest owners and how soon they will be able to derive revenue from that contribution, which will be immediately. For that reason we feel it is material to the case and certainly should not be stricken.

MR. HINKLE: The law under which we are working here provides in effect that anybody who has a right to drill can go ahead and ask that a drilling unit be formed by pooling, and that's all in the world we are doing here.

MR. KELLAHIN: If the Commission please, Mr. Hinkle is anticipating my closing statement. At this time I would move that the Application of Texas West Oil & Gas Corporation be dismissed for the reason that it is a collateral attack upon the order of this Commission, being Order No. R-355, which approved the Bell Lake Unit area and made a finding that the unit agreement plan is approved as a proper conservation measure; that it would protect correlative rights, and granted any

(Reading) party owning rights in the unitized substances who does not commit such rights to said unit agreement before the effective date thereof may thereafter become a party thereto by subscribing to such agreement. (End of reading.)

In addition to that, the formation of the south participating area was submitted to and approved by this Commission. In effect what we are really saying is that the Commission either believes in communitization or it's going to allow us to form a unit and let those within it -- within the unit boundary I'm talking about -- come in and drill wells to the detriment of the unit which the Comission has approved as a proper conservation measure. For that reason we think that the entire Application is improper and should be dismissed.

MR. STAMETS: Let me act on the first motion here. Mr. Hinkle, your motion is denied. I feel Mr. Kellahin, as though your motion is somewhat premature at this time and we will entertain it later.

MR. HINKLE: Would you like to hear my answer to it now?

MR. STAMETS: Why don't we wait until the appropriate time.

(Whereupon, a discussion

was held off the record.)

BY MR. HINKLE:

Q I believe you testified, Mr. Lyon, that your Well No. 14 certainly proved up the acreage, the E/2 of Section 5 here, for the Applicant and that there is no risk factor. Now, if there is no risk factor, why are the other several wells that you drilled to the Morrow there non-commercial wells?

A Those wells are farther away from 14 than your lease is.

Q You've got two right here together in Sections 31 and 6. They are pretty close together aren't they?

A Yes, they're pretty close, but referring to your own structure map that you introduced, the structure, according to your interpretation, goes up to the east and it looks like you might want to crowd the east line rather than the west line. I think you have a reason for crowding the west line and I think it's so you can get as close as you can to our well.

Q Well, isn't it true that we have a right to drill anyplace we want to so long as it's a standard location?

A You're right, provided you have the right to

drill.

Q The risk involved when you drilled the one in 31 and in 6 is just as great as when you drilled 14, was it not?

A Yes, it was. The purpose of my testimony was to show a comparison of the risks involved and what we have assumed in drilling these wells and what you are assuming, and if the Commission feels that a forced pooling is proper in this case, we believe that it would be proper for a no-risk penalty to be assessed because we believe that we have taken the risk.

Q You certainly did, and you lost when you drilled all these dry holes and non-commercial wells.

A That's true. We don't believe there is any need to drill the well that you're proposing because that area can be drained by the wells that are presently producing in the unit.

Q In other words, you would suggest that the Applicant join the unit on your terms?

A I don't see anything wrong with our terms; I don't see how you can beat a deal like that.

MR. HINKLE: That's all I have.

MR. KELLAHIN: That's all I have.

CROSS EXAMINATION

BY MR. STAMETS:

Q I don't believe that it has been brought out at this point exactly what territory we are talking about as being non-committed, whether it's a specific quarter section, quarter quarter section?

MR. HINKLE: It's 7/32nds.

MR. STAMETS: 7/32nds undivided interest under the E/2 of Section 5; 7/32nds undivided.

BY MR. STAMETS:

Q Now, if I understand your testimony correctly, what you are saying is that the most economical way to protect the interests of the owners, all of the owners in the E/2 of Section 5, would be for the 7/32nd interest to participate in the unit.

A Not only the most economical but the most equitable and the most feasible way of protecting their rights.

Q Now, a part of your testimony that I was not really clear on, when you discussed the inequities that would result from a granting of the Application in this case. Assume for the moment that a well were drilled in the E/2 of Section 5 under a forced-pooling order and the

well was a very good well and it paid out rapidly; there was a lot of extra money laying around. Would the 25/32nds that is now committed to the unit share unequitably compared to the rest of the unit in the production from this well?

A Yes, I think very definitely it would.

Q In other words, the 25/32nds interest in this well would not be attributed to this nine section working-interest unit that you have but would be attributed only to the E/2 of Section 25?

A Correct, if I understand your question.

Q Whereas if all of this acreage were committed to the unit, and you should subsequently drill a well on it, then the production from the E/2 of Section 5 would be attributed on the basis of your working-interest agreement to the full nine sections?

A Right.

Q Now, there was some testimony concerning the reasons behind the formation of the unit. I gathered that what you said was that the reason the unit was approved was to keep development to a minimum in here and I'm not certain that that's what you meant.

A No, I don't believe I said that. Of course,

the reason for unitization is that it allows flexibility of developing a reservoir or a series of reservoirs on that spacing which is most efficient for draining that reservoir regardless of ownership within the unit. It eliminates the necessity of drilling unnecessary wells and it protects correlative rights.

Q Have any special Morrow pools been proposed or adopted for the pool discovered by this well or the pool that this well is located in?

A Not as such. There has been some change in the pool nomenclature in here and at times that nomenclature was considered -- for some reason the Commission proposed 150-acre spacing units, and we requested that this be changed to conform with the statewide spacing units for Pennsylvanian and deeper formations at 320 acres. So, essentially it is operating under statewide rules.

Q Getting back to the 7/32nds undivided interest in the E/2 of Section 35, we discussed what would happen to the remainder of this interest under the two situations, and the same thing would be true of the 7/32nds, would it not, in the case where the forced pooling occurs then they would receive their full 7/32nds interest of the

production, whereas if they joined the unit, then their interest would be diluted by sharing with the other nine sections?

A That's correct. They would be on the same basis as everybody else.

MR. STAMETS: Are there any other questions of this Witness?

MR. HINKLE: Yes, sir.

FURTHER CROSS EXAMINATION

BY MR. HINKLE:

Q What was your pipeline connection on the Well No. 14, Section 5?

A It's connected to Trans Western Gas Pipeline Company.

Q How long has it been connected?

A It began production in August of 1974.

Q Now, how does your total income from that well compare with all the rest of the income from the unit.

A It contributes approximately half of the income.

Q Half of all the income of all the other wells?

A Yes, sir.

MR. HINKLE: I think that's all.

REDIRECT EXAMINATION

BY MR. KELLAHIN:

Q Mr. Lyon, I would like to clarify the questions that Mr. Stamets was asking you about the 25/32nds in their participation if a well were drilled in the E/2 of the section. Actually, 25/32nds is participating in the unit production at the present time, is it not?

A Yes. They will, as soon as the -- the working interests are participating now. The royalty interests will be paid on that basis, on the basis of the participating area, as soon as the division order is completed.

Q The 25/32nds is based on the 9-section unit and the royalty is based on the participating area as outlined on your Exhibit No. 2, isn't that correct?

A Now, I'm not sure that I understood you there, Mr. Kellahin.

Q Well, the 25/32nds working interest participates under the unit-operating agreement?

A Yes.

Q And that covers the nine sections?

A Yes.

Q And the royalty interest would participate in the production from the participating area outlined in

red on your Exhibit No. 2?

A That is correct.

Q So they are on a different basis?

A Yes.

MR. KELLAHIN: That's all.

RECROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Lyon, to your knowledge, does the Applicant have the right to drill a well on the E/2 of Section 5?

A Well, I think you are asking me a legal question in there, and I would just prefer not to answer it because my opinion probably wouldn't stand up very much.

MR. STAMETS: Thank you. Any other questions of this Witness? He may be excused.

MR. KELLAHIN: That's all we have, Mr. Stamets.

MR. STAMETS: I would like to direct the question that I just asked Mr. Lyon to either the first Witness, Mr. Dunnavant, or to the attorneys.

MR. KELLAHIN: I think we will have different opinions.

MR. HINKLE: I want to put Mr. Dunnavant back on the stand, but I will answer your question first. Legally we do have a right to drill and that is the basis on which this Application was filed.

MR. KELLAHIN: Mr. Stamets, I'm assuming that they do have a working interest in here as so testified; we have no reason to quarrel with that. We say that they do not have a right to drill because, as I previously stated, this constitutes a collateral attack to the unitization order and its approval of the participating area as entered by this Commission.

MR. HINKLE: Since you've injected that, let me answer to that. The approval of the unit agreement does not in any way have anything to do with non-committed acreage; it cannot have. All it does is approve the unit as a conservation measure. It cannot take away any right as far as non-committed acreage is concerned, so it cannot be a collateral attack on the order; it just doesn't cover it. That's all there is to that.

MR. STAMETS: Did you wish to recall Mr. Dunnavant?

MR. HINKLE: Yes, if you please.

(Whereupon, Mr. Dunnavant is recalled.)

FURTHER EXAMINATION

BY MR. HINKLE:

Q You have heard the testimony of Mr. Lyon in regard to their proposition for joining the unit. Can you explain why you do not want to join the unit?

A I think they have adequately explained it already with their own testimony. They have shown that they have been drilling in this unit for 20 years; they've expended "X" number of dollars; they have burdened the working-interest owners in their proportionate part of their costs in drilling this and recouping it under various means, and they have drilled -- I don't know really how to interpret this map -- but I think in the order, as I gathered here, five Morrow wells, one of which is commercial. Anyone participating in a project like this, to me, it is just uneconomical. I think unit projects, unless they are very closely guarded and very carefully ascertained are really unfair and inequitable. Now, here we are talking about a well that is contributing 50-percent of the income from the total nine-section area. That was his statement. I can readily see why they would

not want to drill another well over there and get 70 acres to participate in it on a standard proration unit basis. We feel, of course, that even though this well is close to our boundary lines, and very probably draining us, that the amount of money already expended in here just shows you the risk involved, and we, of course, think that it is highly inequitable that they should drain our 70 acres here and not give us a chance to protect our own rights.

Q How would you come out, economically, balancing one against the other, by joining the unit on the terms that they have suggested and by drilling this well, assuming you got production.

A I haven't really figured out the X number of dollars, because I don't know what is involved. He gave us a figure a while ago I think, and I don't recall the figure, but we would lose in the ratio of probably 5 to 1; I don't know; something like this.

Q Do you have anything else you want to present to the Commission?

A No, sir, I don't.

MR. HINKLE: That's all.

MR. KELLAHIN: One further question.

FURTHER EXAMINATION

BY MR. KELLAHIN:

Q Did you ever inquire of Continental Oil as operator what it would cost you to participate in this unit?

A No, I did not.

Q Mr. Dunnavant, you have sold some wells you have drilled on Exhibit No. 1, your Federal 9 No. 1, State 2 No. 2, and State 35 No. 1. Do you consider those wells to be commercial wells?

A They're making us money, yes, sir.

Q They are commercial wells?

A They're making us money. Right now we consider them commercial, yes.

Q Right now?

A Yes, sir. And they will be commercial. The No. 2 Well, the two No. 2s paid out in 11 months.

Q What is the cumulative production on the Federal 9 No. 1?

A I do not have any cums with me, Mr. Kellahin.

Q On any of the wells?

A No, sir, I don't, except to know that the No. 2 Well paid out at approximately -- now it may have been

12 months; the No. 3 we figure is going to take -- the 35 No. 1, excuse me -- is going to take probably two-and-a-half years to pay out.

Q And when did you get a connection on that 9 No. 1?

A We got a connection -- on the Federal 9 No. 1?

Q Yes, sir. You said that it paid out in 12 months?

A No, it was No. 2.

Q The No. 2 Well?

A Yes, sir. So, the No. 2 Well, which is located in the S/2 of Section 2. The Federal 9 No. 1 should pay out in less than three years.

Q It has not paid out yet?

A We just got on the line.

Q And how about your 35 No. 1?

A It will pay out in less than 3 years.

Q So neither one of those two have paid out yet?

A No. They haven't been on the line long enough.

Q What was the calculated open flow on those three wells?

A We have this on Exhibit No. 1. The 35 No. 1 --

Q (Interrupting) You're referring to your

Exhibit No. 1?

A Yes, sir. (Continuing) 5.1 million. We are now recompleting the State 2 No. 1, which is in the N/2 of Section 2. The Atoka, potential for 4.1 million in the State No. 2 Well --

Q (Interrupting) Let's talk about the Morrow.

A The Morrow, excuse me, potential for 4.1 million.

Q You're in the process of recompleting that well?

A No, the No. 1 northwest of that.

Q The No. 1?

A In the N/2 of Section 2.

Q You're not talking about State 35 No. 1?

A No.

Q You're talking about another well?

A I'm talking about the well in the SW/4 NW/4 of Section 2. I might add this: In the Federal 9 No. 1, there was a reentry, as I previously stated, and its calculated open flow was approximately what it will produce into the line. The well is presently making over a million cubic feet of gas per day and is constantly improving because the mud was on this well for about 10 years and did contaminate those zones. It has constantly

improved from 600,000 cubic feet of gas per day to approximately 1 million per day right now.

Q None of your wells are subject to FPC prices, are they?

A We are on the small producers certificate aspect of it.

Q And you are aware that the Continental wells are not under such a certificate?

A Well, I'm not aware of it. What --

Q (Interrupting) Well, for example, on the Bell Lake State 3 No. 5 Well, which would show a calculated open flow of 7.4 million, would you consider that a commercial well at the prices you are receiving?

A Well, we don't go by -- I was just making a point here by our Federal 9 No. 1 -- we don't consider COFs as an indicator of productivity.

Q What do you consider?

A We consider the production history.

Q Well, but you don't have that here?

A Yes, I do have it here.

Q For these wells?

A I don't have it with me but I know what they are doing.

Q Well, I asked you if you had the cumulative production and you said, "No."

A And I repeat I do not, but I know when they will pay out.

Q But you don't have that information with you?

A No, sir, I do not, I apologize.

MR. KELLAHIN: That's all I have.

MR. STAMETS: Any further questions of this Witness? He may be excused.

MR. KELLAHIN: We have no further testimony.

MR. STAMETS: Since Mr. Hinkle is the Applicant we will give him the last words.

MR. KELLAHIN: If the Examiner please, I feel in this case we are confronted with an unusual situation and one that appeals to me as being a very serious situation. We have an Applicant here who owns less than a 1/4th interest in the E/2 of Section 5, offsetting a unit well which is probably the best well, or is the best well in the Bell Lake Unit in the southern participating area.

In the first place we feel that the activities of the Bell Lake Unit have established the productive areas of this participating area and that it does include

the E/2 of Section 5. The owner of less than 1/4th interest wants to come in, that's as I would figure a 21.875 percent interest in the E/2, to drill a well in which it would participate in that ratio, whereas if it joined the unit it's interest would be something like 5-1/2 percent of the unit production.

The Witness testified when he was recalled to the stand just now that in his opinion unless units are closely guarded and carefully watched, as a unit operations are unfair and inequitable. Well, you get down then to a question of what do you mean by "closely guarded and watched." As a matter of principle, our New Mexico statutes have established that unit operations are in the interest of conservation, the prevention of waste, and the protection of correlative rights, and I think it would take somewhat more than just a statement of that nature to say that unit operations are not in the best interests of conservation, prevention of waste, and protection of correlative rights in this particular case.

Now, the Witness also said that he doesn't feel that they should be put in a position where they are not given a chance to protect their correlative rights.

Texas West, of course, has not had this acreage very long as I understand it, but the owner of the acreage has always had the opportunity of joining the unit and protecting their correlative rights and have not seen fit to do so. The letter which Mr. Dunnavant quoted from Paul Thompson, the District Manager of Continental Oil in Hobbs, invited them again to join the unit, but they do not see fit to do so.

Now, basically we have come down to the question of whether we really believe in unit operations or don't we believe in unit operations. Regardless of whether this is an attack on the order or not, this Commission did make a finding that the Bell Lake Unit and the unit-agreement plan was in the interests of conservation and would protect correlative rights, and there is nothing that has been offered to show that that is not still the case. The Oil Conservation Commission and the United States Geological Survey have both approved the formation of the participating area, which does include the E/2 of Section 5, and on that basis, except for the uncommitted 21.875 percent, it is committed to the unit. We feel that the balance should either be committed to the unit or not participate, but in no way should it be

permitted to drill a well offsetting the unit and take advantage of tremendous expenditures which have been made in exploring and developing this area.

Now the Oil Conservation Commission is pretty well dedicated to the proposition that unit operations are in the interest of conservation, and as the Examiner well knows, during the most recent legislature, the Commission whole-heartedly backed Senate Bill 262, which would permit compulsory communitization. If we can wait until that order becomes effective, that statute, that might solve the problem, but, in the meanwhile, we feel that it is not in the interests of conservation to permit the Applicant to come in and drill a well offsetting the well which has been drilled by the unit operator, which certainly proves up his acreage.

Again, in the event that the Commission sees fit to approve this Application and pool the acreage as requested, we do not feel, and on the basis of Mr. Lyon's testimony, we think we have shown that no risk factor whatsoever is indicated. If anybody is entitled to a risk factor, it is the unit operator and the owners of the working interest in the Bell Lake Unit who over the years have assumed the risk in trying to determine

just what is present in this area.

Thank you.

MR. HINKLE: Mr. Examiner, Mr. Lyon's testimony in regard to the history of the Bell Lake Unit is quite interesting, and, of course we are very sorry for them; it has been a losing proposition for 20 years. But, I don't think that gives them any right to saddle someone who didn't commit their acreage with some of the burdens which they have assumed.

There has been no law up to the one that Jason just mentioned here, 262, which requires any person to commit their acreage to a unit agreement. There have been lots of units formed in the State, approved by the Commission, in which there is uncommitted acreage, and I don't think that there is any question, legally, but what uncommitted acreage has a right to drill on that acreage at any time they want to. There is nothing that compels them to join the unit.

It is true that the development in the unit may have attributed to the overall knowledge of the area here, and may have partially proved or made it very desirable to drill the well which the Applicant wants to drill and which he has a right to drill on this 320 acres.

If he wants to spend the money and drill it, why all above the 7/32nds is going to go to the owners of the acreage; he can't keep it; it's going to go to them; he's running the risk of it and I think he has that right. But, the risk is considerable due to the fact that Mr. Lyon has testified that all of the other Morrow wells which they have drilled turned out to be non-commercial wells, and this one might be the same thing. The Applicant in this case might spend a million dollars and if he gets a dry hole, they're not going to have to pay for it. If they don't want to assume the risk with him they should be penalized. And, in our opinion, that penalty should be the greatest penalty that is permitted, which is 200-percent.

The orders, as I have already said, of the Commission approving the unit agreement, has nothing whatsoever to do with this case because it cannot approve the unit as to non-committed acreage. It just doesn't do that. I don't think the statement of Mr. Dunnavant at all was meant to be taken that we're attacking communitization generally. I think unitization has its place and is very good as a conservation measure, and I myself promoted unitization and have lots of cases up here

approving unit agreements. I think it is very desirable as a conservation measure, but still, you cannot take away the rights of non-committed acreage. They still have that right; anybody that has a right to drill on acreage should go ahead and drill. So, I don't think there is any basis whatsoever that this Commission can deny this Application simply due to the fact that the non-committed acreage is in the unit agreement. So, we respectfully request that the Application be approved and that it provide for a penalty of 200-percent.

MR. KELLAHIN: If the Examiner please, I would want to correct one statement that was made by Mr. Hinkle that anyone who has a right to drill can go ahead and drill. Under these circumstances I'll merely call the Examiner's attention to the statute governing forced pooling and the terms upon which such an order may be entered by the Commission and make no further comment on it.

MR. STAMETS: Anything further in this case? We will take the case under advisement.

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

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

Richard L. Nye
RICHARD L. NYE, Court Reporter

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 5493, heard by me on 5-27-75, 1975.

Richard L. Stamets, Examiner
New Mexico Oil Conservation Commission

THE NYE REPORTING SERVICE
STATE-WIDE DEPOSITION NOTARIES
225 JOHNSON STREET
SANTA FE, NEW MEXICO 87501
TEL. (505) 982-0386

TEXAS WEST OIL & GAS CORPORATION

DAILY DRILLING REPORTS

MADERA #1
1980'FNL & 1980'FEL
Sec. 5, T-24-S, R-34-E,
Lea Co., New Mexico

9-16-75	Allstate Construction Co. started making location
9-25-75	Allstate finished making location.
9-29-75	Executed Drlg Contract w/A.W. Thompson Drilling Company; pulling water well and repairing pump.
10-10-75	Started MIRT
10-13-75	MIRT
10-14-75	MIRT
10-15-75	MIRT
10-16-75	MIRT
10-17-75	Drlg 180' - Sand & Red Beds Made 180'/24 hrs, Bit #1: OSC3, 20", made 180'; WOB 3-5,000#, 60 RPM, PP 300#, MW 9.2, Vis 32, pH 11, Spudded @ 9:30 p.m. 10-16-75; Rotary bushing to ground level 26.30' Surveys: 1° @ 100' 1° @ 163' Daily Cost: $35,600.00 Drilling days: 1
10-18-75	TD 423' Mixing mud & lost circ material. Red Beds, Made 243'/24 hrs, Bit #1: 14-3/4", retip made 423'/31 hrs, WOB: 5-15,000#, 60 RPM, 80 SPM, PP 200#, MW 8.6, Vis 32, PH 11. Surveys: 1/2° @ 220' 3/4" @ 276' 3/4° @ 337' 3/4° @ 393' Daily Cost: $ 8,290.00 Total Cost: $43,890.00 Drilling days: 2
10-19-75	WOC @ 515' Installing BOP & GIH w/Bit #2; Hydrite & Red Beds; Made 92'/24 hrs, Bit #1 made total 515'/55-1/2 hrs, WOB 5-15,000#, 60 RPM, 80 SPM, PP 200#, MW 8.6, Vis 32, pH 11. Surveys: 3/4° @ 515' Lost circ @ 423', mixed one batch of mud; lost circ material; no returns; mixed another batch & lost circ material & obtained circ for 5 min; dry drilled 423-467'; 467'-regained circ. Ran 534' of 16", 65#, H-40 csg. Set @ 515'. Cmtd w/300 sx Halliburton Lite Weight w/1/4# Flocele, sk. & 2% CaChl

Exh. No. 7

TEXAS WEST OIL & GAS CORPORATION

DAILY DRILLING REPORTS

MADERA #1
Lea Co., N.M.

10-19-75
Cont'd

plus 600 sx Class "C" cmt w/2% CaChl. Full returns & cmt circ. Circ 50 sx to surface. Job Complete @ 5:15 a.m. 10-19-75
Daily Cost: $14,256.00
Total Cost: $58,146.00
Drilling days: 3

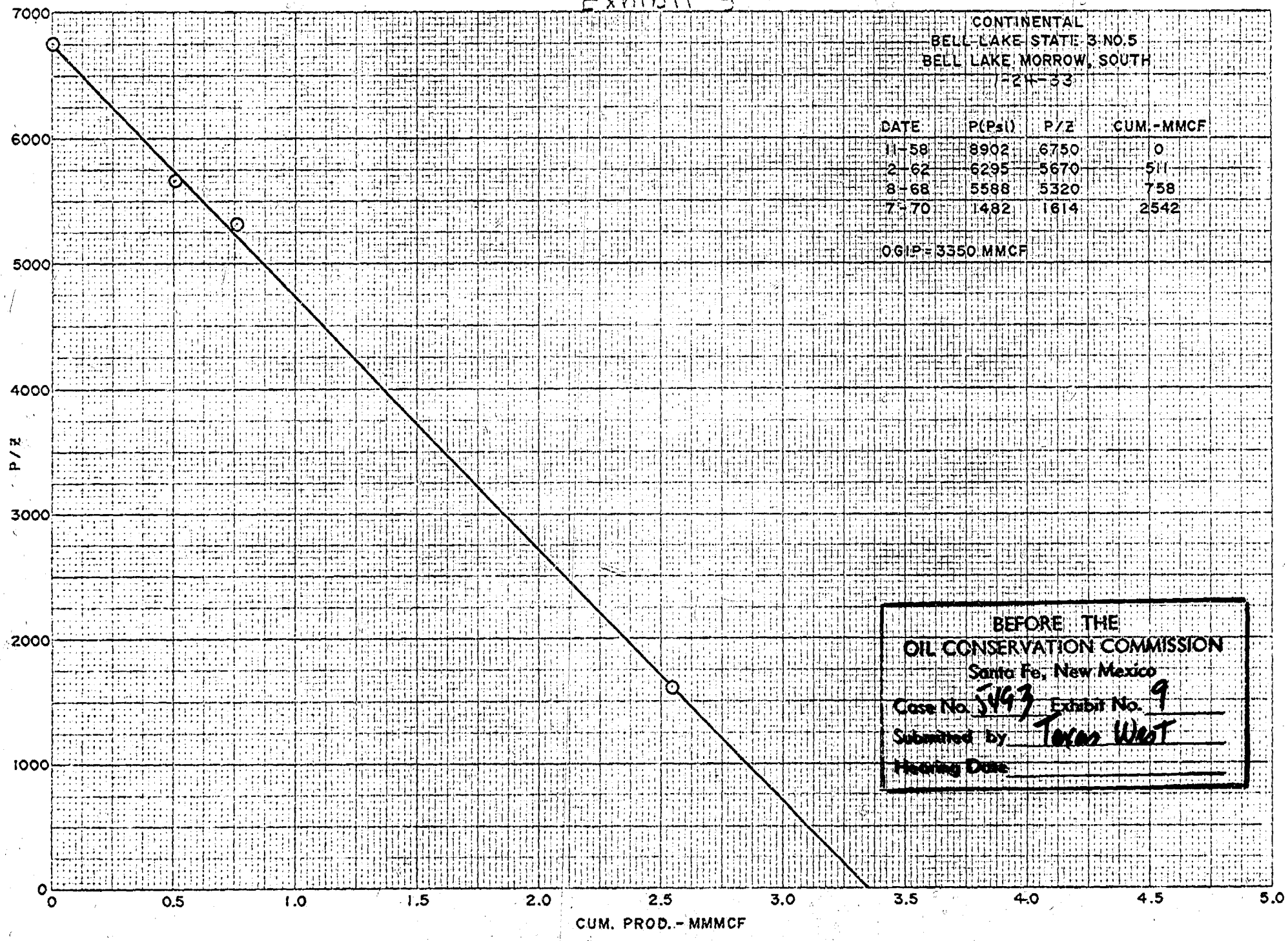
10-20-75

TD 515' Making up drlg assembly & prep to GIH to test BOP's & start drlg. Hydrite & Red Beds. WOC for 12 hrs. before cutting off csg.
Daily Cost: $ 9,650.00
Total Cost: $67,796.00
Drilling days: 4

10-21-75

Drlg 1010' Hydrite & Red Beds; Made 495'/24 hrs, Bit #2: OWB 14-3/4", made 495'/17-1/2 hrs, WOB 60,000#, 55 RPM, 67 SPM, PP 2000#, MW 9.9, Brine wtr, pH 11. Tested BOP to 750# Held OK, Drlg 6' cmt above float collar, & 40' cmt in the guide shoe jt.
Surveys: 1/2° @ 600'
1/4° @ 846'
Daily Cost: $ 4,536.00
Total Cost: $72,332.00
Drilling days: 5

Exhibit 9



CONTINENTAL
BELL LAKE STATE 3 NO.5
BELL LAKE, MORROW, SOUTH
I-21-T-33

DATE	P(Psi)	P/Z	CUM.-MMCF
11-58	8902	6750	0
2-62	6295	5670	511
8-68	5588	5320	758
7-70	1482	1614	2542

OGIP = 3350 MMCF

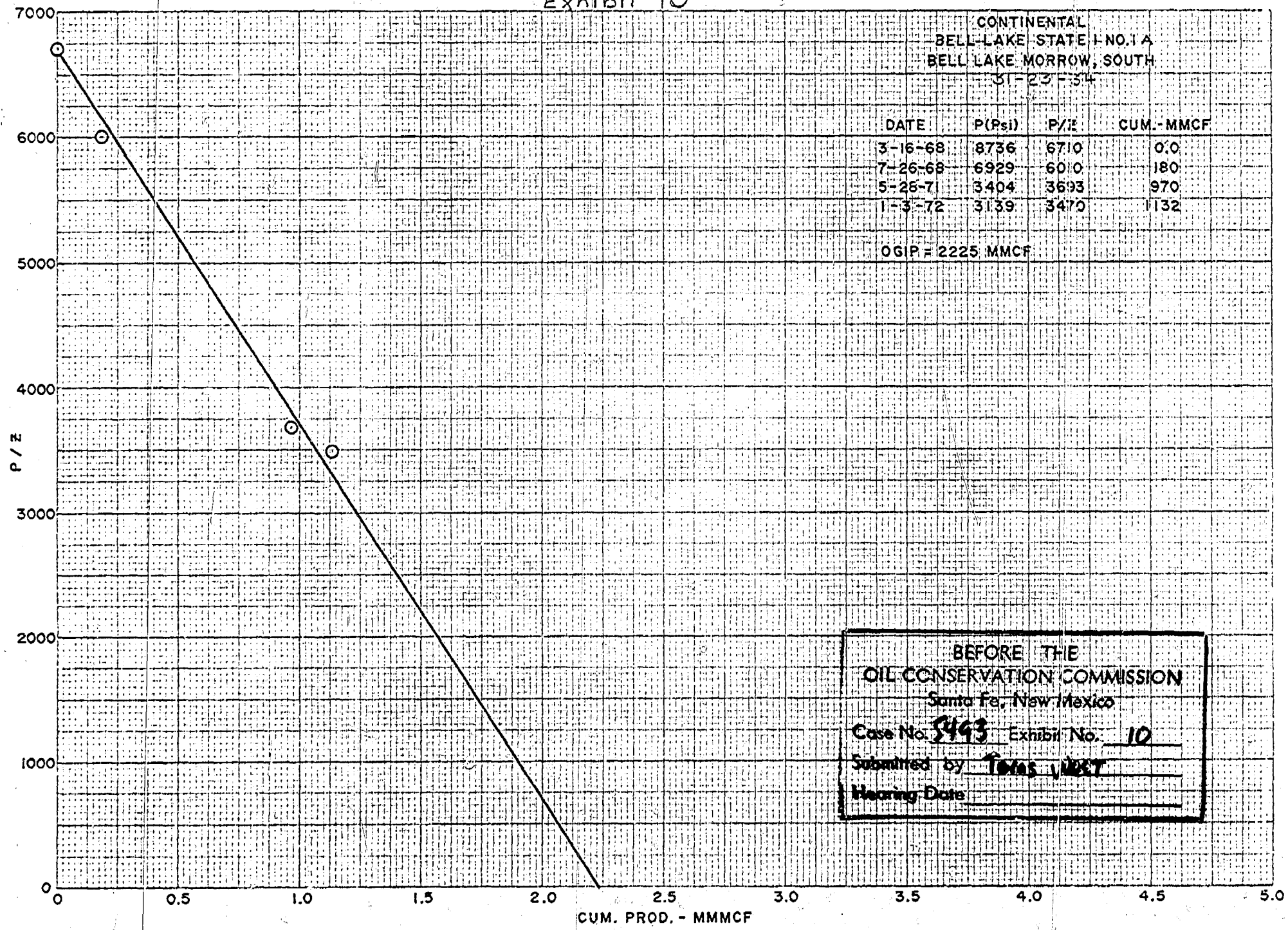
BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 9
Submitted by Texas West
Hearing Date

Exhibit 10

CONTINENTAL
BELL-LAKE STATE I-NO.1 A
BELL LAKE MORROW, SOUTH
31-23-34

DATE	P(Psi)	P/Z	CUM.-MMCF
3-16-68	8736	6710	0.0
7-26-68	6929	6010	180
5-26-71	3404	3693	970
1-3-72	3139	3470	1132

OGIP = 2225 MMCF

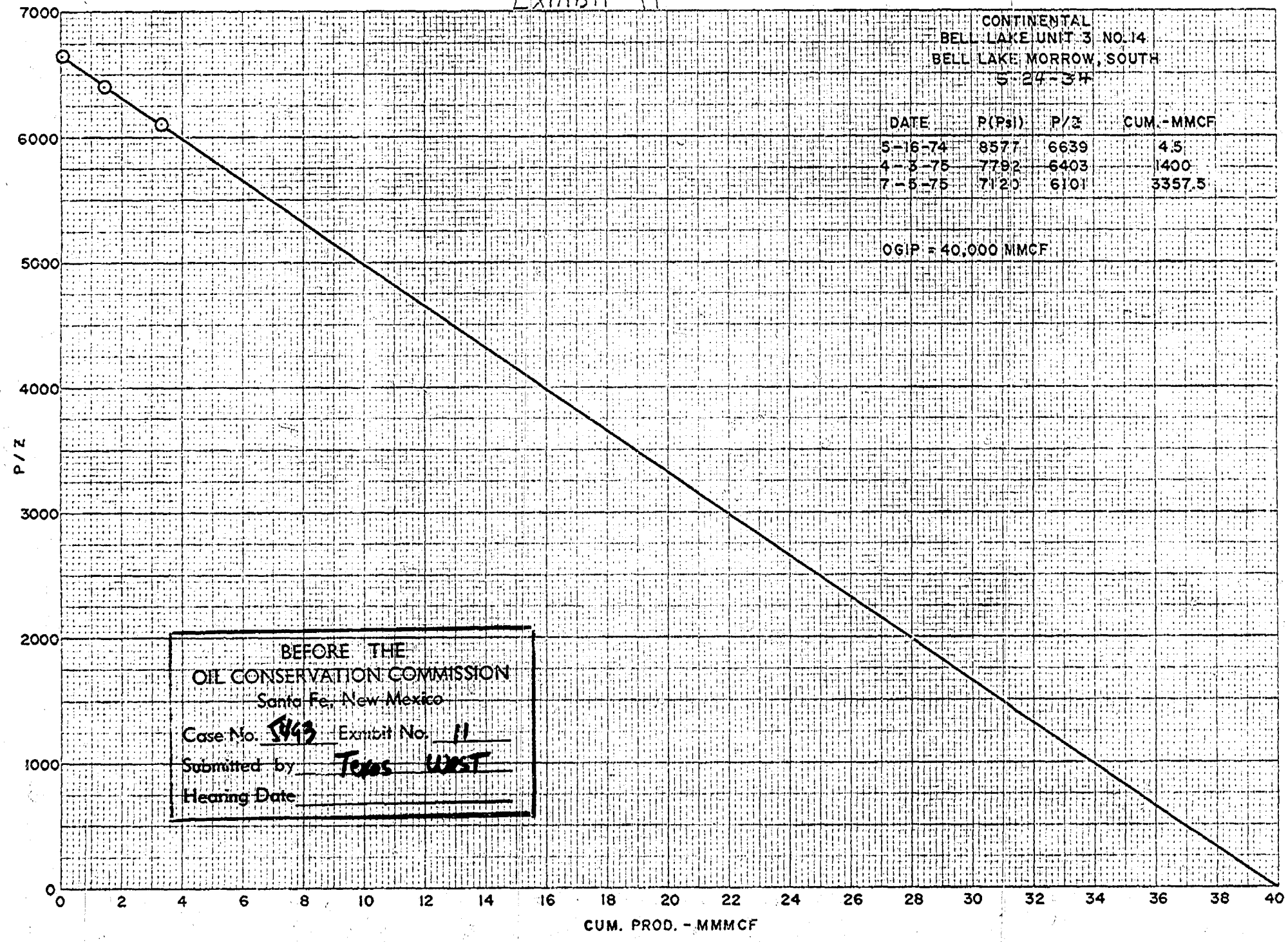


BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 10
Submitted by Texas Pacific
Hearing Date

NO. 340R-20 DIETZGEN GRAPH PAPER
20 X 20 PER INCH

EUGENE DIETZGEN CO.
MADE IN U. S. A.

Exhibit 11



BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5943 Exhibit No. 11
Submitted by Texas West
Hearing Date

OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

DIRECTOR
JOE D. RAMEY

LAND COMMISSIONER
PHIL R. LUCERO

STATE GEOLOGIST
EMERY C. ARNOLD

November 18, 1975

Re: CASE NO. 5493
ORDER NO. R-5039-B

Clarence Hinkle
Hinkle, Bondurant, Cox & Eaton
Attorneys at Law
Post Office Box 10
Roswell, New Mexico 88201

Applicant:

Texas West Oil & Gas Corporation

Dear Sir:

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

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

Copy of order also sent to:

Hobbs OCC x
Artesia OCC
Aztec OCC

Other Jason Kellahin, Fred Hull

conoco

L. P. Thompson
Division Manager
Production Department
Hobbs Division
Western Hemisphere Petroleum Division

Continental Oil Company
P.O. Box 460
1001 North Turner
Hobbs, New Mexico 88240
(505) 393-4141

file- Case 5493

November 26, 1975

Texas West Oil and Gas Corporation
609 Midland National Bank Building
Midland, Texas 79701

Attention Mr. L. M. Dunnavant

Gentlemen:

Texas West Oil and Gas Corporation's "MADERA" No. 1 - N.M.O.C.C. Order No. R-5039-B.

Your letter dated November 19, 1975 has been received and copies have been furnished the other working interest owners in the Bell Lake Unit. Although the assessment of 150% of our prorata share of the estimated cost is a very strong economic compulsion to join in this low risk well, we feel that a well drilled at this location has very little exploratory value. In the furtherance of our development program at reasonable step-out locations, we feel that Continental's money would be better spent by drilling an offset well in Section 32, as originally budgeted. Since the payment of our proportionate share of your well would exhaust the funds which have been budgeted for the remainder of 1975, to the exclusion of the above-mentioned well, we have elected not to advance our share of the estimated cost of your "MADERA" No. 1. This decision is solely that of Continental Oil Company and does not represent any decision on the part of any other working interest owners in the Bell Lake Unit, each of whom should make their own election on this matter.

Yours very truly,

R K Hammond

R. K. Hammond
Acting Division Manager

VTL:reh
CC:
Bell Lake Unit
Working Interest Owners
(Address List Attached)

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

JCC: FOH: JWK

Bell Lake Unit
Participating Area A
Working Interest Owners

Bass Enterprises Production Company
C/O Perry R. Bass
3100 Fort Worth National Bank Building
Fort Worth, Texas 76102

Exxon Company, U.S.A
P. O. Box 1600
Midland, Texas 79701

Brady M. Lowe
1500 Broadway, Suite 1230
Lubbock, Texas 79400

Phillips Petroleum Company
Phillips Building
Odessa, Texas 79760

Tripor Resources Oil and Gas Fund
305 United Gas Building
Houston, Texas 77002

Docket No. 13-75 is tentatively set for hearing on June 11, 1975. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - MAY 28, 1975

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

The following cases will be heard before Richard L. Stamets, Examiner, or Daniel S. Nutter, Alternate Examiner:

CASE 5468: (Continued from the April 30, 1975 Examiner Hearing)

In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Kenneth M. Hankins, Great American Insurance Company, and all other interested parties to appear and show cause why the Virginia Branch Well No. 1, located in Unit D of Section 9, Township 10 North, Range 25 East, Guadalupe County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program.

CASE 5485: Application of Yates Petroleum Corporation for a dual completion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its Tidwell ED Well No. 1, located in Unit P of Section 22, Township 17 South, Range 26 East, Kennedy Farms Field, Eddy County, New Mexico, in such a manner as to produce gas from the Atoka and Morrow formations through the tubing-casing annulus and tubing, respectively.

CASE 5486: Application of Yates Petroleum Corp. for two unorthodox gas well locations, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox gas well locations for two proposed wells adjacent to the Atoka-Pennsylvanian Gas Pool, Eddy County, New Mexico, the first to be located in the center of Unit O of Section 25, Township 17 South, Range 25 East, the E/2 of said Section 25 to be dedicated to the well, and the second to be located in the center of Unit M of Section 31, Township 17 South, Range 26 East, the W/2 of said Section 31 to be dedicated to the well.

CASE 5487: Application of J. I. O'Neill, Jr., for salt water disposal, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks approval for the disposal of produced salt water by injection into the San Andres formation through the perforated interval from 4852 feet to 5001 feet in his State L Well No. 2, located in Unit N of Section 16, Township 8 South, Range 36 East, South Prairie-San Andres Pool, Roosevelt County, New Mexico.

CASE 5488: Application of Texas Pacific Oil Co. for pool contraction and extension, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order contracting the vertical limits of the Jalmat Gas Pool underlying the N/2 NE/4 and the SE/4 NE/4 of Section 4, Township 23 South, Range 36 East, Lea County, New Mexico, by the deletion therefrom of the lowermost 160 feet of the Seven Rivers formation, and the concurrent extension of the vertical limits of the Langlie Mattix Pool underlying said lands to include therein the said lowermost 160 feet of the Seven Rivers formation, further to similarly contract the vertical limits of the Jalmat Gas Pool underlying the NW/4 SW/4 of Section 3, Township 23 South, Range 36 East, by the deletion of the lowermost 135 feet of the Seven Rivers and the concurrent extension of the Langlie Mattix Pool to include the lowermost 135 feet of the Seven Rivers.

CASE 5489: Application of Texas Pacific Oil Co., Inc. for a waterflood expansion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the expansion of its Jalmat State "A" and/or its Langlie Mattix State "A" waterflood projects, Jalmat and Langlie Mattix Pools, by the injection of water into the Seven Rivers and Queen formations through its State "A" Wells Nos. 47 and 63 located, respectively, in Units K and I of Section 3 and its State "A" Well No. 84, located in Unit G of Section 23, all in Township 23 South, Range 36 East, Lea County, New Mexico.

CASE 5490: Application of Tenneco Oil Co. for salt water disposal, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water by injection into the Strawn formation through the perforated interval from 11,164 feet to 11,470 feet in its Jones Federal "D" Well No. 1, located in Unit E of Section 24, Township 19 South, Range 31 East, Lusk-Strawn Pool, Eddy County, New Mexico.

CASE 5491: Application of Murphy H. Baxter for an unorthodox oil well location and an administrative procedure, Lea County, New Mexico, Applicant, in the above-styled cause, seeks approval for the unorthodox oil well location for a well to be drilled 1980 feet from the North line and 1460 feet from the East line of Section 1, Township 18 South, Range 33 East, North EK-Queen Pool, Lea County, New Mexico. Applicant further seeks the establishment of an administrative procedure whereby additional wells at unorthodox locations in the North EK-Queen Unit Area could be approved without notice and hearing.

CASE 5469: (Continued and Readvertised)

Application of Read & Stevens for an unorthodox gas well location, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox gas well location of a well to be drilled at a point 990 feet from the South and West lines of Section 7, Township 15 South, Range 28 East, Chaves County, New Mexico, in exception to the Buffalo Valley-Pennsylvanian Gas Pool Rules.

CASE 5492: Application of David Fasken for downhole commingling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Canyon and Morrow production in the wellbore of his El Paso Federal Well No. 2, located in Unit M of Section 2, Township 21 South, Range 26 East, Avalon Field, Eddy County, New Mexico.

CASE 5493: Application of Texas West Oil & Gas Corporation for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, Bell Lake Field, Lea County, New Mexico, to be dedicated to a well to be drilled at an orthodox location for said unit in Unit G of said Section 5. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof, as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for the risk involved in drilling said well.

CASE 5494: Application of Burleson and Huff for compulsory pooling, a non-standard gas proration unit, and an unorthodox location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Jalmat Gas Pool underlying the NW/4 of Section 35, Township 25 South, Range 37 East, Lea County, New Mexico, and in the Langlie Mattix Pool underlying the NW/4 NW/4 of said Section 35 to form a non-standard 160-acre Jalmat gas proration unit and a standard 40-acre Langlie Mattix oil proration unit, each to be dedicated to applicant's Dabbs Well No. 2, located at an unorthodox Jalmat gas well location 330 feet from the North line and 990 feet from the West line of said Section 35. Also to be considered will be the cost of re-entering, drilling, and completing said well and the allocation of such costs as well as actual operating costs and charges for supervision. Also to be considered will be the designation of the applicant as operator of the well and a charge for the risk involved in re-entering, drilling, and completing said well.

Case 5493

CLARENCE E. HINKLE
W. E. BONDURANT, JR. (1914-1973)
LEWIS C. COX, JR.
PAUL W. EATON, JR.
CONRAD E. COFFIELD
HAROLD L. HENSLEY, JR.
STUART D. SHANOR
C. D. MARTIN
PAUL J. KELLY, JR.

JAMES H. BOZARTH
RONALD G. HARRIS
JAMES H. ISBELL

LAW OFFICES
HINKLE, BONDURANT, COX & EATON
600 HINKLE BUILDING
POST OFFICE BOX 10
ROSWELL, NEW MEXICO 88201

TELEPHONE (505) 622-6510

MR. ISBELL LICENSED
IN TEXAS ONLY

MIDLAND, TEXAS OFFICE
521 MIDLAND TOWER
(915) 683-4691

April 29, 1975

Oil Conservation Commission
Box 2088
Santa Fe, New Mexico 87501

Gentlemen:

We enclose in triplicate application of Texas West Oil & Gas Corporation for compulsory pooling of the E½ Section 5, Township 24 South, Range 34 East, Lea County.

We would appreciate your placing this matter on the docket for the examiner's hearing to be held on May 28, 1975.

Yours very truly,

HINKLE, BONDURANT, COX & EATON

By Clarence E. Hinkle

CEH:cs
Enc.
cc: Texas West Oil & Gas Corp.
cc: Continental Oil Company

TWO&G Form 106

TEXAS WEST OIL & GAS CORPORATION
609 Midland National Bank Building
Midland, Texas 79701

AUTHORITY FOR EXPENDITURE

Date: April 23, 1975

AFE # 108

Wildcat	Development
( ) Drilling	(X) Drilling
( ) Completion	(X) Completion
	( ) Drill Deeper
	( ) Workover

Lease Name Madera Well No. 1 Proposed Depth 14,200'

County Lea State New Mexico Well Location 1980' FN & EL- Sec. 5, T-24-S, R-34-E

Spud Date ____ Estimated Days to Drill 100 To Complete 12

INTANGIBLE WELL COST	DRY HOLE	COMPLETED WELL
Access, Location & Roads	$	$ 15,000
Rig Move		20,000
Footage Cost		
Day Work Cost (100 days @ $2500; 12 days		278,800
Bits & Reamers @ $2400)		55,500
Fuel		
Water		8,000
Mud & Chemicals		62,000
Cementing & Services		45,000
Coring		
Surveying & Testing		20,000
Mud Logging		5,000
Perforating		5,500
Stimulation		7,500
Transportation		10,000
Drilling Overhead Cost		5,500
Other Drilling Expense		15,000
Contingencies		15,000
Total Intangible Well Cost	$	$ 567,800

TANGIBLE WELL COSTS					
30	of	30	" Conductor Csg.	$	$ 450
500	of	16	" Surface Casing		9,200
5,200	of	10-3/4	" Intermediate Csg.		69,000
12,000	of	7-5/8	" Intermediate Csg.		144,000
	of		" Production Casing		
2,600	of	5	" Liner		18,500
13,800	of	2-7/8	" Tubing		55,200
Liner Equipment					2,500
Wellhead Equipment					24,000
Producing Facilities, Tank Batteries, Flowlines					35,000
Packers & Other Subsurface Tools					7,500
Contingencies					10,000
Total Tangible Well Costs					$ 375,350
TOTAL WELL COST					$ 943,150

Acreage Cost $
Geological (Acquisition) Cost
TOTAL WELL COST + ACREAGE & GEOLOGICAL COSTS $ 943,150.

APPROVED BY:

COMPANY:

DATE:

BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION
EXHIBIT NO. 4
CASE NO. 5493
Submitted by Texas West
Hearing Date May 28 1975

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 De Novo Exhibit No. 11
Submitted by Conoco
Hearing Date 7-25-75

R33E R34E

T 23 S

T 24 S

Exxon
Conoco
Conoco
Phillips
State
Tripor
Conoco 25/32
Texas West 7/32
Rich. & Bass
Conoco
Tripor
Lowe
Carter et al
Madera, et al
Ada & Phillips et al
Madera et al
Phillips et al
Buckeye, et al
US

LEGEND

- FEDERAL ACREAGE
- STATE ACREAGE
- FEE ACREAGE
- (7) TRACT NUMBERS

conoco

PRODUCTION DEPARTMENT HOBBS DIVISION

BELL LAKE UNIT
LEA COUNTY, NEW MEXICO
SOUTH AREA
PARTICIPATING AREA A

SCALE 0' 1000' 2000'

VTL 7-75 ERW

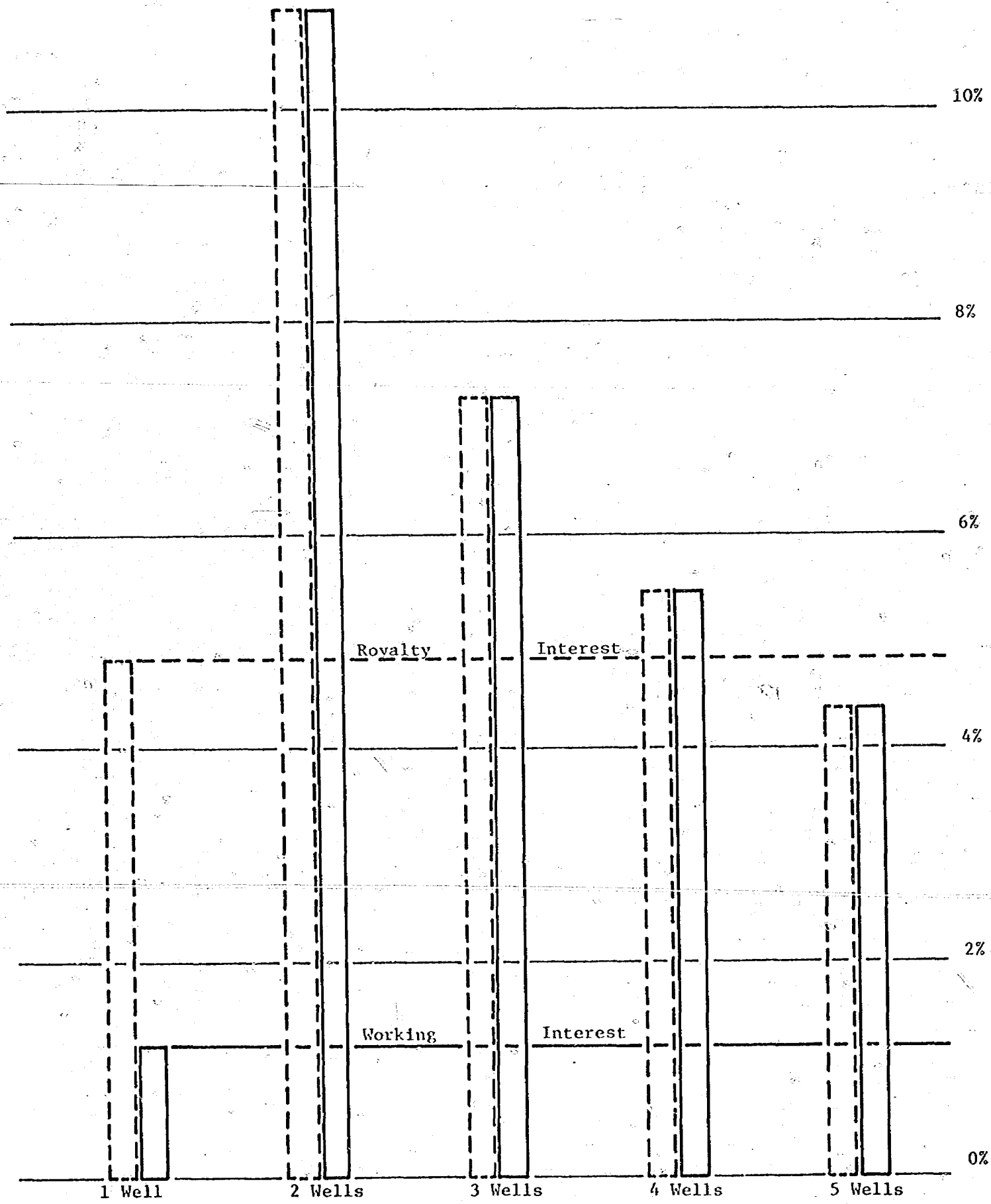
PAYOUT STATUS
BELL LAKE UNIT - SOUTH AREA
AS OF MARCH 31, 1975

BEFORE THE
OIL CONSERVATION COMMISSION
South Area
Case No. 5493 Exhibit No. 12
Submitted by Conoco
Hearing Date 7-25-75

Conoco 100%	Well No. 1-A .6184005	Well No. 4 .6184005	Well No. 5 .6184005	Well No. 14 .7719611	Well No. 16 .7719611	
Revenue	76,788	2,834,246	238,974	630,189		541,441
Expense Intan.	7	1,165,065	465,705	469,203		1,794,382
Deprec. Addns.	58,142	170,276	155,821	157,202		506,386
Retirements	(13)	239,729	1,554,666	-		7,234
Operating Exp.	13,688	388,630	48,868	55,200		(2,018,382)
Bonus Cost	-	(3,454)	10,688	-		(99,756)
Payout	4,964	874,000	(1,996,774) (99,756)	(51,416)	(849,157)	
W. I. Owners						
Revenue	124,172	4,583,188	386,439	816,348		5,910,147 72,051
Exp. Intan.	11	1,883,997	753,080	607,807		3,244,895 39,559
Depr. Addns.	94,020	275,349	251,974	203,640		824,983 10,057
Operating Exp.	22,135	628,444	79,023	71,506		801,108 9,766
Payout	8,006	1,795,398	(697,638)	(66,605)	(1,100,000) est.	(60,839) (742)
Non-consent penalty	58,083	1,393,895	541,106	441,476	550,000 est.	2,984,560 36,385
Payout status of Non-consenting WIO	(50,077)	401,503	(1,238,744)	(508,081)	(1,650,000)	(3,045,399) (37,127)
Estimated Income						
2nd Quarter 1975	16,000	325,000	-0-	450,000		791,000 9,643
3rd Quarter 1975	16,000	325,000	-0-	450,000		791,000 9,643
4th Quarter 1975	16,000	375,000	-0-	450,000	300,000	1,141,000 13,910

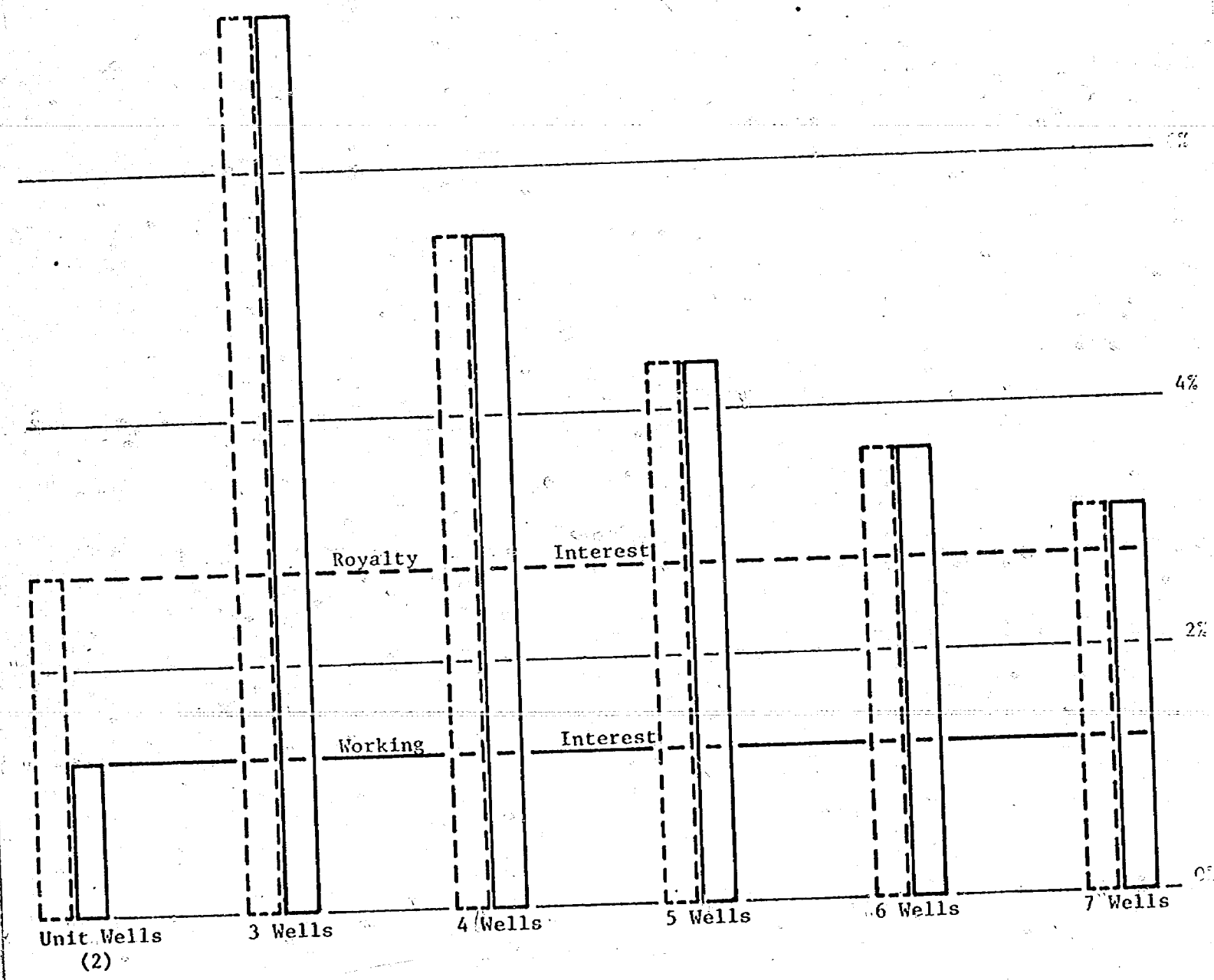
BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
De Novo
Case No. 5493 Exhibit No. 13
Submitted by Conoco
Hearing Date 7-25-75

% of Reservoir Production Allocated to Uncommitted Interests in E/2 Sec 5 Under Forced Pooling - 1440 Acre Case

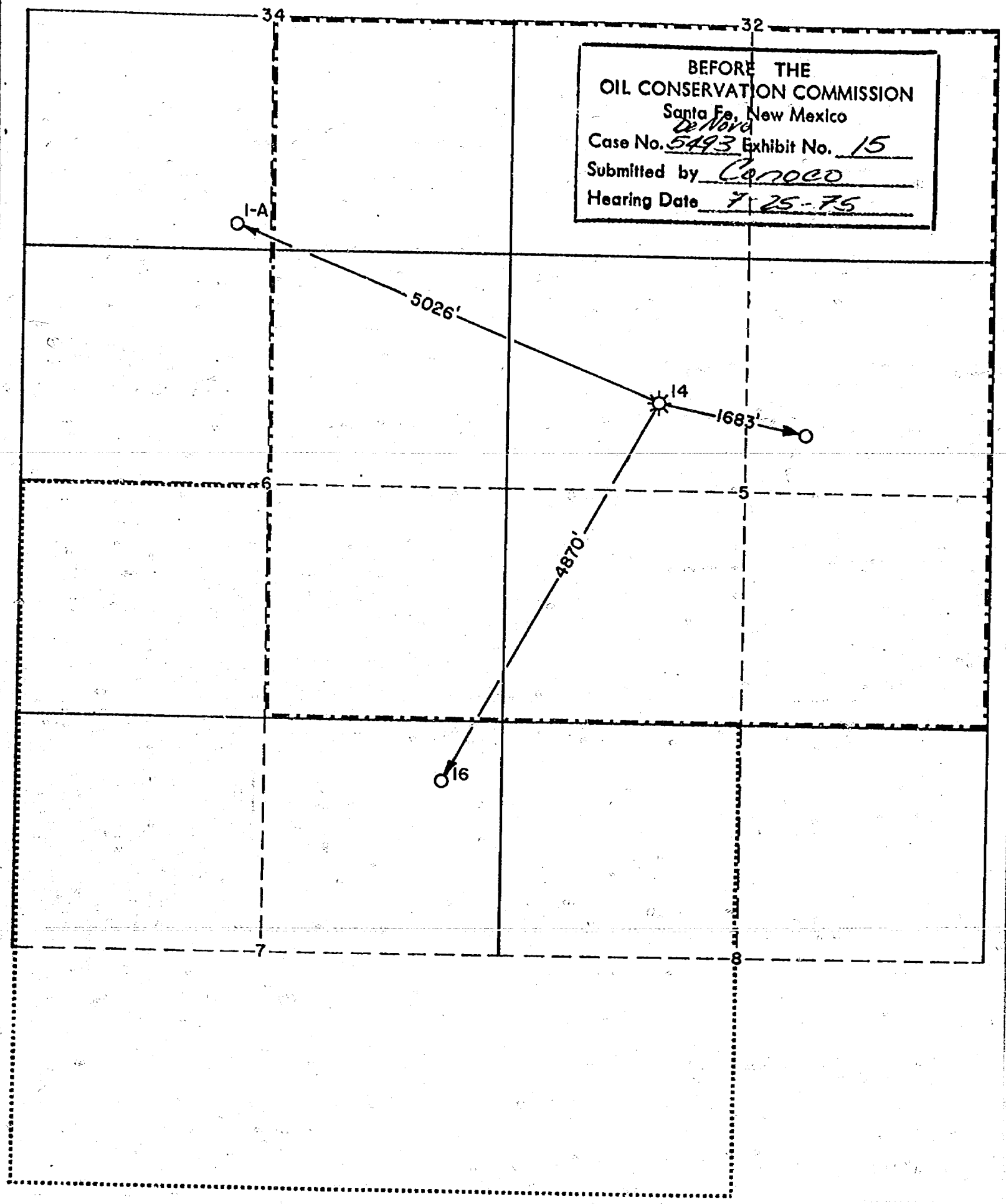


BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. De Novo 6493 Exhibit No. 14
Submitted by Conoco
Hearing Date 7-25-75

% of Reservoir Production Allocated to Uncommitted
Interests in E/2 Sec 5 Under Forced Pooling - 2560 Acre Case



BELL LAKE UNIT MORROW PARTICIPATING AREA

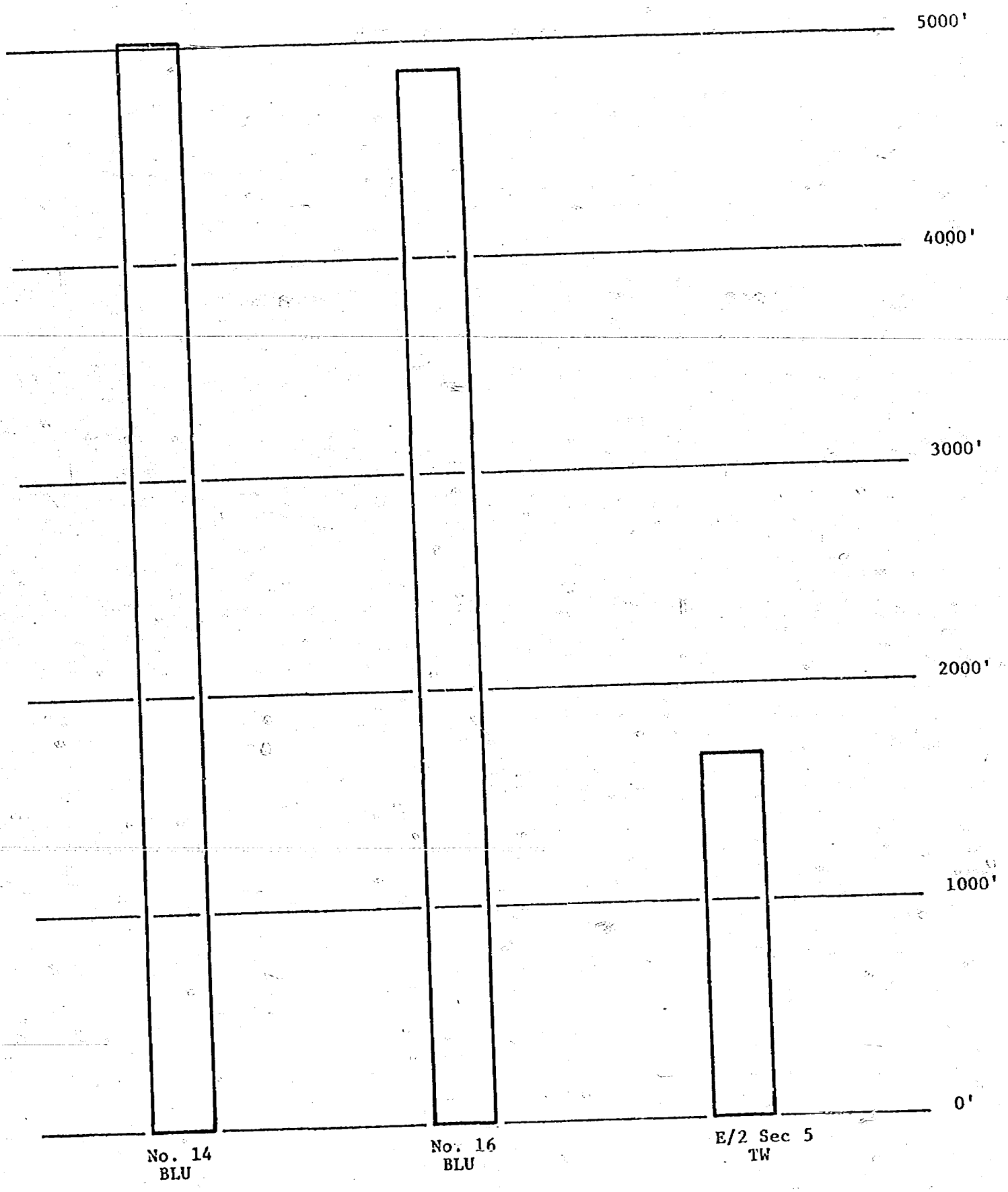


PRESENT PARTICIPATING AREA

PROBABLE EXPANSION OF P.A.

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
De Noro
Case No. 5493 Exhibit No. 16
Submitted by Conoco
Hearing Date 7-25-75

Comparison of Risk
Distance From Nearest Well



any part thereof used in conformity with good operating practices within the unitized area for drilling, operating, camp and other production or development purposes, for repressuring or recycling in accordance with a plan of development approved by the Supervisor, Commissioner and the Commission, or unavoidably lost, shall be deemed to be produced equally on an acreage basis from the several tracts of unitized land of the participating area established for such production and, for the purpose of determining any benefits accruing under this agreement, each such tract of unitized land shall have allocated to it such percentage of said production as the number of acres of such tract included in said participating area bears to the total number of acres of unitized land in said participating area. It is hereby agreed that production of unitized substances from a participating area shall be allocated as provided herein regardless of whether any wells are drilled on any particular part or tract of said participating area. If any gas produced from one participating area is used for repressuring or recycling purposes in another participating area, the first gas withdrawn from such last mentioned participating area for sale during the life of this agreement shall be considered to be the gas so transferred until an amount equal to that transferred shall be so produced for sale and such gas shall be allocated to the participating area from which initially produced as constituted at the time of such final production.

13. DEVELOPMENT OR OPERATION OF NON-PARTICIPATING LAND OR FORMATIONS. Any party hereto owning or controlling the working interest in any unitized land having thereon a regular well location may with the approval of the Supervisor as to Federal land, the Commissioner as to State land, and the Commission as to privately owned land, at such party's sole risk, cost and expense, drill a well to test any formation for which a participating area has not been established or to test any formation for which a participating area has been established if such location is not within said participating area, unless within 90 days of receipt of notice from said party of his intention to drill the well the Unit Operator elects and commences to drill such well in like manner as other wells are drilled by the Unit Operator under this agreement.

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. DeNovo 5493 Exhibit No. 17
Submitted by Conoco
Hearing Date 7-25-75

any part thereof used in conformity with good operating practices within the unitized area for drilling, operating, camp and other production or development purposes, for repressuring or recycling in accordance with a plan of development approved by the Supervisor, Commissioner and the Commission, or unavoidably lost, shall be deemed to be produced equally on an acreage basis from the several tracts of unitized land of the participating area established for such production and, for the purpose of determining any benefits accruing under this agreement, each such tract of unitized land shall have allocated to it such percentage of said production as the number of acres of such tract included in said participating area bears to the total number of acres of unitized land in said participating area. It is hereby agreed that production of unitized substances from a participating area shall be allocated as provided herein regardless of whether any wells are drilled on any particular part or tract of said participating area. If any gas produced from one participating area is used for repressuring or recycling purposes in another participating area, the first gas withdrawn from such last mentioned participating area for sale during the life of this agreement shall be considered to be the gas so transferred until an amount equal to that transferred shall be so produced for sale and such gas shall be allocated to the participating area from which initially produced as constituted at the time of such final production.

13. DEVELOPMENT OR OPERATION OF NON-PARTICIPATING LAND OR FORMATIONS. Any party hereto owning or controlling the working interest in any unitized land having thereon a regular well location may with the approval of the Supervisor as to Federal land, the Commissioner as to State land, and the Commission as to privately owned land, at such party's sole risk, cost and expense, drill a well to test any formation for which a participating area has not been established or to test any formation for which a participating area has been established if such location is not within said participating area, unless within 90 days of receipt of notice from said party of his intention to drill the well the Unit Operator elects and commences to drill such well in like manner as other wells are drilled by the Unit Operator under this agreement.

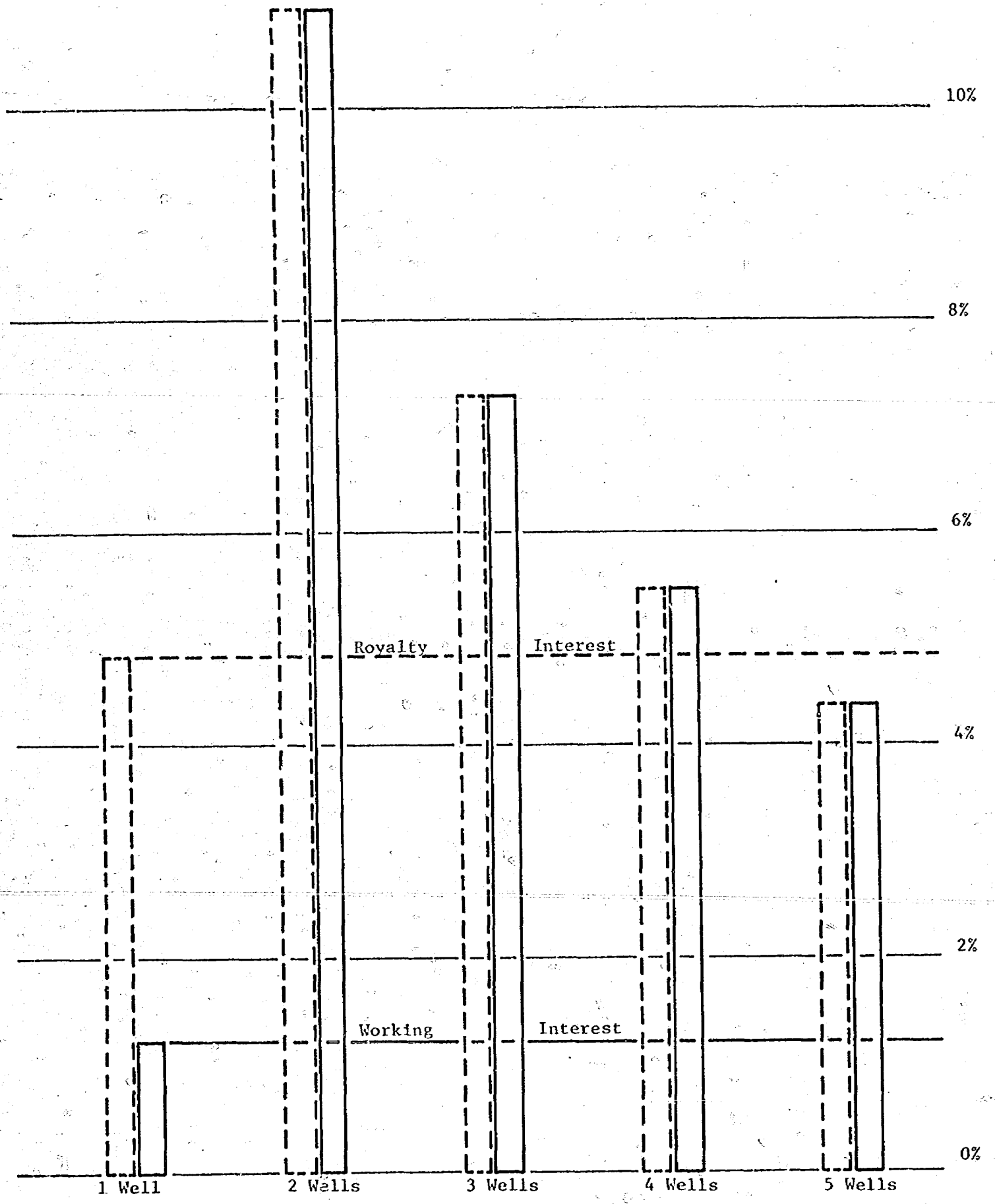
If any well drilled as aforesaid by a working interest owner results in production such that the land upon which it is situated may properly be included in a participating area, such participating area shall be established or enlarged as provided in this agreement and the well shall thereafter be operated by Unit Operator in accordance with the terms of this agreement and the unit operating agreement.

If any well drilled as aforesaid by a working interest owner obtains production in quantities insufficient to justify the inclusion in a participating area of the land upon which such well is situated, such well may be operated and produced by the party drilling the same subject to the conservation requirements of this agreement. The royalties in amount or value of production from any such well shall be paid as specified in the underlying lease and agreements affected.

14. ROYALTY SETTLEMENT. The United States and the State of New Mexico and all royalty owners who, under existing contract, are entitled to take in kind a share of the substances now unitized hereunder produced from any tract, shall hereafter be entitled to the right to take in kind their share of the unitized substances allocated to such tract, and Unit Operator, or in case of the operation of a well by a working interest owner as herein in special cases provided for, such working interest owner shall make deliveries of such royalty share taken in kind in conformity with the applicable contracts, law and regulations. Settlement for royalty interests not taken in kind shall be made by working interest owners responsible therefor under existing contracts, laws, and regulations, on or before the last day of each month for unitized substances produced during the preceding calendar month; provided, however, that nothing herein contained shall operate to relieve the lessees of any land from their respective lease obligations for the payment of any royalties due under their leases.

If gas obtained from lands not subject to this agreement is introduced into any participating area hereunder, for use in repressuring, stimulation or production, or increasing ultimate recovery, which shall be in conformity with a plan first approved by the Supervisor, the Commissioner and the Commission, a like amount of gas, after settlement as herein provided for any gas transferred from any other participating area, and with due allowance for loss or depletion from

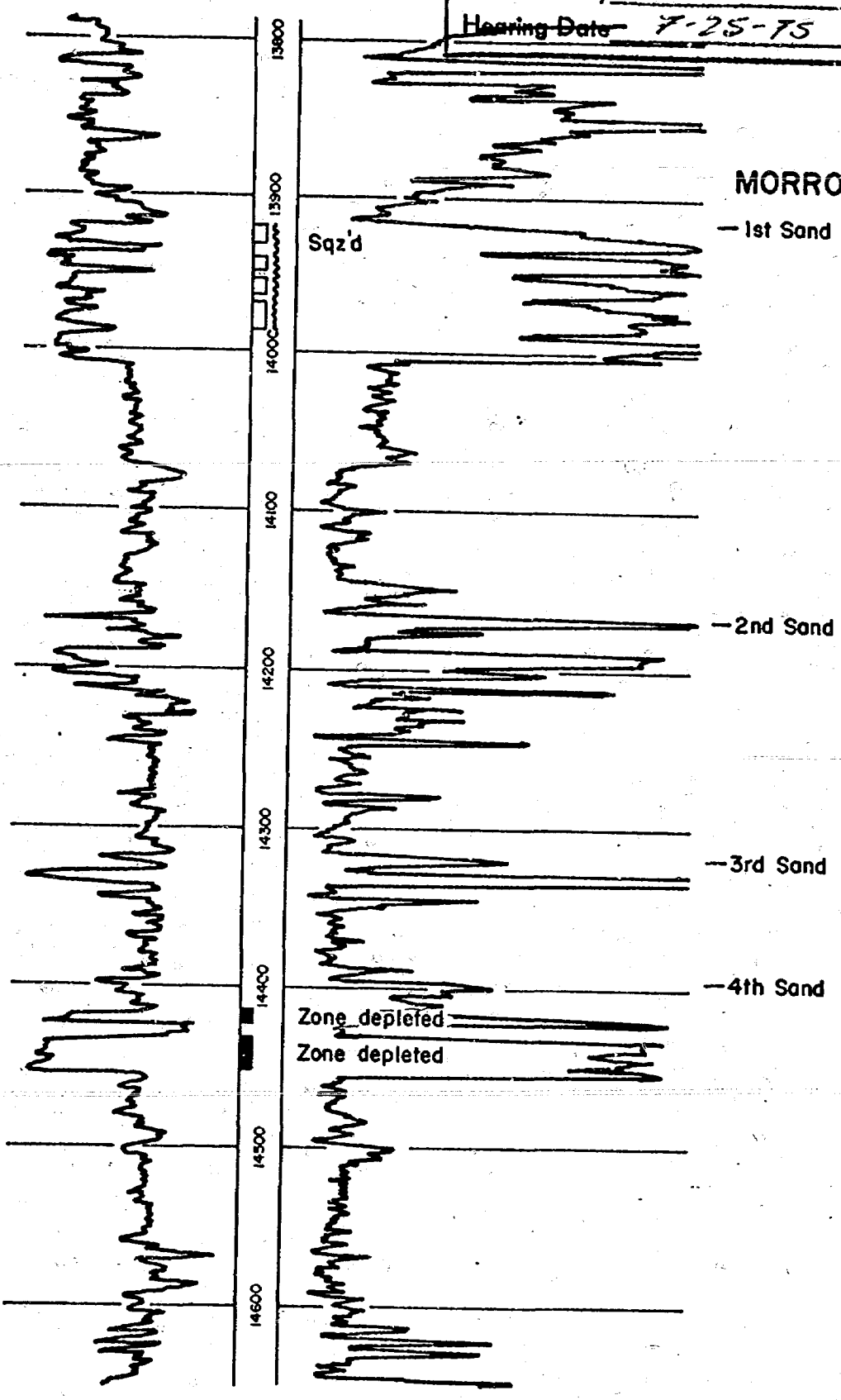
% of Reservoir Production Allocated to Uncommitted
Interests in E/2 Sec 5 Under Forced Pooling - 1440 Acre Case



13

Continental Oil
Bell Lake Unit No. 5
Unit G - Sec. 1 - 24S - 33E

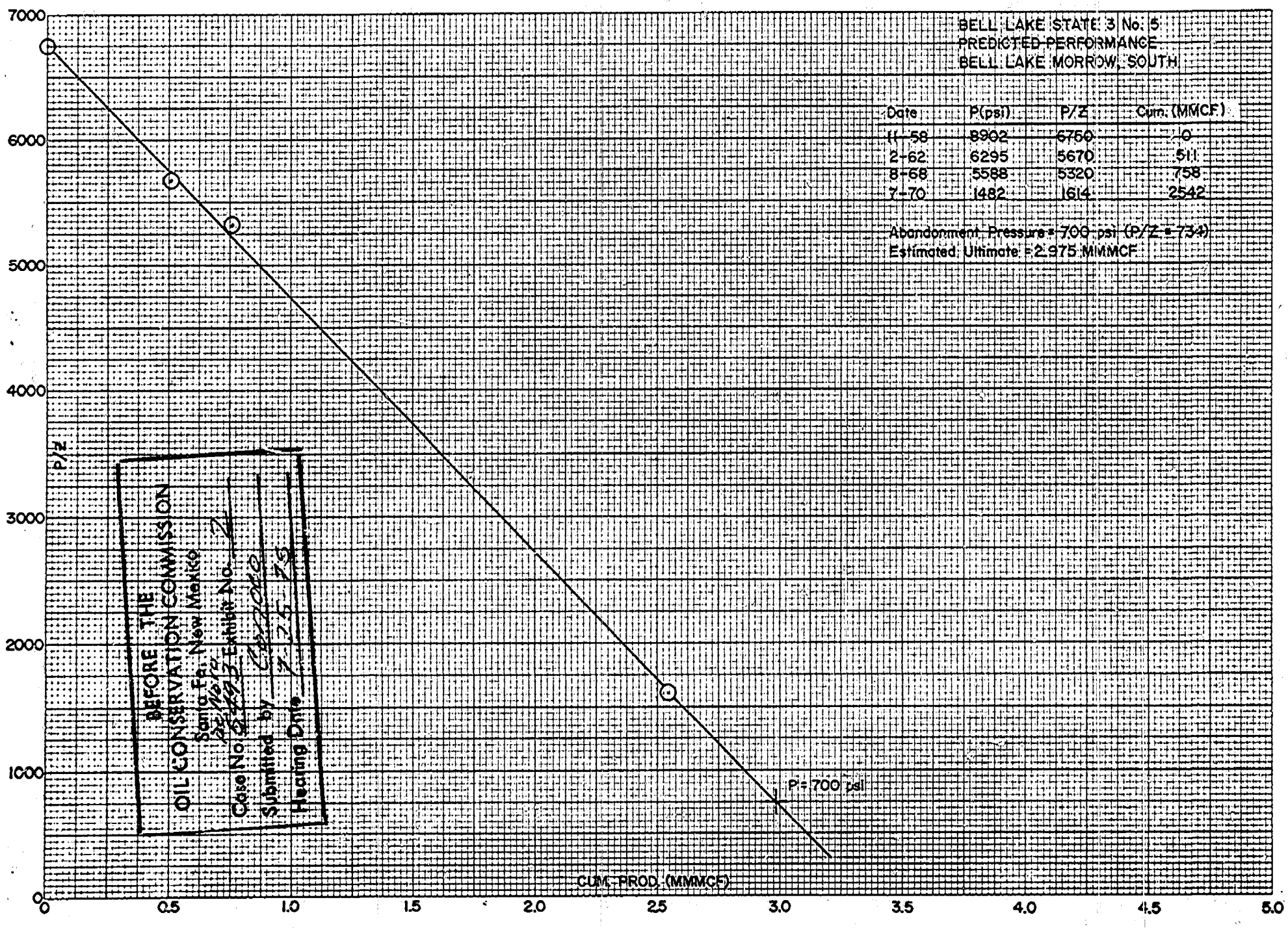
BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Dr. Noro
Case No. 5493 Exhibit No. 1
Submitted by Conoco
~~Hearing Date~~ 7-25-75



BELL LAKE STATE 3 No. 5
PREDICTED PERFORMANCE
BELL LAKE MORROW, SOUTH

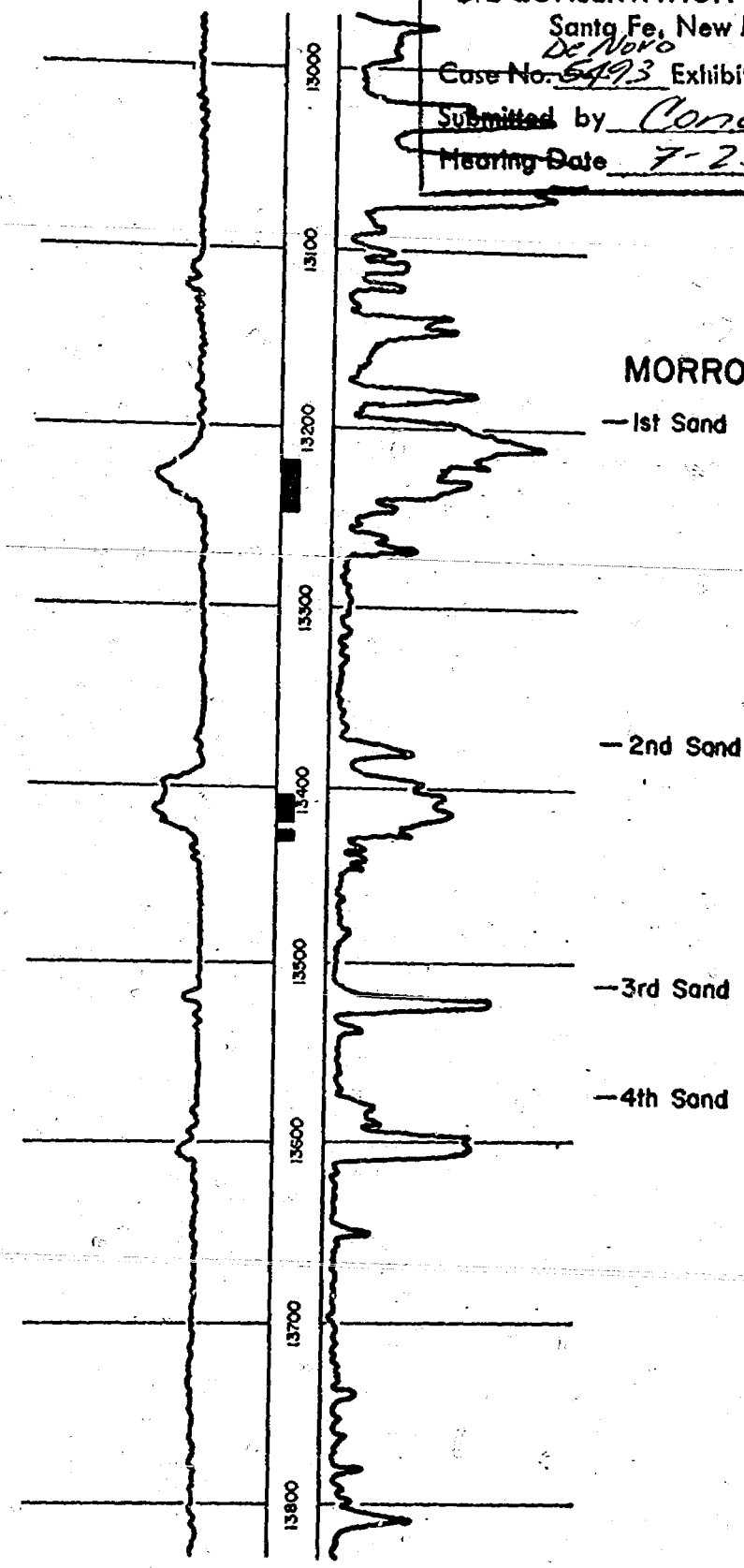
Date	P(psi)	P/Z	Cum. (MMCF)
11-58	8902	6750	0
2-62	6295	5670	511
8-68	5588	5320	758
7-70	1482	1614	2542

Abandonment Pressure = 700 psi (P/Z = 734)
Estimated Ultimate = 2.975 MMMCF



Continental Oil
Bell Lake State 1 No. 1
(formerly Bell Lake No. 1-A)
Unit O - Sec. 31-23S-34E

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. ~~5493~~ DeNovo Exhibit No. 3
~~Submitted~~ by Conoco
~~Hearing Date~~ 7-25-75

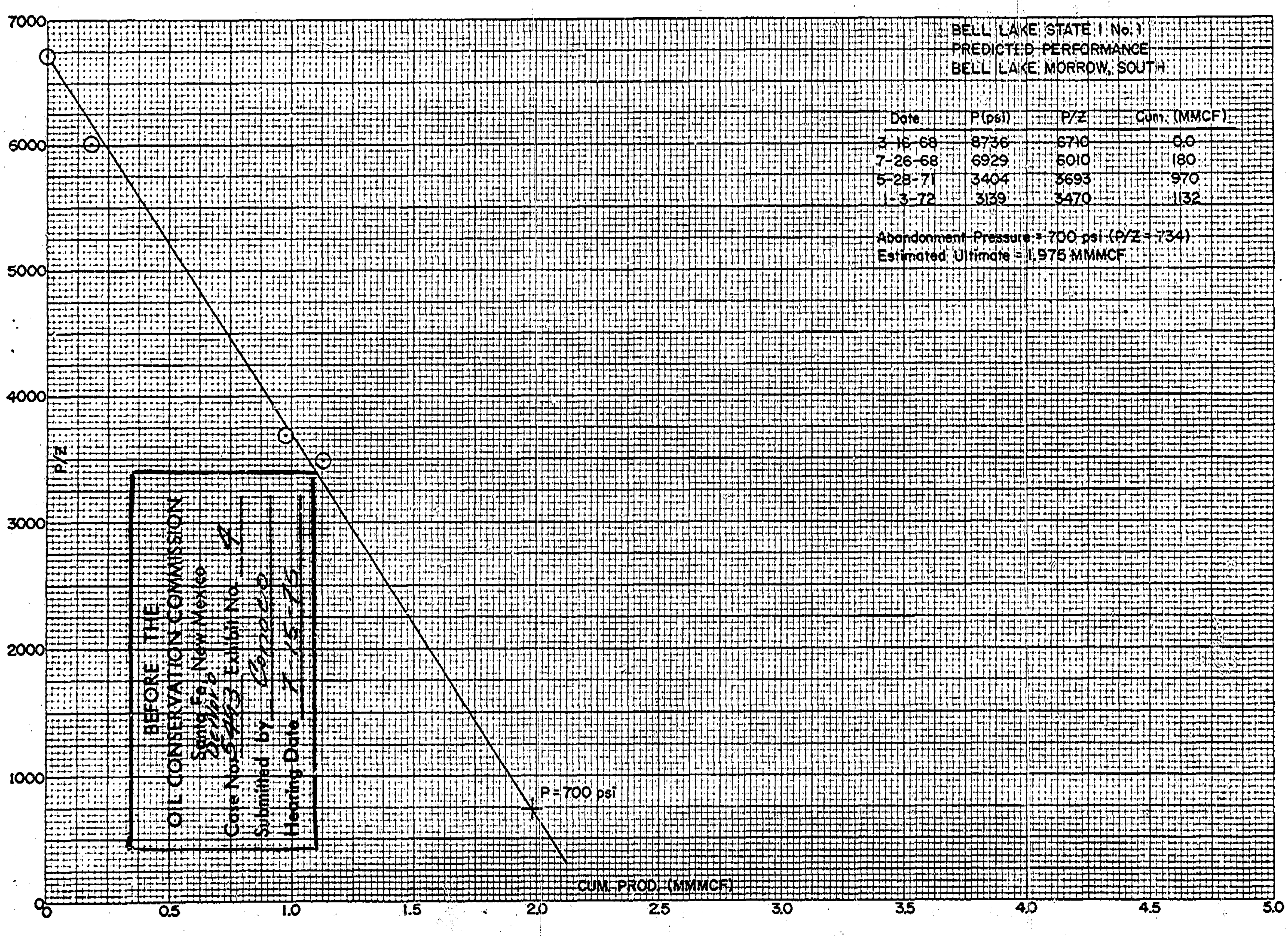


NO. 340R-10% DIETZGEN GRAPH PAPER
EUGENE DIETZGEN CO.
MADE IN U. S. A.

BELL LAKE STATE 1 No. 1
PREDICTED PERFORMANCE
BELL LAKE MORROW, SOUTH

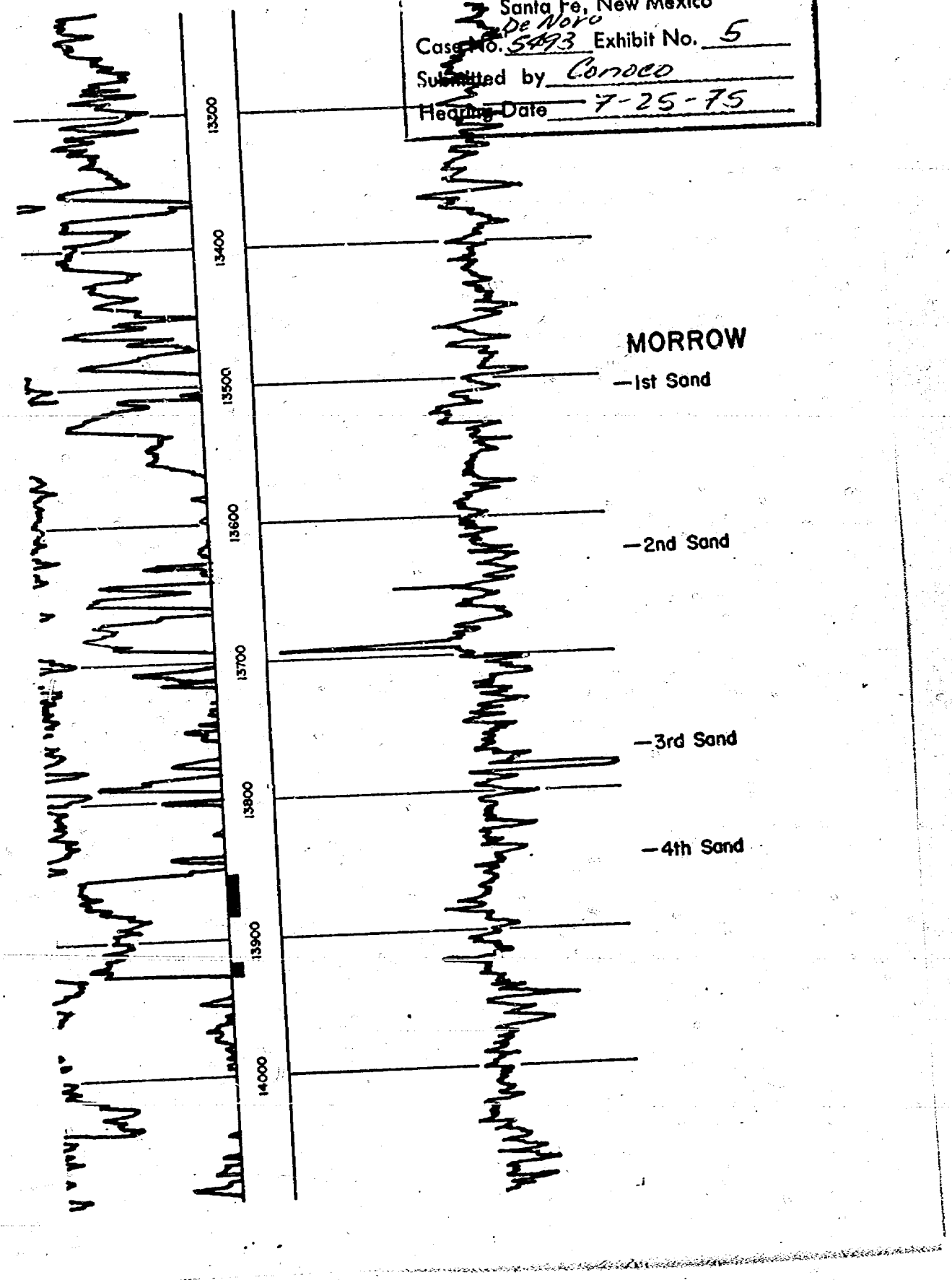
Date	P(psi)	P/Z	Cum. (MMCF)
3-16-68	8736	6710	0.0
7-26-68	6929	6010	180
5-28-71	3404	3693	970
1-3-72	3139	3470	1132

Abandonment Pressure = 700 psi (P/Z = 734)
Estimated Ultimate = 1.975 MMMCF



Continental Oil
Bell Lake Unit No. 14
Unit F - Sec. 5 - 24S - 34E

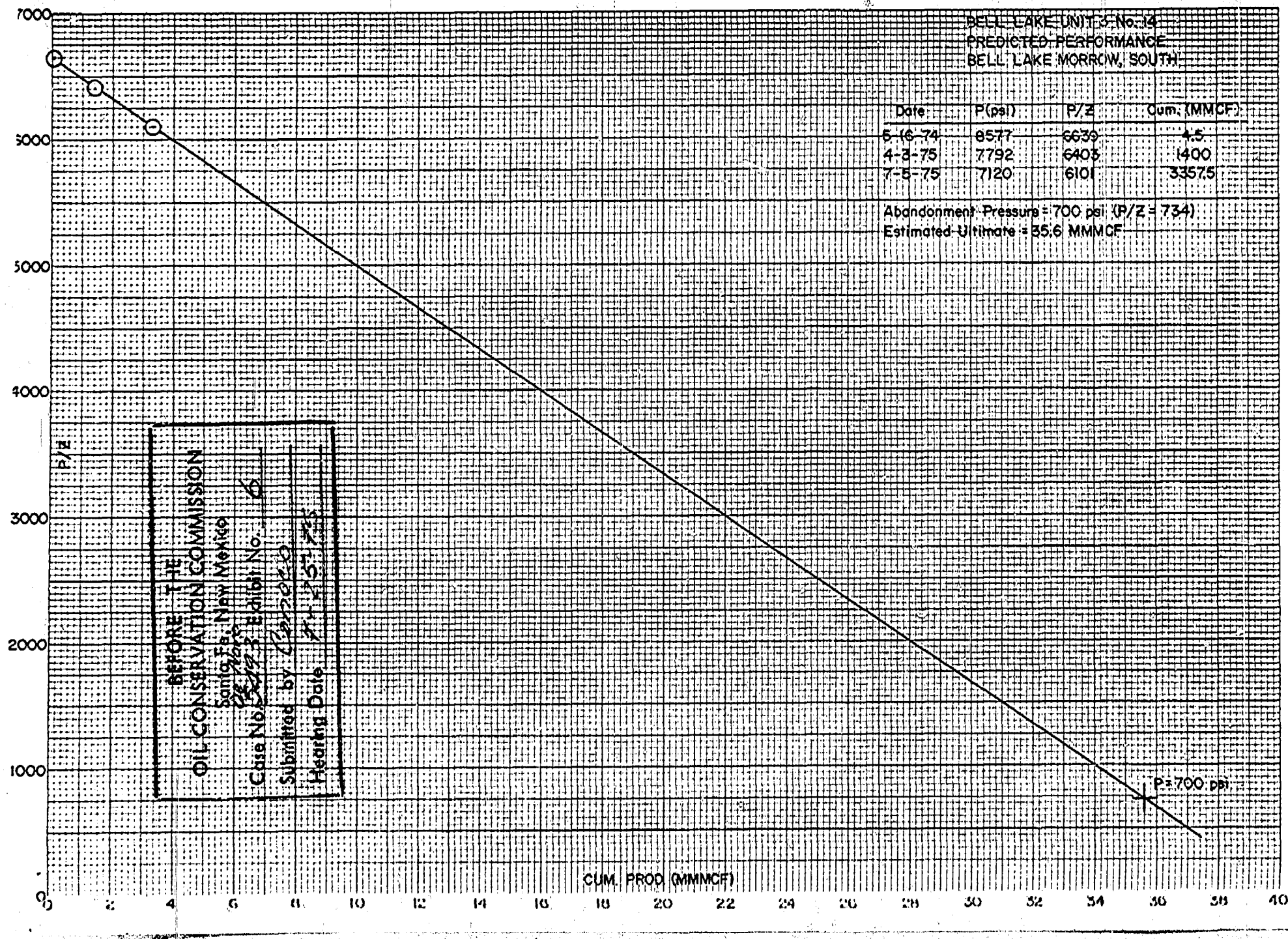
BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 (De Novo) Exhibit No. 5
Submitted by Conoco
Hearing Date 7-25-75



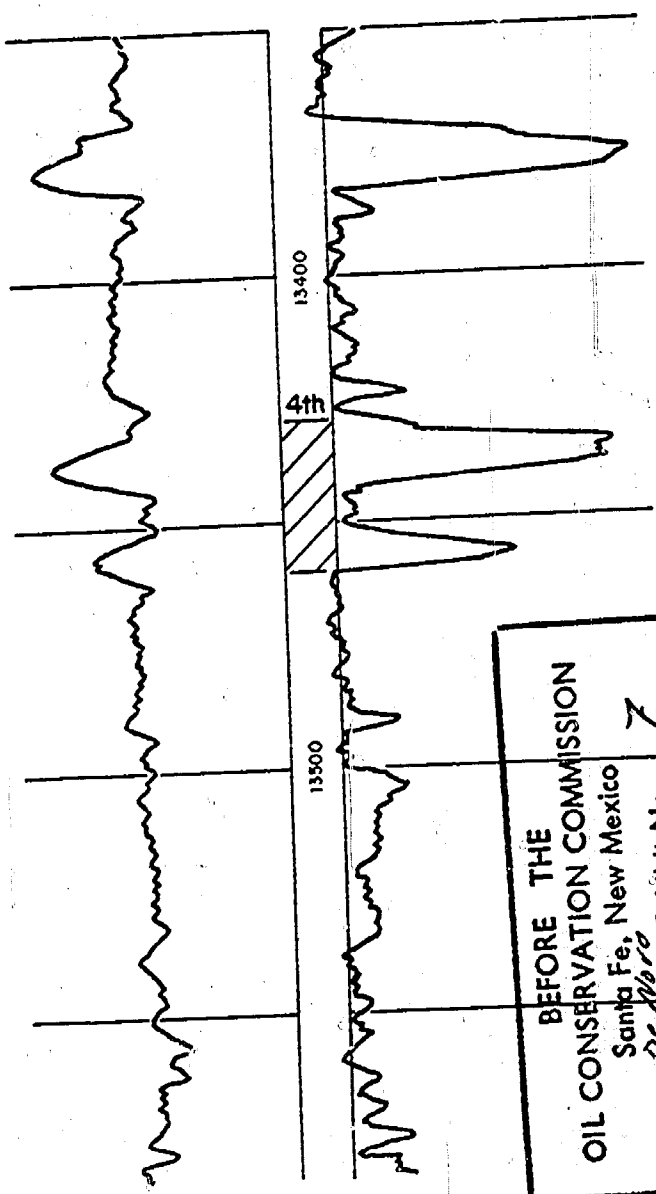
BELL LAKE UNIT - No. 14
PREDICTED PERFORMANCE
BELL LAKE MORROW, SOUTH

Date	P(psi)	P/Z	Cum. (MMCF)
5-16-74	8577	6639	4.5
4-3-75	7792	6403	1400
7-5-75	7120	6101	3357.5

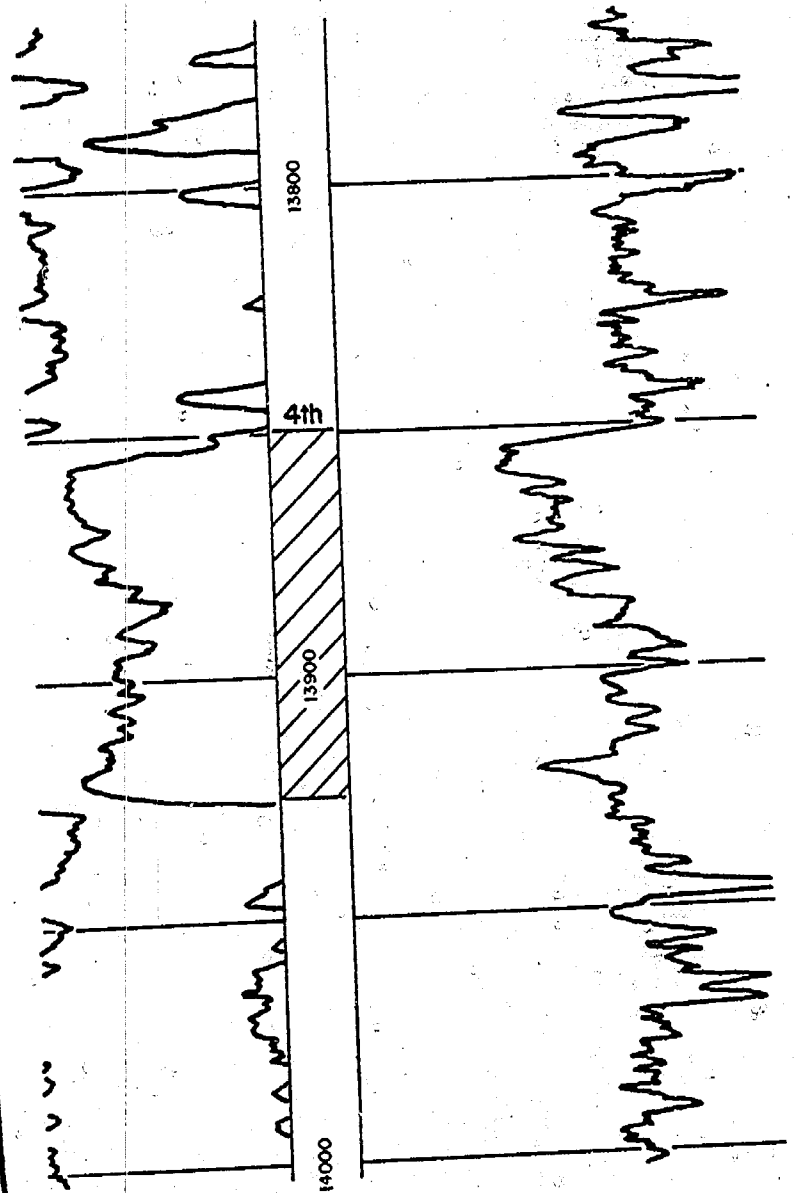
Abandonment Pressure = 700 psi (P/Z = 734)
Estimated Ultimate = 35.6 MMMCF



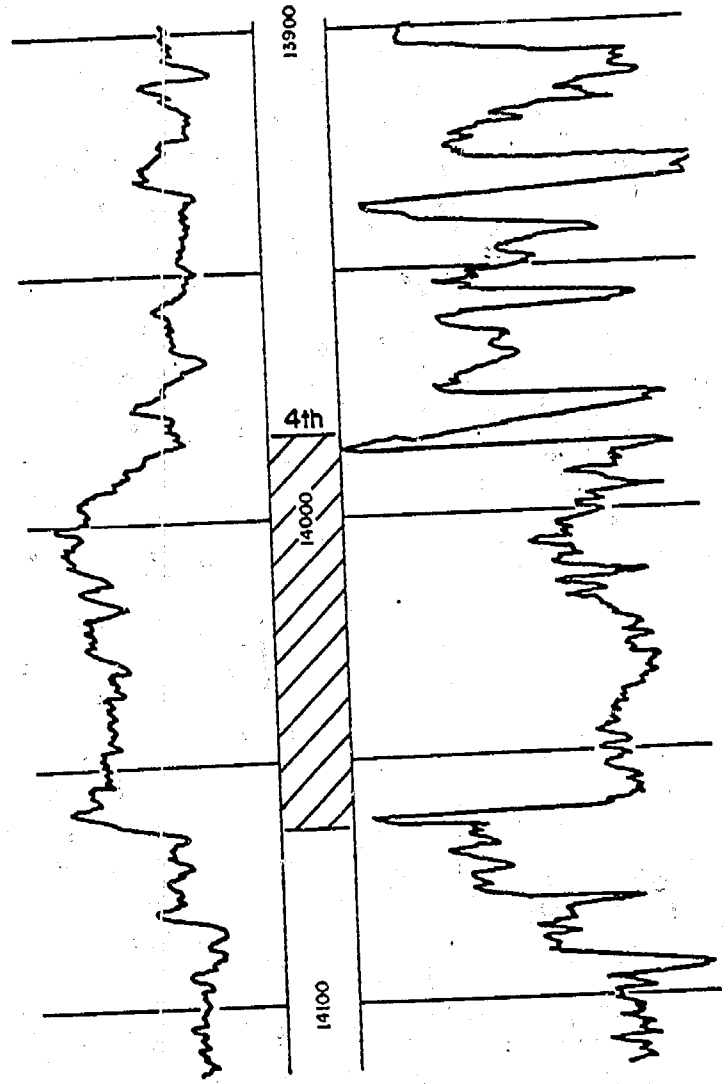
Continental Oil
Bell Lake Unit No. 4
F-6-24S-34E
DF 3626



Continental Oil
Bell Lake Unit No. 14
F-5-24S-34E
DF 3619



Shell Oil
Antelope Ridge Unit No. 5
L-33-23S-34E
DF 3541



WEST-EAST STRATIGRAPHIC SECTION

BELL LAKE-ANTELOPE RIDGE

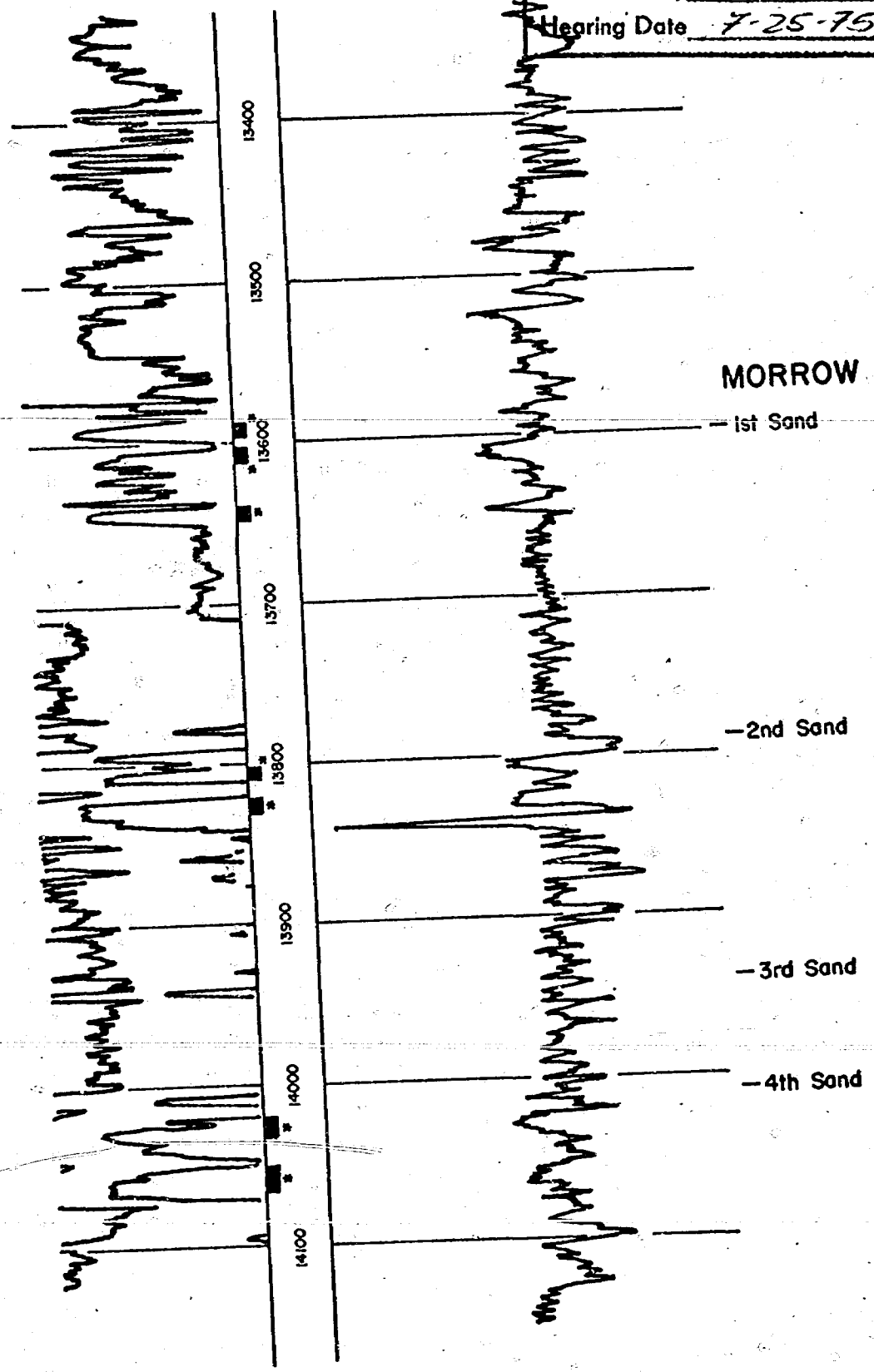
MORROW 4th SAND

JULY '75

KLT

Continental Oil
Bell Lake Unit No. 16
Unit A - Sec. 7 - 24S - 34E

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 DeNovo Exhibit No. 8
Submitted by Conoco
Hearing Date 7-25-75



7120

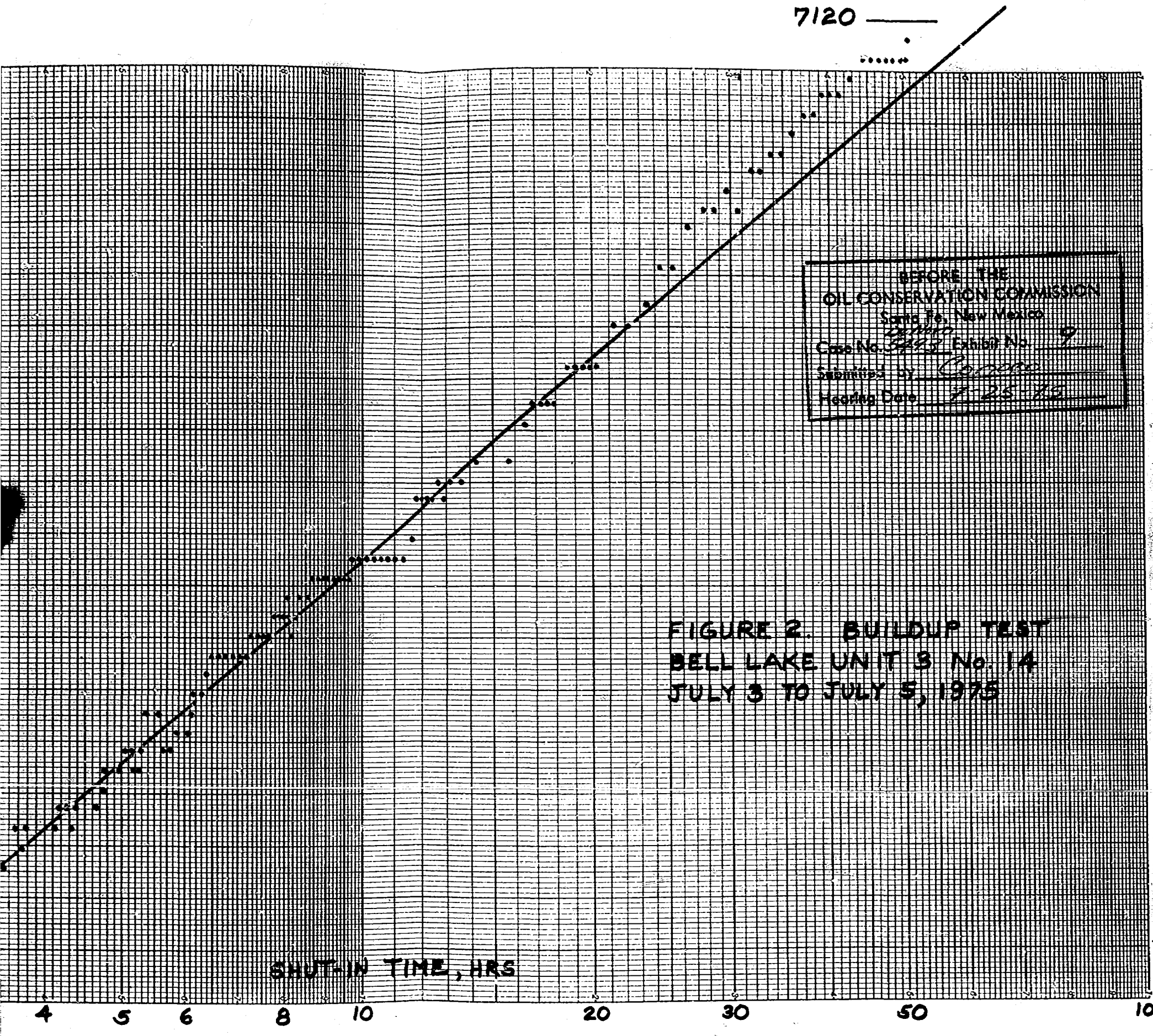


FIGURE 2. BUILDUP TEST
BELL LAKE UNIT 3 No. 14
JULY 3 TO JULY 5, 1975

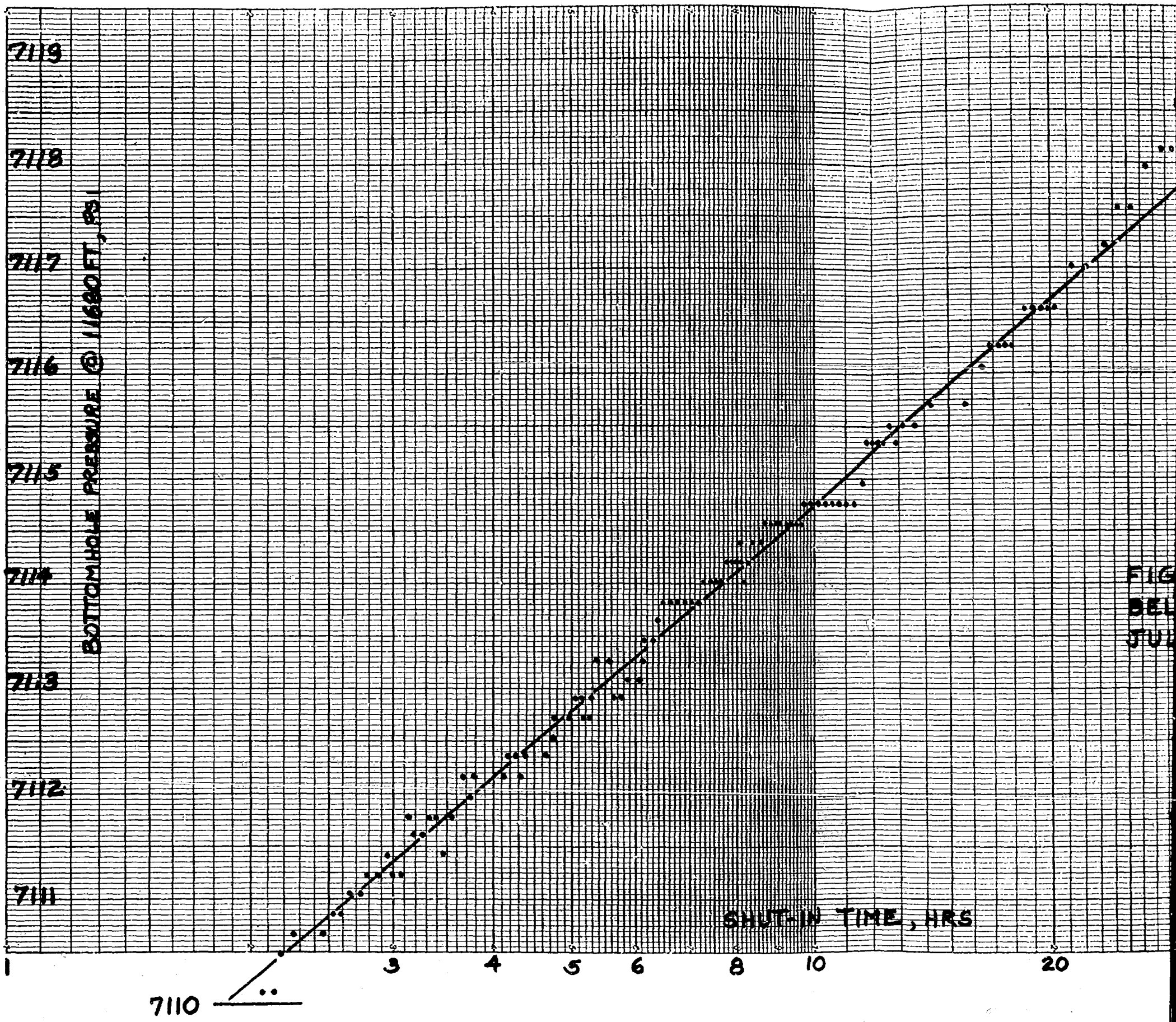

7119
7118
7117
7116
7115
7114
7113
7112
7111
7110
BOTTOMHOLE PRESSURE @ 11620 FT., PSI
SHUT-IN TIME, HRS
1
3
4
5
6
8
10
20

FIG
BEL
JUL

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. 5493
Order No. R-5039

APPLICATION OF TEXAS WEST OIL
& GAS CORPORATION FOR COMPULSORY
POOLING, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on May 28, 1975, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 10th day of June, 1975, 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, Texas West Oil & Gas Corporation, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, NMPM, Bell Lake Field, Lea County, New Mexico.

(3) That the applicant has the right to drill and proposes to drill a well at an orthodox location for said unit.

(4) That there are interest owners in the proposed proration unit who have not agreed to pool their interests.

(5) That to avoid the drilling of unnecessary wells, to protect correlative rights, and to afford to the owner of each interest in said unit the opportunity to recover or receive without unnecessary expense his just and fair share of the gas in said pool, the subject application should be approved by pooling all mineral interests, whatever they may be, within said unit.

(6) That the applicant should be designated the operator of the subject well and unit.

(7) That any non-consenting working interest owner should

be afforded the opportunity to pay his share of estimated well costs to the operator in lieu of paying his share of reasonable well costs out of production.

(8) That any non-consenting working interest owner that does not pay his share of estimated well costs should have withheld from production his share of the reasonable well costs plus an additional 200 percent thereof as a reasonable charge for the risk involved in the drilling of the well.

(9) That any non-consenting interest owner should be afforded the opportunity to object to the actual well costs but that actual well costs should be adopted as the reasonable well costs in the absence of such objection.

(10) That following determination of reasonable well costs, any non-consenting working interest owner that has paid his share of estimated costs should pay to the operator any amount that reasonable well costs exceed estimated well costs and should receive from the operator any amount that paid estimated well costs exceed reasonable well costs.

(11) That $1600.00 per month should be fixed as a reasonable charge for supervision (combined fixed rates) while drilling, and that $250.00 per month should be fixed as a reasonable charge for supervision while producing; that the operator should be authorized to withhold from production the proportionate share of such supervision charge attributable to each non-consenting working interest, and in addition thereto, the operator should be authorized to withhold from production the proportionate share of actual expenditures required for operating the subject well, not in excess of what are reasonable, attributable to each non-consenting working interest.

(12) That all proceeds from production from the subject well which are not disbursed for any reason should be placed in escrow to be paid to the true owner thereof upon demand and proof of ownership.

(13) That upon the failure of the operator of said pooled unit to commence drilling of the well to which said unit is dedicated on or before September 15, 1975, the order pooling said unit should become null and void and of no effect whatsoever.

IT IS THEREFORE ORDERED:

(1) That all mineral interests, whatever they may be, in the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, NMPM, Bell Lake Field, Lea County, New Mexico, are hereby pooled to form a standard 320-acre gas spacing and proration unit to be dedicated to a well to be drilled at an orthodox location for said unit.

PROVIDED HOWEVER, that the operator of said unit shall commence the drilling of said well on or before the 15th day of September, 1975, and shall thereafter continue the drilling of said well with due diligence to a depth sufficient to test the Pennsylvanian formation;

PROVIDED FURTHER, that in the event said operator does not commence the drilling of said well on or before the 15th day of September, 1975, Order (1) of this order shall be null and void and of no effect whatsoever;

PROVIDED FURTHER, that should said well not be drilled to completion, or abandonment, within 120 days after commencement thereof, said operator shall appear before the Commission and show cause why Order (1) of this order should not be rescinded.

(2) That Texas West Oil & Gas Corporation is hereby designated the operator of the subject well and unit.

(3) That after the effective date of this order and within 30 days prior to commencing said well, the operator shall furnish the Commission and each known working interest owner in the subject unit an itemized schedule of estimated well costs.

(4) That within 30 days from the date the schedule of estimated well costs is furnished to him, any non-consenting working interest owner shall have the right to pay his share of estimated well costs to the operator in lieu of paying his share of reasonable well costs out of production, and that any such owner who pays his share of estimated well costs as provided above shall remain liable for operating costs but shall not be liable for risk charges.

(5) That the operator shall furnish the Commission and each known working interest owner an itemized schedule of actual well costs within 90 days following completion of the well; that if no objection to the actual well costs is received by the Commission and the Commission has not objected within 45 days following receipt of said schedule, the actual well costs shall be the reasonable well costs; provided however, that if there is an objection to actual well costs within said 45-day period the Commission will determine reasonable well costs after public notice and hearing.

(6) That within 60 days following determination of reasonable well costs, any non-consenting working interest owner that has paid his share of estimated costs in advance as provided above shall pay to the operator his pro rata share of the amount that reasonable well costs exceed estimated well costs and shall receive from the operator his pro rata share of the amount that estimated well costs exceed reasonable well costs.

(7) That the operator is hereby authorized to withhold the following costs and charges from production:

(a) The pro rata share of reasonable well costs attributable to each non-consenting working interest owner who has not paid his share of estimated well costs within 30 days from the date the schedule of estimated well costs is furnished to him.

(b) As a charge for the risk involved in the drilling of the well, 200 percent of the pro rata share of reasonable well costs attributable to each non-consenting working interest owner who has not paid his share of estimated well costs within 30 days from the date the schedule of estimated well costs is furnished to him.

(8) That the operator shall distribute said costs and charges withheld from production to the parties who advanced the well costs.

(9) That $1600.00 per month is hereby fixed as a reasonable charge for supervision (combined fixed rates) while drilling, and that $250.00 per month is hereby fixed as a reasonable charge for supervision while producing; that the operator is hereby authorized to withhold from production the proportionate share of such supervision charge attributable to each non-consenting working interest, and in addition thereto, the operator is hereby authorized to withhold from production the proportionate share of actual expenditures required for operating such well, not in excess of what are reasonable, attributable to each non-consenting working interest.

(10) That any unsevered mineral interest shall be considered a seven-eighths (7/8) working interest and a one-eighth (1/8) royalty interest for the purpose of allocating costs and charges under the terms of this order.

(11) That any well costs or charges which are to be paid out of production shall be withheld only from the working interests share of production, and no costs or charges shall be withheld from production attributable to royalty interests.

(12) That all proceeds from production from the subject well which are not disbursed for any reason shall be placed in escrow in Lea County, New Mexico, to be paid to the true owner thereof upon demand and proof of ownership; that the operator shall notify the Commission of the name and address of said escrow agent within 90 days from the date of this order.

(13) 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

I. R. TRUJILLO, Chairman

Phil R. Lucero

PHIL R. LUCERO, Member

Joe D. Ramey

JOE D. RAMEY, Member & Secretary

S E A L

jr/

DRAFT

dr/

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. 5493

Order No. R-5039

APPLICATION OF TEXAS WEST OIL
& GAS CORPORATION FOR COMPULSORY
POOLING, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on May 28, 1975 at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this _____ day of June, 1975, 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, Texas West Oil & Gas Corporation, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, NMPM, Bell Lake Field, Lea County, New Mexico.

(3) That the applicant has the right to drill and proposes to drill a well at an orthodox location for said unit in the S/2 of Section 5.

(4) That there are interest owners in the proposed proration unit who have not agreed to pool their interests.

(5) That to avoid the drilling of unnecessary wells, to protect correlative rights, and to afford to the owner of each interest in said unit the opportunity to recover or receive without unnecessary expense his just and fair share of the gas in said pool, the subject application should be approved by pooling all mineral interests, whatever they may be, within said unit.

(6) That the applicant should be designated the operator of the subject well and unit.

(7) That any non-consenting working interest owner should be afforded the opportunity to pay his share of estimated well costs to the operator in lieu of paying his share of reasonable well costs out of production.

(8) That any non-consenting working interest owner that does not pay his share of estimated well costs should have withheld from production his share of the reasonable well costs plus an additional 200 percent thereof as a reasonable charge for the risk involved in the drilling of the well.

(9) That any non-consenting interest owner should be afforded the opportunity to object to the actual well costs but that actual well costs should be adopted as the reasonable well costs in the absence of such objection.

(10) That following determination of reasonable well costs, any non-consenting working interest owner that has paid his share of estimated costs should pay to the operator any amount that reasonable well costs exceed estimated well costs and should receive from the operator any amount that paid estimated well costs exceed reasonable well costs.

(11) That $1600.00 per month should be fixed as a reasonable charge for supervision (combined fixed rates) while drilling, and that $250.00 per month should be fixed as a reasonable charge for supervision while producing; that the operator should be authorized to withhold from production the proportionate share of such supervision charge attributable to each non-consenting working interest, and in addition thereto, the operator should be authorized to withhold from production the proportionate share of actual expenditures required for operating the subject well, not in excess of what are reasonable, attributable to each non-consenting working interest.

~~the proportionate share of actual expenditures required for~~ operating the subject well, not in excess of what are reasonable, attributable to each non-consenting working interest.

(12) That all proceeds from production from the subject well which are not disbursed for any reason should be placed in escrow to be paid to the true owner thereof upon demand and proof of ownership.

(13) That upon the failure of the operator of said pooled unit to commence drilling of the well to which said unit is dedicated on or before September 15, 1975, the order pooling said unit should become null and void and of no effect whatsoever.

IT IS THEREFORE ORDERED:

(1) That all mineral interests, whatever they may be, in the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, NMPM, Bell Lake Field, Lea County, New Mexico, are hereby pooled to form a standard 320- acre gas spacing and proration unit to be dedicated to a well to be drilled at an orthodox location ~~in said unit~~ 1650' for said unit.

PROVIDED HOWEVER, that the operator of said unit shall commence the drilling of said well on or before the 15th day of September, 1975, and shall thereafter continue the drilling of said well with due diligence to a depth sufficient to test the Pennsylvanian formation;

PROVIDED FURTHER, that in the event said operator does not commence the drilling of said well on or before the 15th day of September, 1975, Order (1) of this order shall be null and void and of no effect whatsoever;

PROVIDED FURTHER, that should said well not be drilled to completion, or abandonment, within 120 days after commencement thereof, said operator shall appear before the Commission and show cause why Order (1) of this order should not be rescinded.

(2) That Texas West Oil & Gas Corporation is hereby designated the operator of the subject well and unit.

(3) That after the effective date of this order and ~~at least~~ within 30 days prior to commencing said well, the operator shall furnish the Commission and each known working interest owner in the subject unit an itemized schedule of estimated well costs.

(4) That within 30 days from the date the schedule of estimated well costs is furnished to him, any non-consenting working interest owner shall have the right to pay his share of estimated well costs to the operator in lieu of paying his share of reasonable well costs out of production, and that any such owner who pays his share of estimated well costs as provided above shall remain liable for operating costs but shall not be liable for risk charges.

(5) That the operator shall furnish the Commission and each known working interest owner an itemized schedule of actual well costs within 90 days following completion of the well; that if no objection to the actual well costs is received by the Commission and the Commission has not objected within 45 days following receipt of said schedule, the actual well costs shall be the reasonable well costs; provided however, that if there is an objection to actual well costs within said 45-day period the Commission will determine reasonable well costs after public notice and hearing.

(6) That within 60 days following determination of reasonable well costs, any non-consenting working interest owner that has paid his share of estimated costs in advance as provided

above shall pay to the operator his pro rata share of the amount that reasonable well costs exceed estimated well costs and shall receive from the operator his pro rata share of the amount that estimated well costs exceed reasonable well costs.

(7) That the operator is hereby authorized to withhold the following costs and charges from production:

(A) The pro rata share of reasonable well costs attributable to each non-consenting working interest owner who has not paid his share of estimated well costs within 30 days from the date the schedule of estimated well costs is furnished to him.

(B) As a charge for the risk involved in the drilling of the well, 200 percent of the pro rata share of reasonable well costs attributable to each non-consenting working interest owner who has not paid his share of estimated well costs within 30 days from the date the schedule of estimated well costs is furnished to him.

(8) That the operator shall distribute said costs and charges withheld from production to the parties who advanced the well costs.

(9) That $1600.00 per month is hereby fixed as a reasonable charge for supervision (combined fixed rates) while drilling, and that $200.00 per month is hereby fixed as a reasonable charge for supervision while producing; that the operator is hereby authorized to withhold from production the proportionate share of such supervision charge attributable to each non-consenting working interest, and in addition thereto, the operator is hereby authorized to withhold from production the proportionate share of actual expenditures required for operating such well, not in excess of what are reasonable, attributable to each non-consenting working interest.

~~not in excess of what are reasonable, attributable to each non-consenting working interest.~~

(10) That any unsevered mineral interest shall be considered a seven-eighths (7/8) working interest and a one-eighth (1/8) royalty interest for the purpose of allocating costs and charges under the terms of this order.

(11) That any well costs or charges which are to be paid out of production shall be withheld only from the working interests share of production, and no costs or charges shall be withheld from production attributable to royalty interests.

(12) That all proceeds from production from the subject well which are not disbursed for any reason shall be placed in escrow in Lea County, New Mexico, to be paid to the true owner thereof upon demand and proof of ownership; that the operator shall notify the Commission of the name and address of said escrow agent within 90 days from the date of this order.

(13) 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.

OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

I. R. TRUJILLO
CHAIRMAN

LAND COMMISSIONER
PHIL R. LUCERO
MEMBER

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

Mr. Clarence Hinkle
Hinkle, Bondurant, Cox & Eaton
Attorneys at Law
Post Office Box 10
Roswell, New Mexico 88201

Re: CASE NO. 5493
ORDER NO. R-5039

Applicant:

Texas West Oil & Gas Corp.

Dear Sir:

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

Yours very truly,

JOE D. RAMEY
Secretary-Director

JDR/fd

Copy of order also sent to:

Hobbs OCC x
Artesia OCC
Aztec OCC

Other Mr. Jason Kellahin

J. R. MODRALL
JAMES E. SPERLING
JOSEPH E. ROEHL
GEORGE T. HARRIS, JR.
DANIEL A. SISK
LELAND S. SEDBERRY, JR.
ALLEN C. DEWEY, JR.
FRANK H. ALLEN, JR.
JAMES A. PARKER
JOHN R. COONEY
KENNETH L. HARRIGAN
PETER J. ADANG
DALE W. EK
DENNIS J. FALK

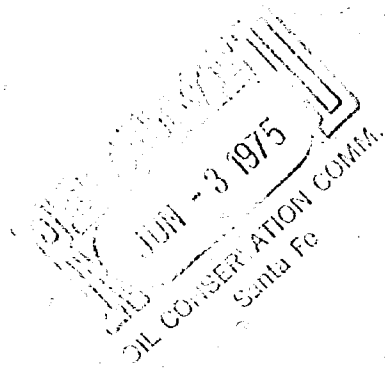
ARTHUR D. MELENDRES
BRUCE D. BLACK
JOE R. G. FULCHER
MEL E. YOST
JAMES P. HOUGHTON
GEORGE J. HOPKINS
PAUL M. FISH
JUDY A. FRY

LAW OFFICES OF
MODRALL, SPERLING, ROEHL, HARRIS & SISK
PUBLIC SERVICE BUILDING
P. O. BOX 2168
ALBUQUERQUE, NEW MEXICO 87103

JOHN F. SIMMS (1885-1954)
AUGUSTUS T. SEYMOUR
(1907-1965)

TELEPHONE 243-4511
AREA CODE 505

May 30, 1975



Oil Conservation Commission
Post Office Box 2088
Santa Fe, New Mexico 87501

Attention: Ms. Ida Rodriquez

Re: Application of Texas West Oil & Gas Corp. for Compulsory Pooling, Lea County, New Mexico

Case 5493

Dear Ms. Rodriquez:

This office represents Exxon Company, U.S.A. and on their behalf we would appreciate being provided a copy of the Commission's order as soon as the same is entered with reference to the above application. Unfortunately, I do not have the case number assigned to the application, but it did appear on the docket for the examiners' hearing to be held on May 28, 1975, and concerned compulsory pooling of the East 1/2 of Section 5, Township 24,South, Range 34 East, Lea County, New Mexico.

Your furnishing to us a copy of the order would be greatly appreciated.

Respectfully yours,

Dale W. Ek

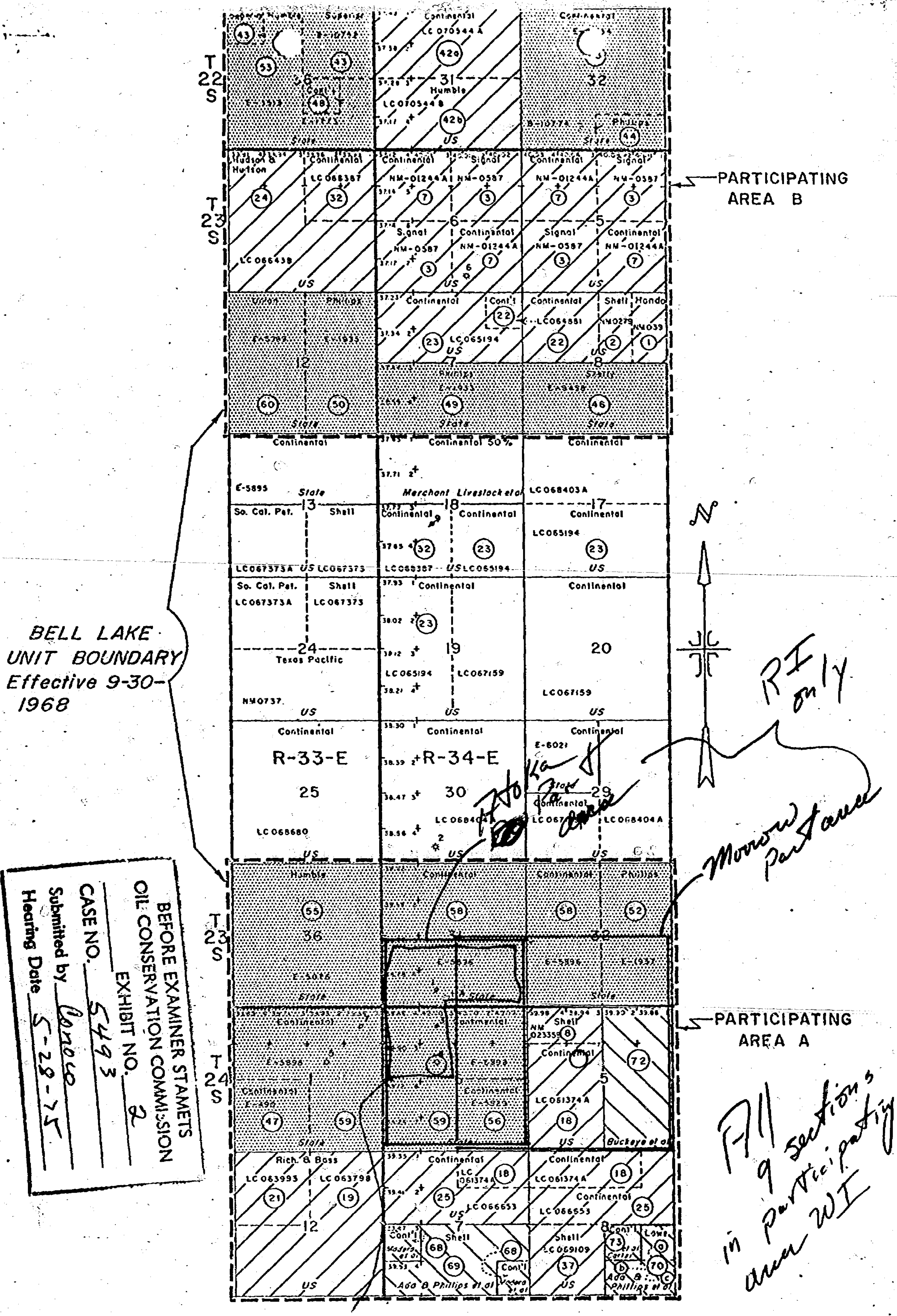
DWE:slg
cc: Mr. Jack Dallious
Exxon Company, U.S.A.
P. O. Box 1600
Midland, Texas 79701

PAYOUT STATUS
BELL LAKE UNIT - SOUTH AREA
AS OF DEC. 31, 1974

Conoco 100%	Well No. 1-A .6184005	Well No. 4 .6184005	Well No. 5 .6184005	Well No. 14 .7719611	Projected Income	South Area	Texas West Share
Revenue	60,653	2,508,872	231,060	241,183		3,041,768	
Expense Intan.	6	1,165,065	465,705	461,269		2,092,045	
Deprec. Addns.	58,142	170,276	155,821	157,202		541,441	
Retirements	(13)	239,729	1,554,666	-		1,794,382	
Operating Exp.	11,772	363,685	47,715	22,669		445,841	
Bonus Cost	-	(3,454)	10,688	-		7,234	
Payout	(9,254)	573,571	(2,003,535)	(399,957)		(1,839,175)	
W. I. Owners							
Revenue	98,080	4,057,034	373,641	312,429		4,841,184	59,020
Exp. Intan.	10	1,883,997	753,080	597,529		3,234,616	39,434
Depr. Addns.	94,020	275,349	251,974	326,408		947,751	11,554
Operating Exp.	19,036	588,106	77,159	29,365		713,666	8,700
Payout	(14,986)	1,309,582	(708,572)	(640,873)		(54,849)	(669)
Non-consent penalty	56,533	1,373,726	541,106	476,651		2,448,016	29,844
Payout status of non-consenting WIO	(71,519)	(64,144)	(1,249,678)	(1,117,524)		(2,502,865)	(30,513)
Estimated income							
1st Quarter 1975					792,940	(1,709,925)	(20,846)
2nd " "					792,940	(916,985)	(11,179)
3rd " "					792,940	(124,045)	(1,512)
4th " "					792,940	668,895	8,154

BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION
EXHIBIT NO. 3
CASE NO. 5493
Submitted by Conoco
Hearing Date 5-28-75

Does applicant have the right
to drill



BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION
EXHIBIT NO. 2
CASE NO. 5493
Submitted by Conoco
Hearing Date 5-28-75

—LEGEND—

- Federal Acreage
- State Acreage
- Fee Acreage

CONTINENTAL OIL COMPANY
BELL LAKE UNIT
LEA COUNTY, NEW MEXICO
(7) TRACT NUMBERS

SCALE IN MILES
0 1/2 1

Exhibit A

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

The State of New Mexico by its Oil Conservation Commission hereby gives notice pursuant to law and the Rules and Regulations of said Commission promulgated thereunder of the following public hearing to be held at 9 o'clock a.m. on JULY 9, 1975, OIL CONSERVATION COMMISSION CONFERENCE ROOM, STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO.

STATE OF NEW MEXICO TO:

All named parties and persons
having any right, title, interest
or claim in the following cases,
and notice to the public.

(NOTE: All land descriptions herein refer to the New Mexico Principal Meridian, whether or not so stated.)

CASE 5493: (DE NOVO)

Application of Texas West Oil & Gas Corporation for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, Bell Lake Field, Lea County, New Mexico, to be dedicated to a well to be drilled at an orthodox location for said unit in Unit G of said Section 5. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof, as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for the risk involved in drilling said well.

Upon application of Continental Oil Company, this case will be heard De Novo pursuant to the provisions of Rule 1220.

GIVEN under the seal of the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 20th day of June, 1975.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JOE D. RAMEY, Secretary-Director

S E A L

CLARENCE E. HINKLE
W. E. BONDURANT, JR. (1914-1973)
LEWIS C. COX, JR.
PAUL W. EATON, JR.
CONRAD E. COFFIELD
HAROLD L. HENSLEY, JR.
STUART D. SHANOR
C. D. MARTIN
PAUL J. KELLY, JR.

JAMES H. BOZARTH
RONALD G. HARRIS
JAMES H. ISBELL

LAW OFFICES
HINKLE, BONDURANT, COX & EATON
600 HINKLE BUILDING
POST OFFICE BOX 10
ROSWELL, NEW MEXICO 88201

TELEPHONE (505) 622-6510

MR. ISBELL LICENSED
IN TEXAS ONLY

MIDLAND, TEXAS OFFICE
521 MIDLAND TOWER
(915) 683-4691

June 30, 1975

Mr. Joe D. Ramey
Secretary-Director
New Mexico Oil Conservation Commission
P.O. Box 2088
Santa Fe, New Mexico 87501

Dear Mr. Ramey:

This will refer to Case No. 5493 which has been set for hearing at 9:00 a.m. on July 9, 1975 before the full Commission. This is a de novo hearing based upon the application of Texas West Oil & Gas Corporation for compulsory pooling.

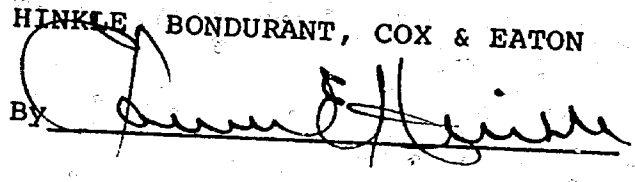
This case was originally heard at an examiner's hearing on May 28, 1975 and on June 10, 1975 the Commission entered an order approving the application for compulsory pooling, which requires the commencement of a well on or before the 15th day of September, 1975.

We have received copy of the letter of Jason W. Kellahin representing Continental Oil Company dated June 27, 1975 requesting that this case be continued to some future date convenient to the Commission, preferably for about 30 days. I have discussed this matter with Mr. L. N. Dunnavant, President and principal owner of Texas West Oil & Gas Corporation, and he advises that he is ready to proceed with the drilling of the well and would like for the Commission to proceed with the hearing on July 9 so that if the Commission sees fit to approve the application for compulsory pooling there will be no appreciable delay in the drilling of the well.

We do not feel that Continental will in any way be prejudiced by proceeding with the hearing as set and respectfully request that the continuance of the case be denied.

Yours very truly,

HINKLE, BONDURANT, COX & EATON

By 

CEH:cs
cc: Jason W. Kellahin
cc: L. N. Dunnavant

KELLAHIN AND FOX
ATTORNEYS AT LAW
500 DON GASPAR AVENUE
POST OFFICE BOX 1769
SANTA FE, NEW MEXICO 87501

JASON W. KELLAHIN
ROBERT E. FOX
W. THOMAS KELLAHIN

TELEPHONE 982-4315
AREA CODE 505

June 27, 1975

Mr. Joe D. Ramey, Secretary-Director
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: Case No. 5493 (De Novo) Application of Texas West Oil &Gas Corporation for Compulsory Pooling

Dear Mr. Ramey:

The above case is presently set for hearing before the Commission on July 9 at 9 A. M. Two of Continental Oil Company's witnesses will not be available on that date, one going on vacation and the other being on another assignment. We feel the testimony of both of these witnesses is essential to our case.

We respectfully request that this case be continued to some future date convenient to the Commission, preferrably about thirty days later.

Your consideration of this request will be appreciated.

Sincerely,

Jason W. Kellahin

Jason W. Kellahin

JWK:ss
cc: Clarence E. Hinkle, Esq.

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. 5493
Order No. R-5039

APPLICATION OF TEXAS WEST OIL
& GAS CORPORATION FOR COMPULSORY
POOLING, LEA COUNTY, NEW MEXICO.

APPLICATION FOR HEARING DE NOVO

Comes now Continental Oil Company, a party adversely affected by the order entered in the above entitled case, and pursuant to the provisions of Section 65-3-11.1, New Mexico Statutes Annotated, 1953 Compilation, applies to the Oil Conservation Commission of New Mexico for a hearing de novo in this case.

Respectfully submitted,

CONTINENTAL OIL COMPANY

By Jason W. Kellahin
KELLAHIN & FOX
P. O. Box 1769
Santa Fe, New Mexico 87501

ATTORNEYS FOR APPLICANT

copy of
legal notice
mailed to
Jason Kellahin
& Clarence Hinkle
6/20/75
JSM

Dockets Nos. 18-75 and 19-75 are tentatively set for hearing on July 30 and August 13, 1975. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: COMMISSION HEARING - WEDNESDAY - JULY 25, 1975

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

CASE 5493: (DE NOVO) (CONTINUED & READVERTISED)

Application of Texas West Oil & Gas Corporation for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, Bell Lake Field, Lea County, New Mexico, to be dedicated to a well to be drilled at an orthodox location for said unit in Unit G of said Section 5. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof, as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for the risk involved in drilling said well.

Upon application of Continental Oil Company, this case will be heard De Novo pursuant to the provisions of Rule 1220.

OIL CONSERVATION COMMISSION
P. O. BOX 2088
SANTA FE NEW MEXICO 87501

July 1, 1975

COPY

Mr. Jason Kellahin
Kellahin and Fox
Attorneys at Law
Post Office Box 1769
Santa Fe, New Mexico 87501

Dear Mr. Kellahin:

This is to notify you that, in accordance with your request, Case No. 5493 is hereby continued until 9:00 a.m. on July 25, 1975.

Yours very truly,

JOE D. RAMEY
Secretary-Director

JDR/fd

cc: Mr. Clarence Hinkle
Post Office Box 10
Roswell, New Mexico 88201

TWO&G Form 106

TEXAS WEST OIL & GAS CORPORATION
609 Midland National Bank Building
Midland, Texas 79701

AUTHORITY FOR EXPENDITURE

Date: April 23, 1975

AFE # 108

Wildcat	Development
( ) Drilling	(X) Drilling
( ) Completion	(X) Completion
	( ) Drill Deeper
	( ) Workover

Lease Name: Madera
Well No.: 1
Proposed Depth: 14,200'
County: Lea
State: New Mexico
Well Location: 1980' FN & EL- Sec. 5, T-24-S, R-34-E
Spud Date:
Estimated Days to Drill: 100
To Complete: 12

INTANGIBLE WELL COST	DRY HOLE	COMPLETED WELL
Access, Location & Roads	$	$ 15,000
Rig Move		20,000
Footage Cost		
Day Work Cost (100 days @ $2500; 12 days @ $2400)		278,800
Bits & Reamers		55,500
Fuel		
Water		8,000
Mud & Chemicals		62,000
Cementing & Services		45,000
Coring		
Surveying & Testing		20,000
Mud Logging		5,000
Perforating		5,500
Stimulation		7,500
Transportation		10,000
Drilling Overhead Cost		5,500
Other Drilling Expense		15,000
Contingencies		15,000
Total Intangible Well Cost	$	$ 567,800

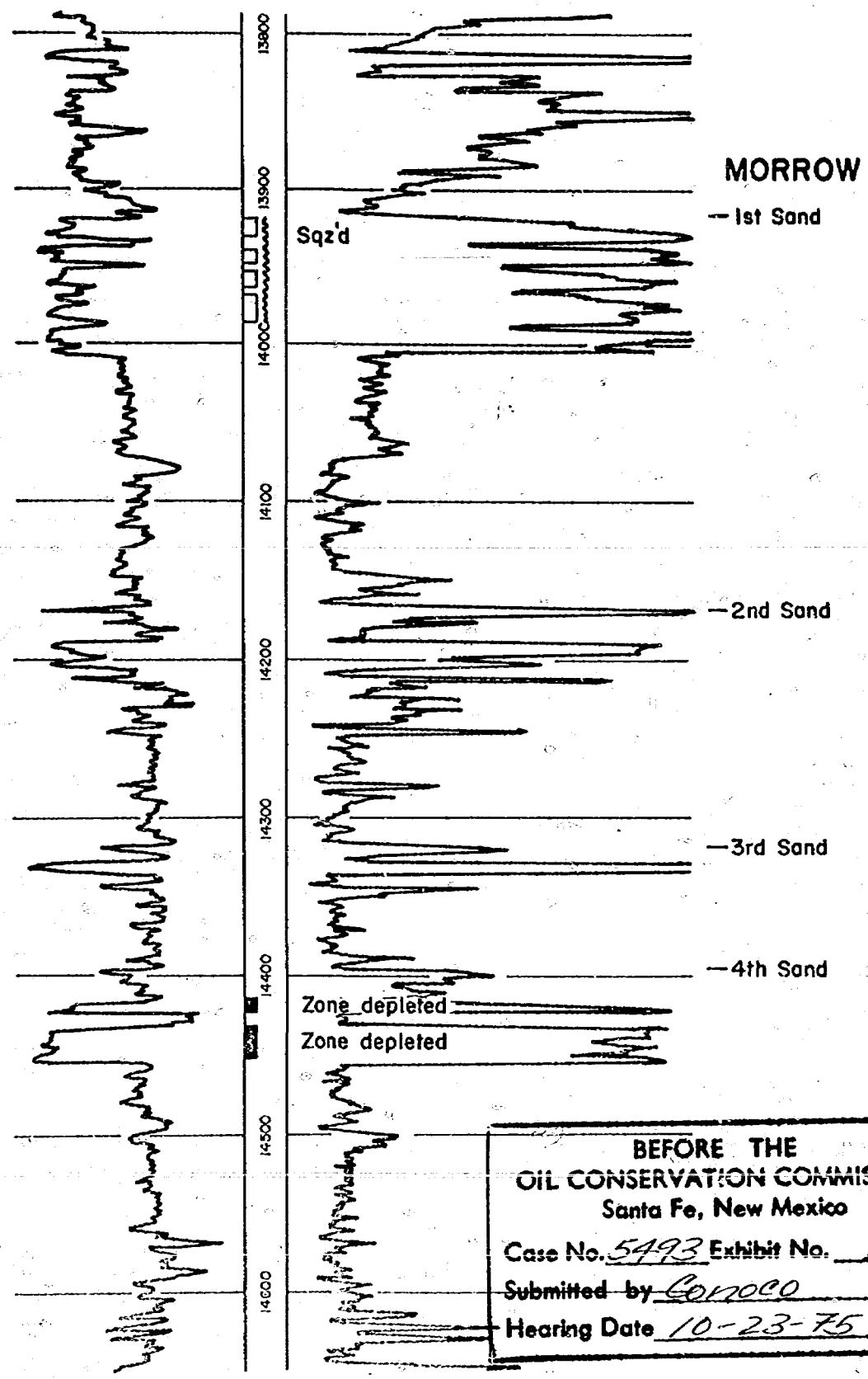
TANGIBLE WELL COSTS					
30 '	of 30 "	Conductor Csg.	$	$ 450
500 '	of 16 "	Surface Casing		9,200
5,200 '	of 10-3/4 "	Intermediate Csg.		69,000
12,000 '	of 7-5/8 "	Intermediate Csg.		144,000
'	of "	Production Casing		
2,600 '	of 5 "	Liner		18,500
13,800 '	of 2-7/8 "	Tubing		55,200
Liner Equipment				2,500
Wellhead Equipment				24,000
Producing Facilities, Tank Batteries, Flowlines				35,000
Packers & Other Subsurface Tools				7,500
Contingencies				10,000
Total Tangible Well Costs			$	$ 375,350
TOTAL WELL COST			$	$ 943,150

Acreage Cost $
Geological (Acquisition) Cost
TOTAL WELL COST + ACREAGE & GEOLOGICAL COSTS $ $ 943,150.

APPROVED BY:

COMPANY:

Continental Oil
Bell Lake Unit No. 5
Unit G - Sec. 1 - 24S - 33E



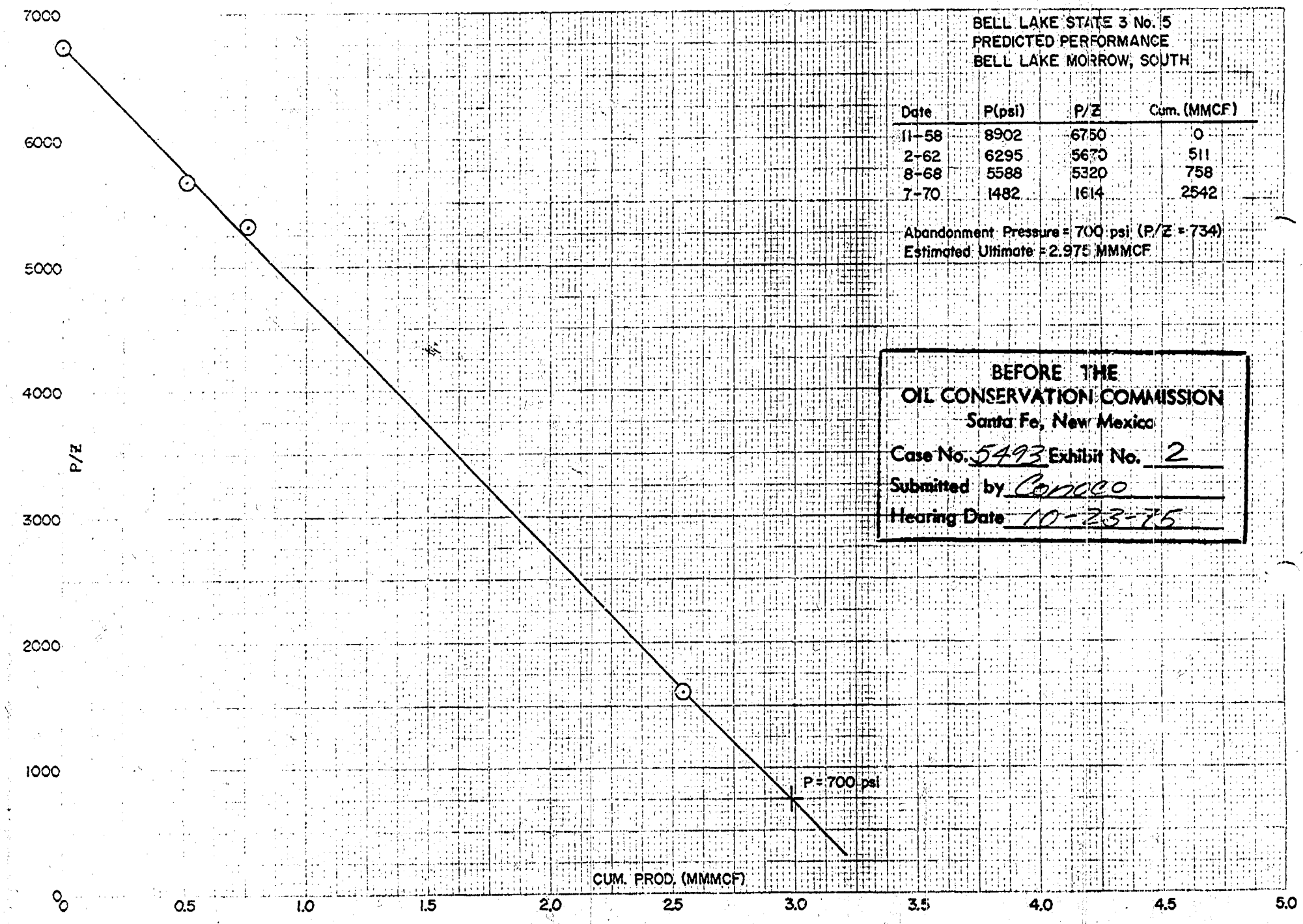
BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 1
Submitted by Conoco
Hearing Date 10-23-75

BELL LAKE STATE 3 No. 5
PREDICTED PERFORMANCE
BELL LAKE MORROW, SOUTH

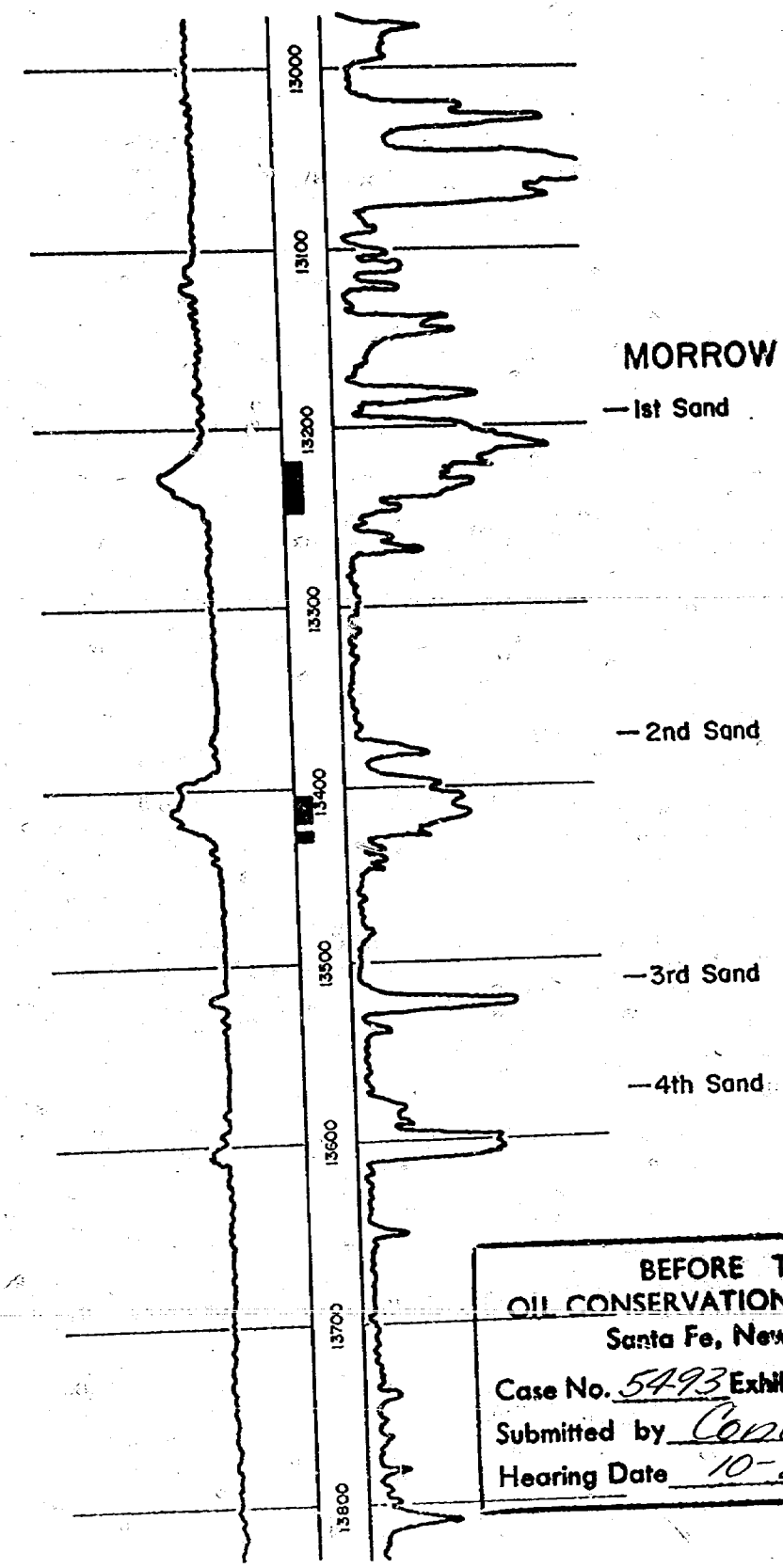
Date	P(psi)	P/Z	Cum. (MMCF)
11-58	8902	6750	0
2-62	6295	5670	511
8-68	5588	5320	758
7-70	1482	1614	2542

Abandonment Pressure = 700 psi (P/Z = 734)
Estimated Ultimate = 2.975 MMMCF

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 2
Submitted by Conoco
Hearing Date 10-23-75



Continental Oil
Bell Lake State 1 No. 1
(formerly Bell Lake No. 1-A)
Unit O - Sec. 31-23S-34E



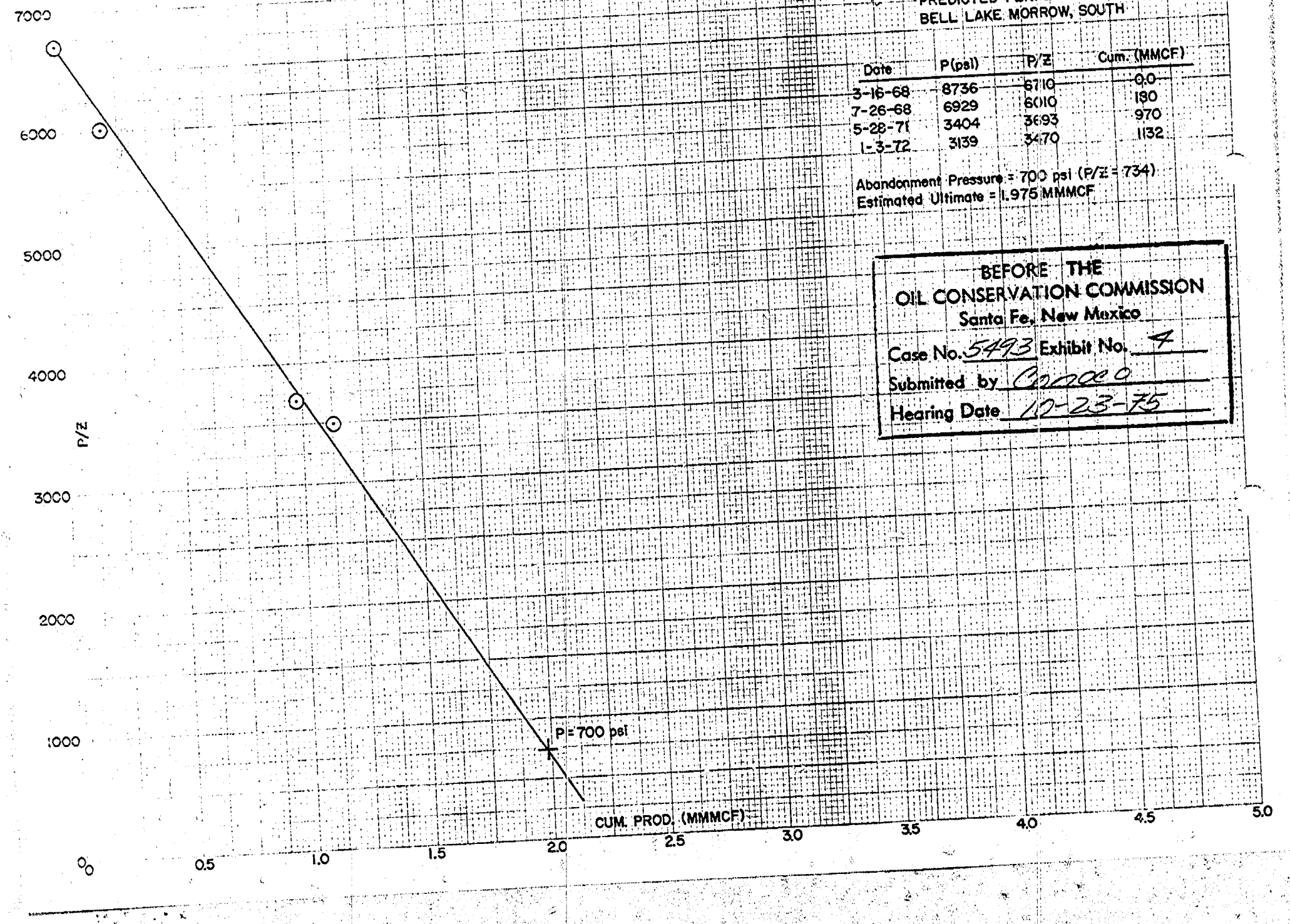
BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 3
Submitted by Conoco
Hearing Date 10-23-75

BELL LAKE STATE I No. 1
PREDICTED PERFORMANCE
BELL LAKE MORROW, SOUTH

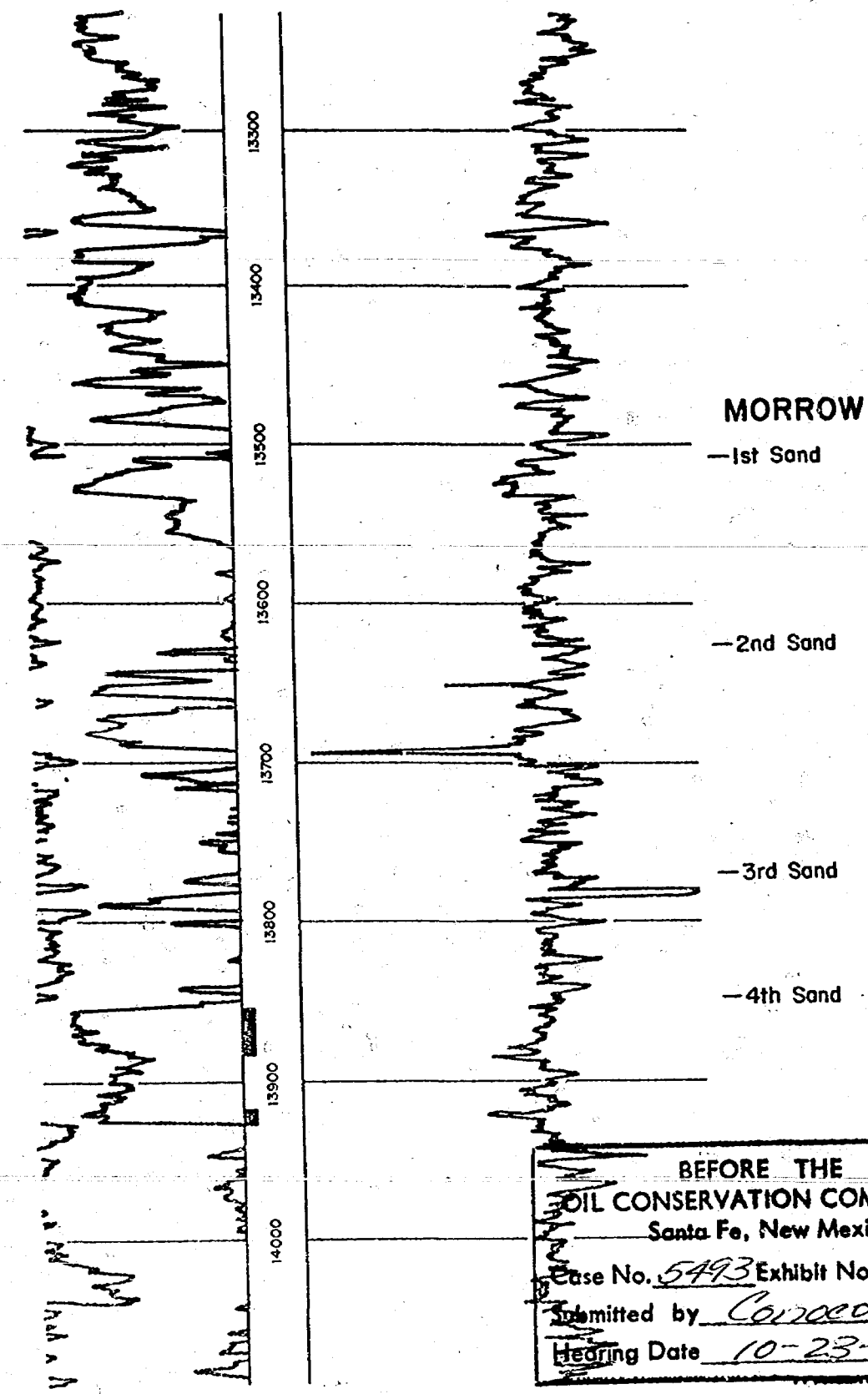
Date	P(psi)	P/Z	Cum. (MMCF)
3-16-68	8736	6710	0.0
7-26-68	6929	6010	180
5-28-71	3404	3693	970
1-3-72	3139	3470	1132

Abandonment Pressure = 700 psi (P/Z = 734)
Estimated Ultimate = 1.975 MMMCF

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 4
Submitted by Conoco
Hearing Date 12-23-75



Continental Oil
Bell Lake Unit No. 14
Unit F - Sec. 5 - 24S - 34E



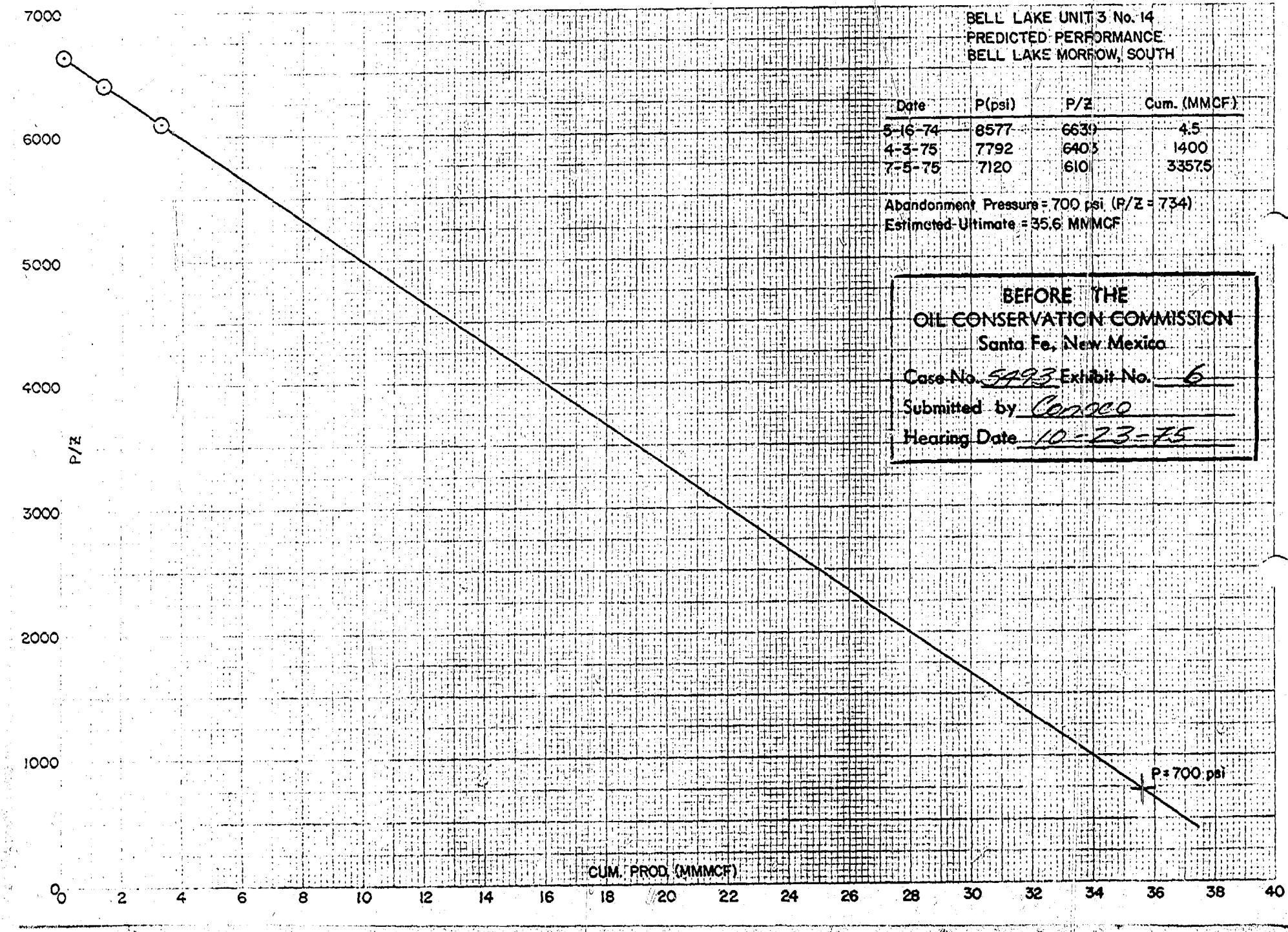
BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 5
Submitted by Conoco
Hearing Date 10-23-75

BELL LAKE UNIT 3 No. 14
PREDICTED PERFORMANCE
BELL LAKE MORROW, SOUTH

Date	P(psi)	P/Z	Cum. (MMCF)
5-16-74	8577	6631	4.5
4-3-75	7792	6403	1400
7-5-75	7120	610	3357.5

Abandonment Pressure = 700 psi (P/Z = 734)
Estimated Ultimate = 35.6 MMMCF

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5993 Exhibit No. 6
Submitted by Conoco
Hearing Date 10-23-75

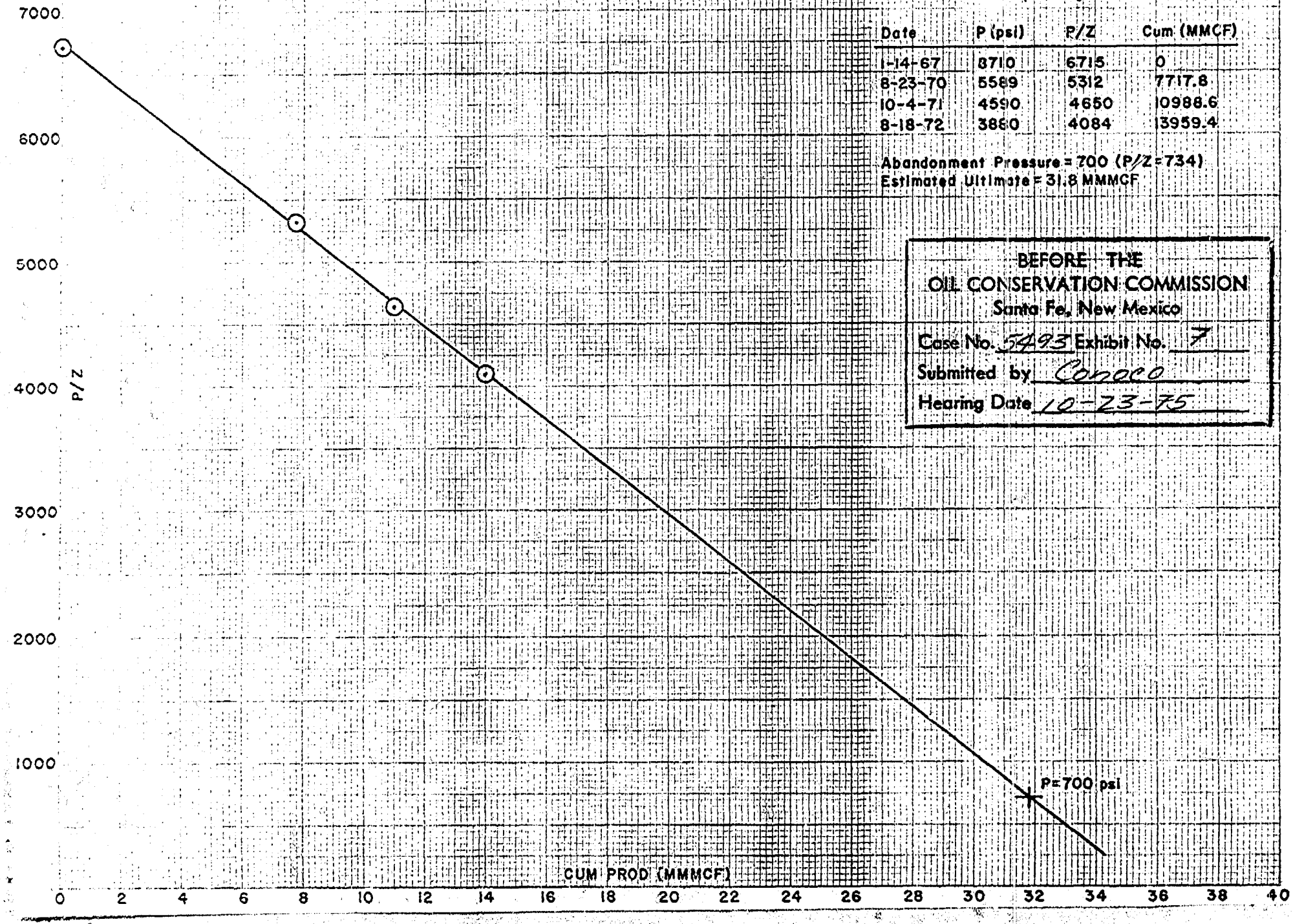


Antelope Ridge Unit No. 1
Predicted Performance
Antelope Ridge Morrow

Date	P (psi)	P/Z	Cum (MMCF)
1-14-67	8710	6715	0
8-23-70	5589	5312	7717.8
10-4-71	4590	4650	10988.6
8-18-72	3860	4084	13959.4

Abandonment Pressure = 700 (P/Z = 734)
Estimated Ultimate = 31.8 MMMCF

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 7
Submitted by Conoco
Hearing Date 10-23-75

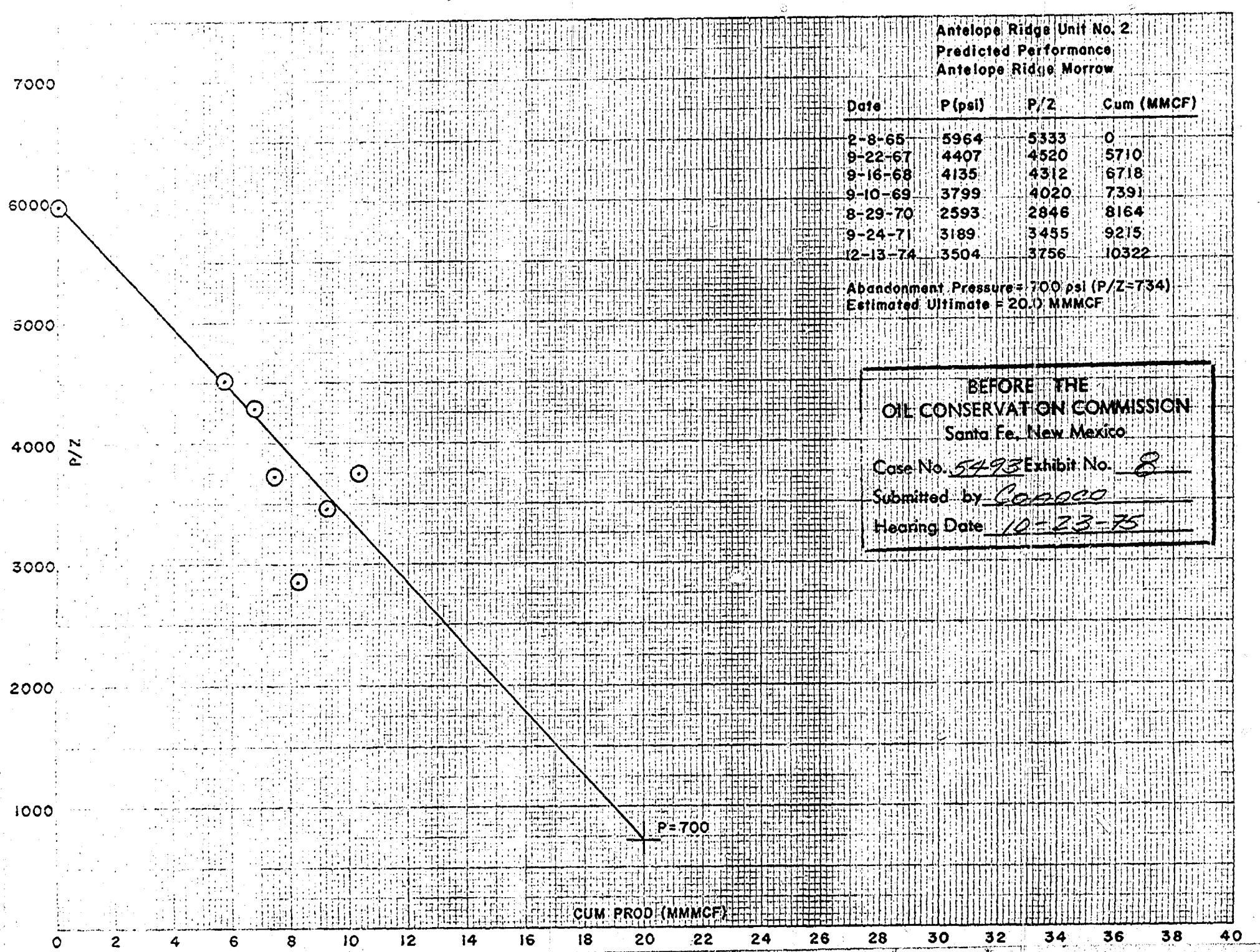


Antelope Ridge Unit No. 2
Predicted Performance
Antelope Ridge Morrow

Date	P (psi)	P/Z	Cum (MMCF)
2-8-65	5964	5333	0
9-22-67	4407	4520	5710
9-16-68	4135	4312	6718
9-10-69	3799	4020	7391
8-29-70	2593	2846	8164
9-24-71	3189	3455	9215
12-13-74	3504	3756	10322

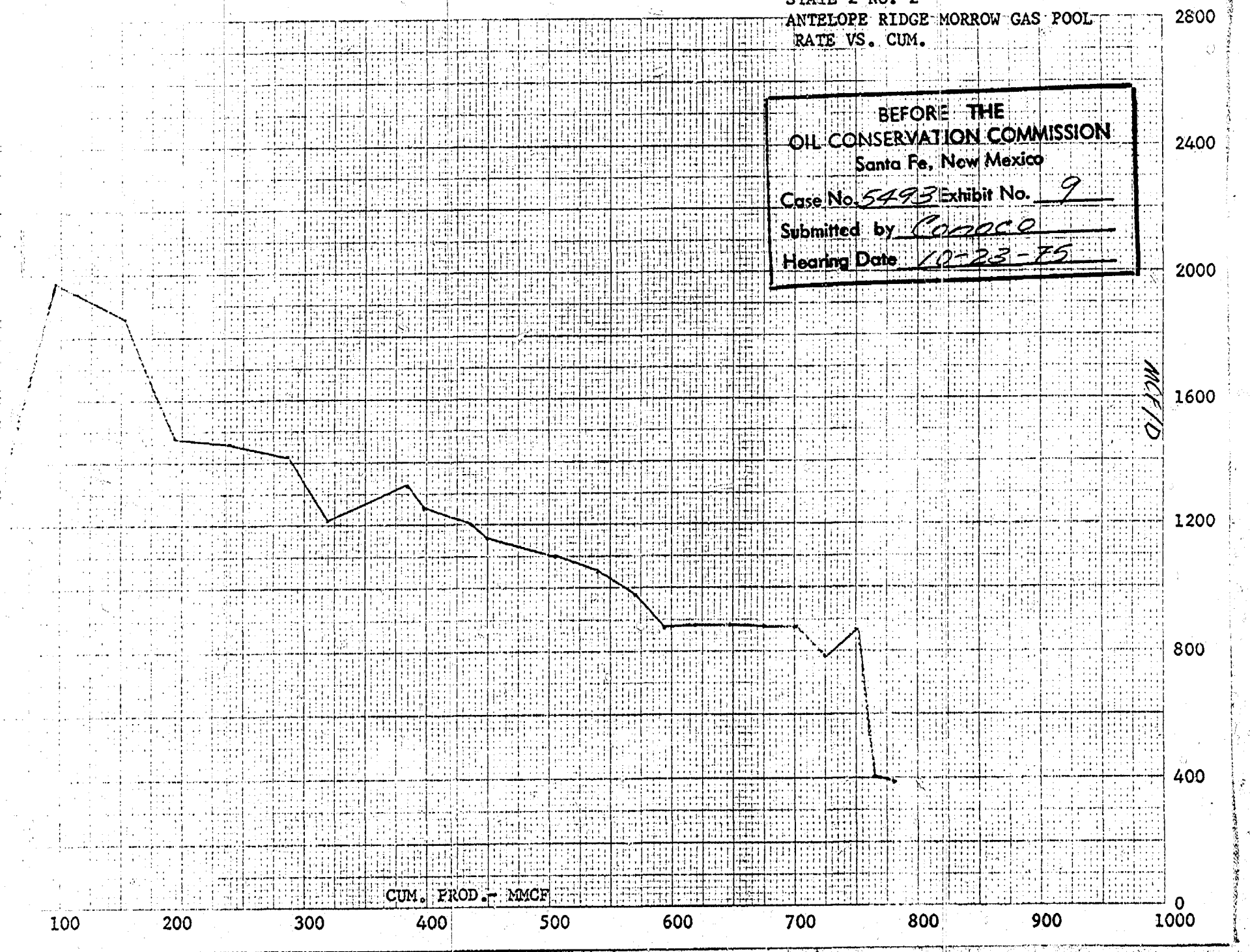
Abandonment Pressure = 700 psi (P/Z=734)
Estimated Ultimate = 20.0 MMMCF

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 8
Submitted by Conoco
Hearing Date 10-23-75



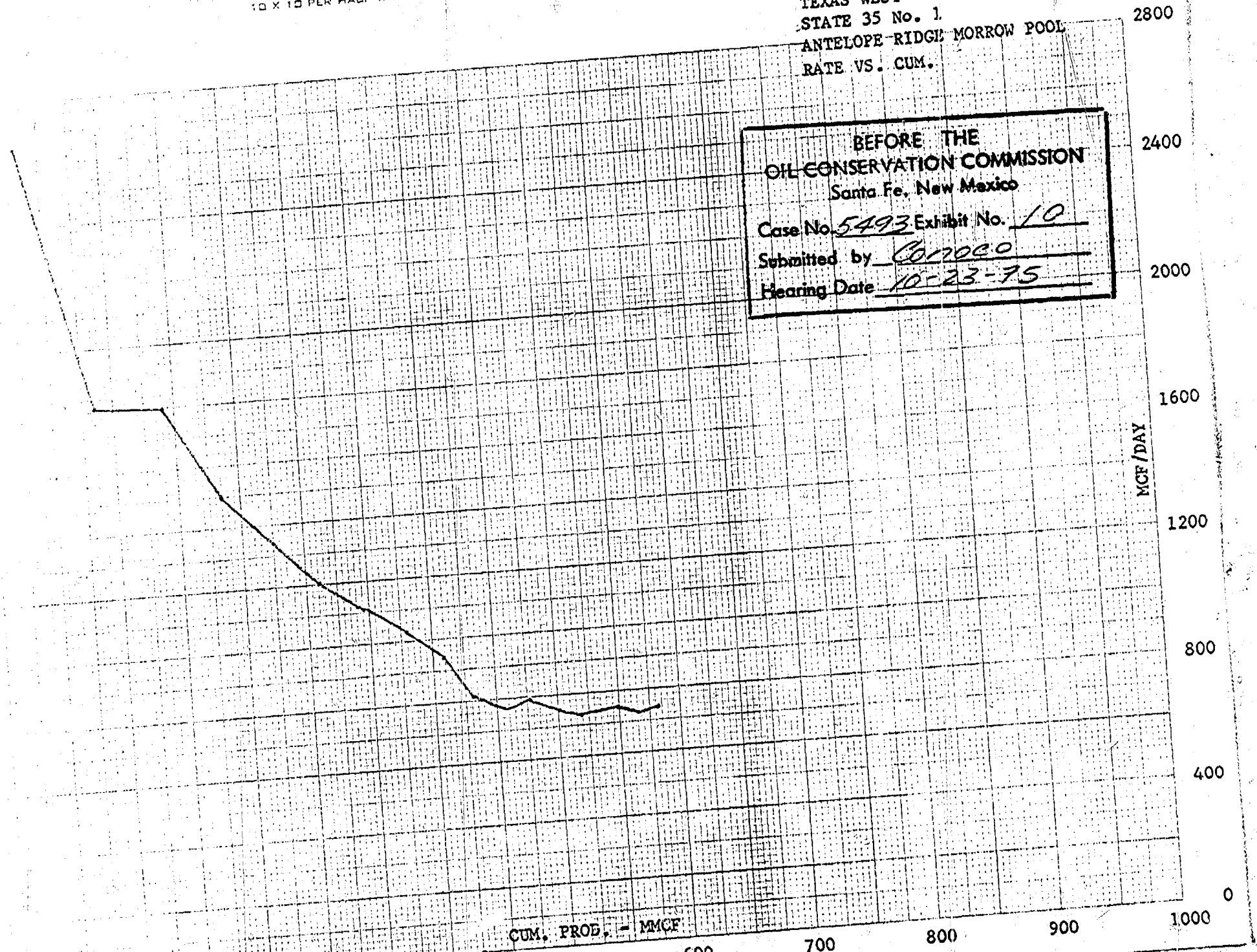
TEXAS WEST
STATE 2 NO. 2
ANTELOPE RIDGE MORROW GAS POOL
RATE VS. CUM.

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 9
Submitted by Conoco
Hearing Date 12-23-75



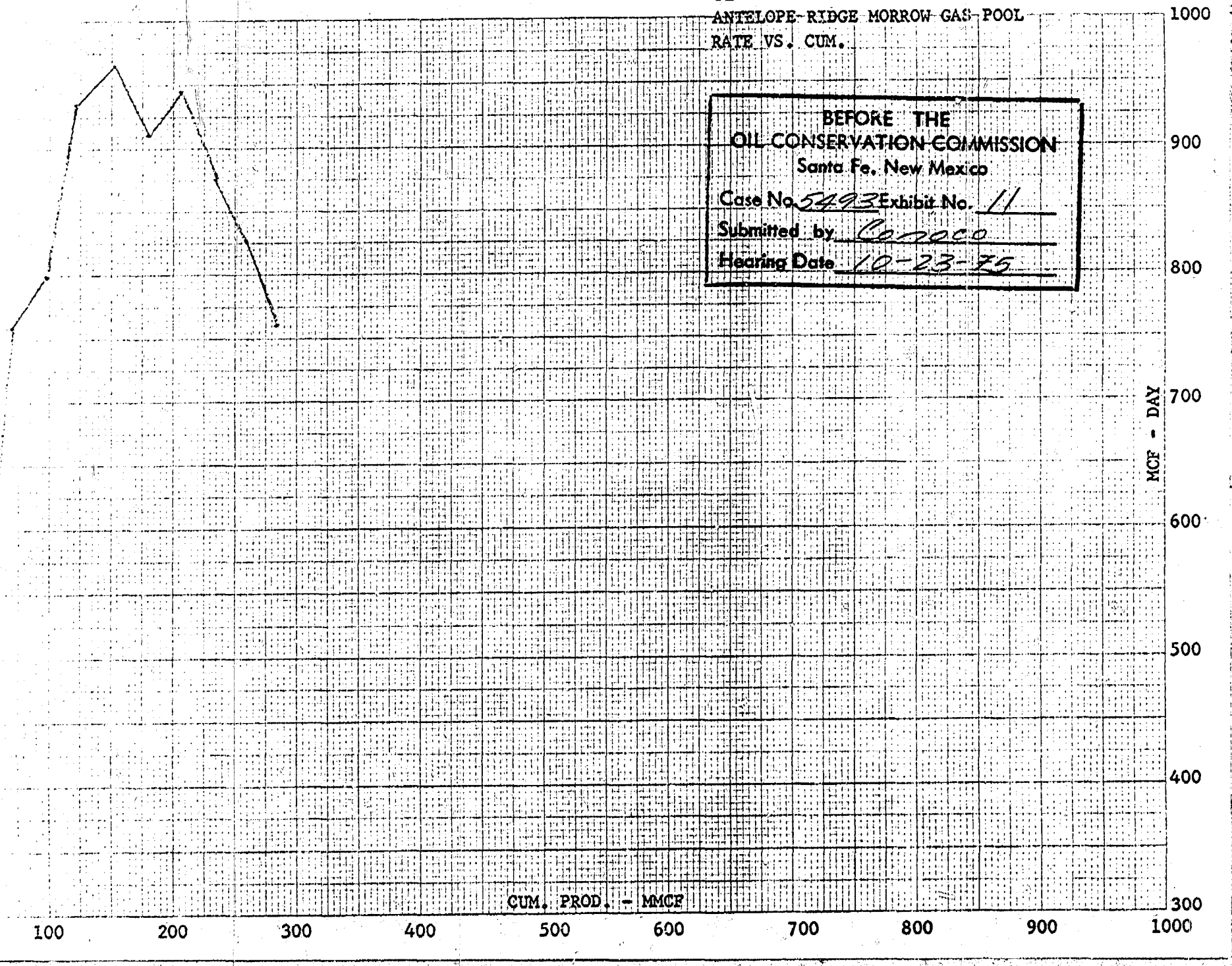
TEXAS WEST
STATE 35 No. 1
ANTELOPE RIDGE MORROW POOL
RATE VS. CUM.

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 10
Submitted by Gonzales
Hearing Date 10-23-75



TEXAS WEST
FEDERAL 9 NO. 1
ANTELOPE-RIDGE MORROW GAS POOL
RATE VS. CUM.

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 11
Submitted by Conoco
Hearing Date 10-23-75

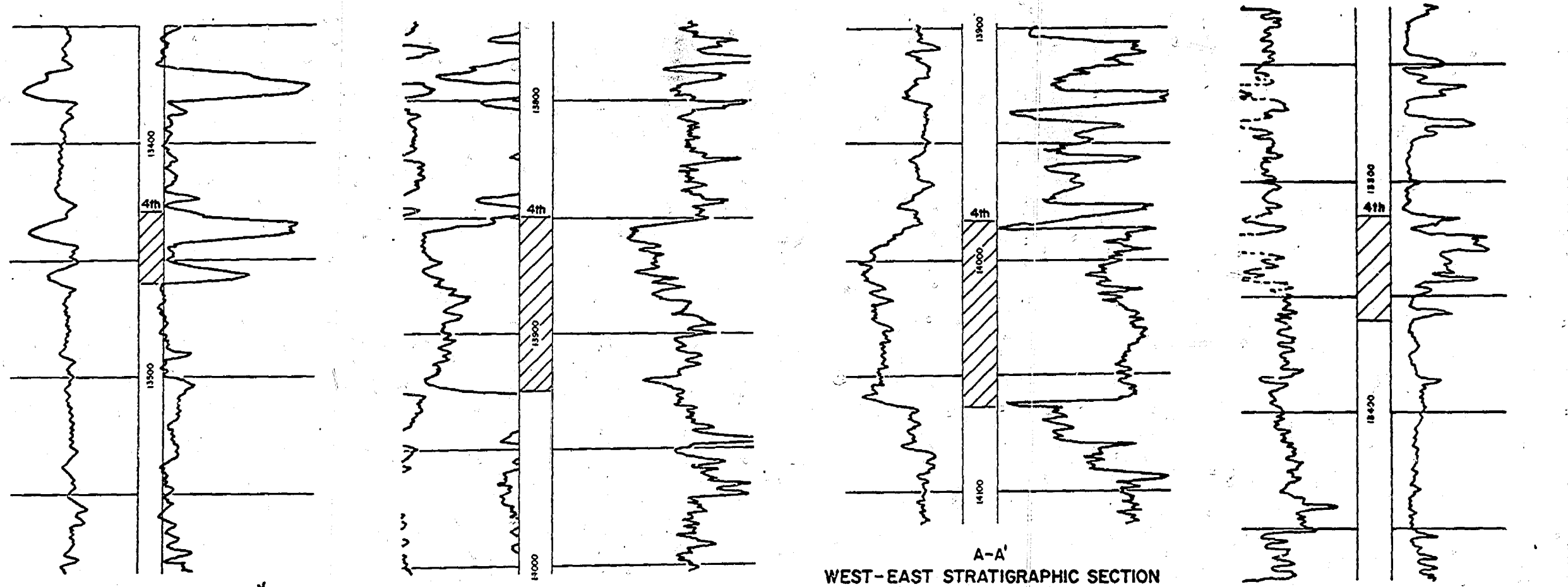


Continental Oil .
Bell Lake Unit No. 4
F-6-24S-34E
DF 3626

Continental Oil
Bell Lake Unit No. 14
F-5-24S-34E
DF 3619

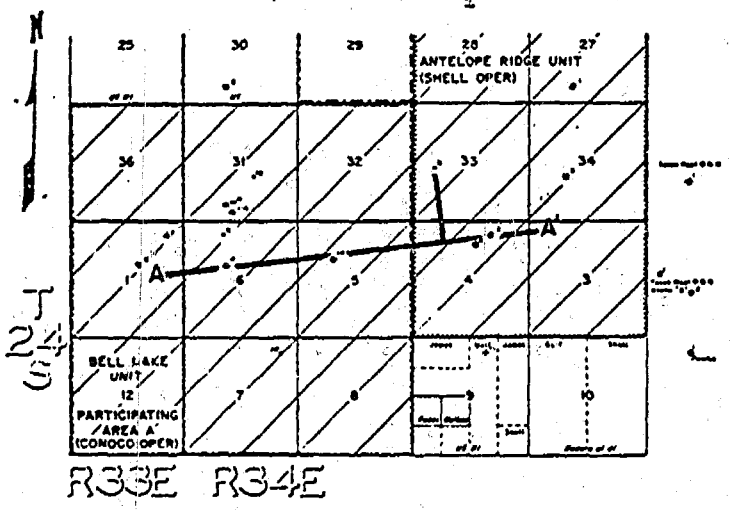
Shell Oil
Antelope Ridge Unit No. 5
L-33-23S-34E
DF 3541

Shell Oil
Antelope Ridge Unit No. 2
B-4-24-34
DF 3567



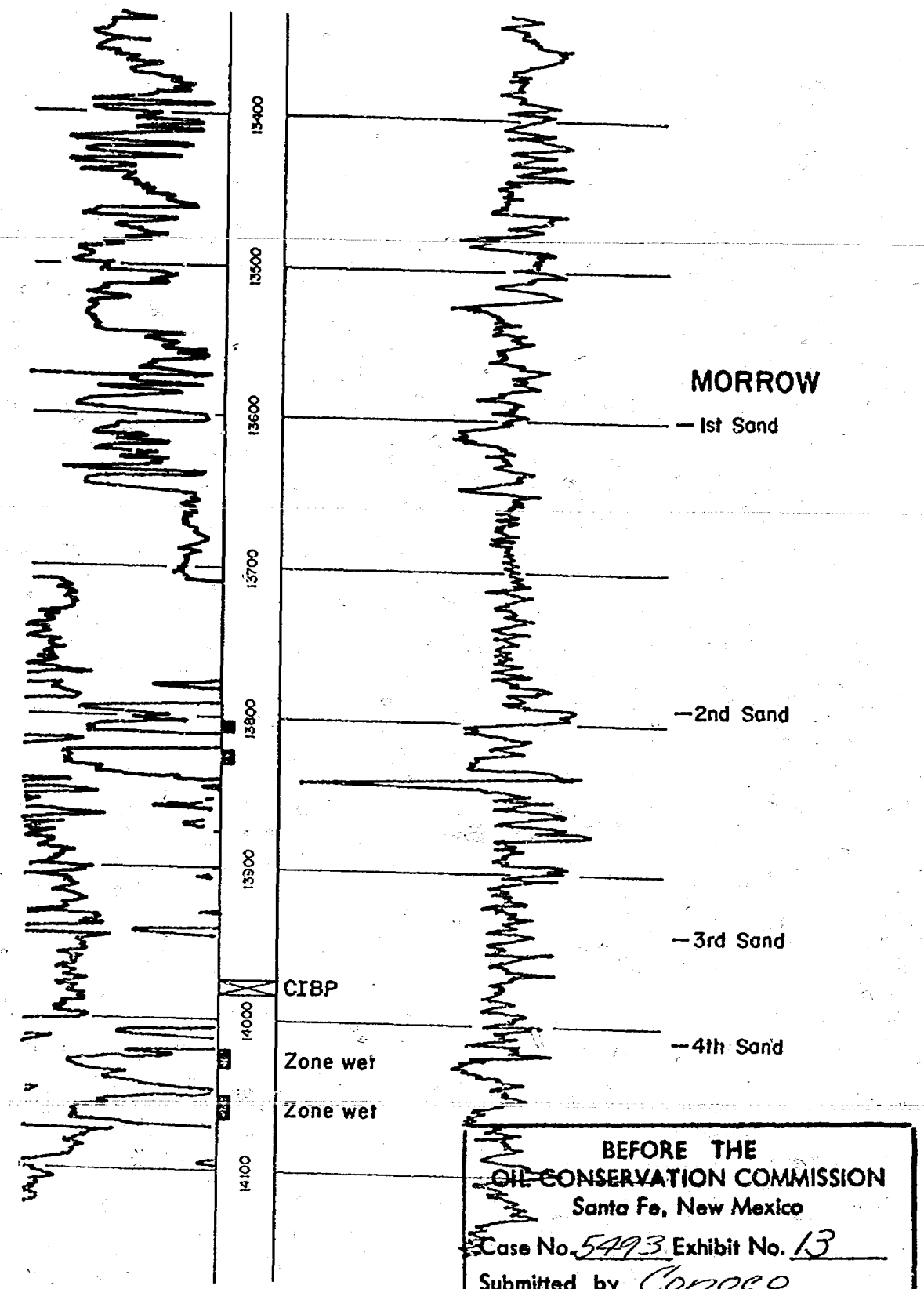
A-A'
WEST-EAST STRATIGRAPHIC SECTION
BELL LAKE-ANTELOPE RIDGE
MORROW 4th SAND

Oct. 1975 KLT



BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 12
Submitted by: Conoco
Hearing Date 10-23-75

Continental Oil
Bell Lake Unit No. 16
Unit A - Sec. 7 - 24S - 34E



BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 13
Submitted by Conoco
Hearing Date 10-23-75

Chapter 10

Effect of Reservoir Heterogeneities On Pressure Behavior

The pressure analysis methods which were presented in the preceding chapters are all based on the assumption of a homogeneous formation of uniform thickness. In addition, it was also assumed that the producing layer is horizontal and its porosity and permeability distributions are isotropic and constant. In spite of these seemingly over-simplifying restrictions, the various pressure analysis theories have proven generally to have fairly wide applicability. In this chapter we will examine reasons for this and will study cases where the simple theory does not apply.

The engineer who has inspected subsurface cores or surface outcrops of reservoir rocks does not have to be told of the inherent heterogeneous nature of reservoir rocks. Geologic processes themselves dictate that reservoir rocks be non-uniform. The processes of sedimentation, erosion, glaciation, etc., all act to produce reservoir rocks that are non-uniform, although the non-uniformity is, to an extent, predictable. In order to properly qualify pressure analysis results obtained in the field, one must be familiar with the pressure behavior anomalies which are engendered by the commonly encountered reservoir heterogeneities.

The subject of pressure behavior in heterogeneous reservoirs has received considerable attention in the petroleum literature in recent years. With the advent of the digital computer many mathematical model studies have been made of pressure behavior in heterogeneous reservoirs. These studies have ranged from investigations of behavior of wells near faults to performance of wells in naturally fractured reservoirs. Generally, one would conclude that invaluable progress in understanding the effects of reservoir heterogeneities has been made. We must also acknowledge that studies of heterogeneous reservoirs are very much limited by our current inability to simulate them in a mathematically rigorous way. Hopefully, the detailed study of the distributions of pore space parameters together with the expected larger and faster computers will bring about additional progress in the investigation of heterogeneous reservoir behavior.

The presentation of the material on reservoir heterogeneities will consider, first, pressure behavior for heterogeneities which occur laterally away from the well. This includes faults and lateral changes in the hydraulic diffusivity such as occur at fluid contacts.

10.1 Pressure Behavior Near Faults or Other Impermeable Barriers

The pressure behavior of a well near a sealing linear fault or other flow barrier in an otherwise infinite reservoir was first presented by Horner.[1] The pressure behavior in this case is derived very conveniently by employing a technique called the "method of images". In this formulation the effect of a fault is simulated by assuming the presence of another identical well producing at a symmetrical position across the fault, and then removing the fault. The image well interacts with the actual well so that no flow occurs across the fault. The resulting pressure drop at the real well due to its own production and the "interference drop" from the image well add together to simulate correctly the pressure behavior of the real well as though it were in the proximity of the fault.

Mathematically, if the well is located a distance d from the fault, then its pressure behavior during flow at a constant rate is

$$p_{wf} = p_i + \frac{q\mu}{4\pi kh}\left[Ei\left(-\frac{\phi\mu c r_w^2}{4kt}\right) + Ei\left(-\frac{\phi\mu c d^2}{kt}\right) + 2s\right] \quad . \quad . \quad . \quad . \quad (10.1)$$

Note that the actual distance of the image well from the real well is $2d$.

The pressure buildup behavior in an ideal case can be obtained by employing, in the usual manner, the method of superposition and Eq. 10.1 to yield

$$p_{ws} = p_i + \frac{q\mu}{4\pi kh}\left[Ei\left(-\frac{\phi\mu c r_w^2}{4k\,(t+\Delta t)}\right) - Ei\left(-\frac{\phi\mu c r_w^2}{4k\Delta t}\right) + Ei\left(-\frac{\phi\mu c d^2}{k(t+\Delta t)}\right) - Ei\left(-\frac{\phi\mu c d^2}{k\Delta t}\right)\right] \quad . \quad . \quad . \quad . \quad . \quad (10.2)$$

For t sufficiently large and for all but very early shut-in times, Eq. 10.2 can be expressed as

$$p_{ws} = p_i - \frac{q\mu}{4\pi kh}\left[\ln\frac{t+\Delta t}{\Delta t} - Ei\left(-\frac{\phi\mu cd^2}{k(t+\Delta t)}\right) + Ei\left(-\frac{\phi\mu cd^2}{k\Delta t}\right)\right]. \quad (10.3)$$

For all but very small values of d, the last Ei-function in the above will be zero until Δt becomes large. Also, the other Ei-function will be essentially constant until Δt becomes large. Thus, early in the buildup,

$$p_{ws} = p_i - \frac{q\mu}{4\pi kh}\left[\ln\frac{t+\Delta t}{\Delta t} - Ei\left(-\frac{\phi\mu cd^2}{kt}\right)\right]. \quad (10.4)$$

This equation tells us that the slope of the normal pressure buildup plot will be unchanged for the early part of a pressure buildup.

As Δt becomes large, Eq. 10.3 becomes

$$p_{ws} = p_i - \frac{q\mu}{2\pi kh}\ln\frac{t+\Delta t}{\Delta t}. \quad (10.5)$$

From this equation we see that the slope of the second part (late time) of the buildup curve is exactly double that of the early part. Also, the late-time portion of the curve must be used to obtain the extrapolated pressure. The doubling of the slope is the distinguishing feature of the pressure behavior of a well near a fault.

A theoretical example of a pressure buildup in a well located near a fault is shown on Fig. 10.1. The characteristic change of slope is clearly evident.

Horner also presented a method for calculating the distance to a fault which is based on the shut-in time at which the extrapolated early- and late-time sections intersect on the basic buildup plot. If we equate the right-hand sides of Eqs. 10.4 and 10.5, we obtain the Horner equation for the fault distance:

$$-Ei\left(-\frac{\phi\mu cd^2}{0.000264\,kt}\right) = 2.303\log\frac{t+\Delta t_x}{\Delta t_x}. \quad (10.6)$$

With the usual Ei-function approximation, Eq. 10.6 can also be written as

$$\frac{0.000264\,kt}{\gamma\phi\mu cd^2} = \frac{t+\Delta t_x}{\Delta t_x}.$$

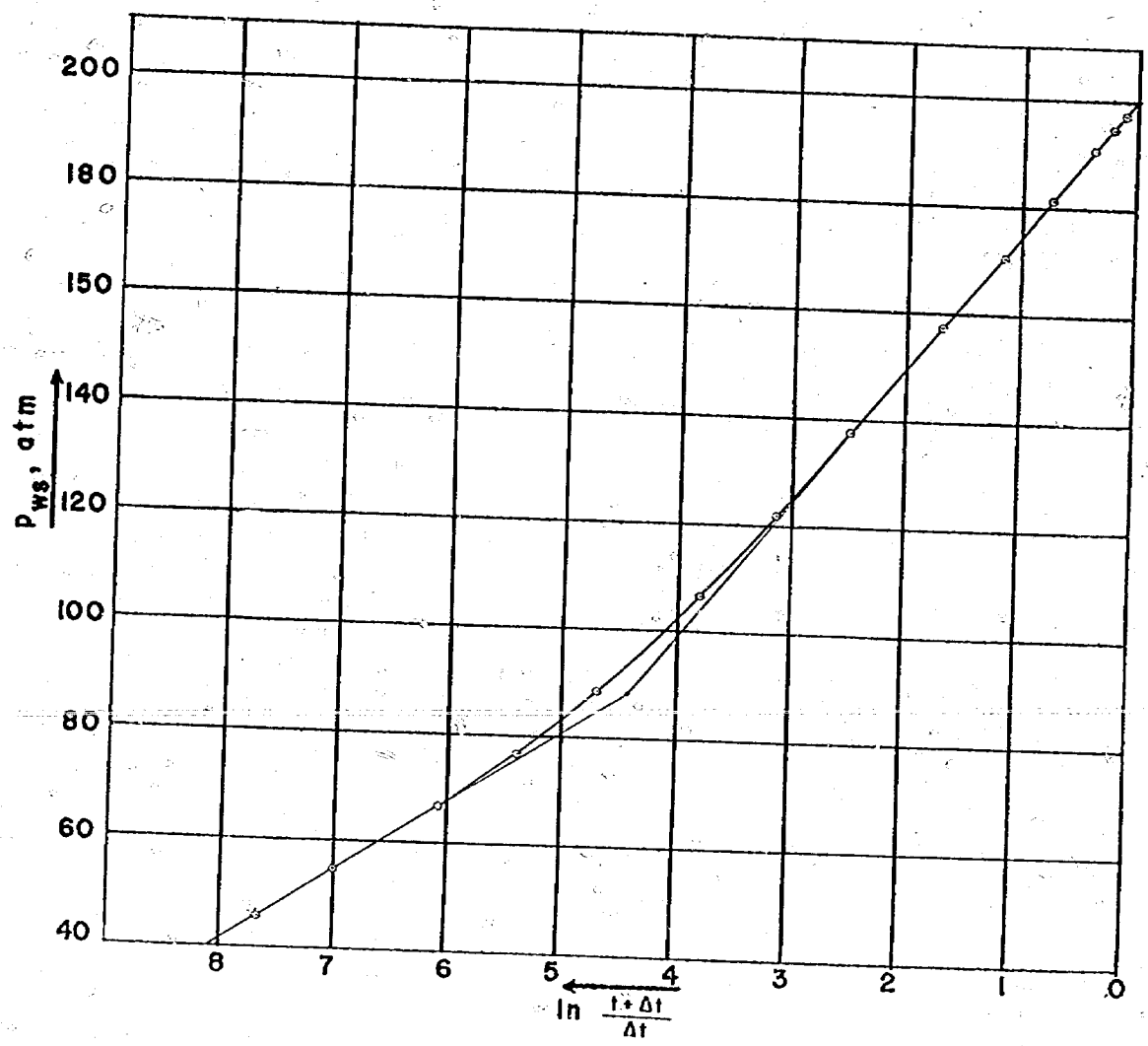


Fig. 10.1 Illustration of the theoretical case of a linear barrier fault. (After Horner.[1])

These equations (in practical units) are solved by trial and error for the distance d. The value Δt_x is the shut-in time value at which the straight-line sections intersect on the p_{ws} vs $\log[(t+\Delta t)/\Delta t]$ plot. The Horner method gives good results if the value of t is large. For small values of t, Gray[2] has shown that the Horner method (Eq. 10.6) is inaccurate.

Gray,[2] in an excellent review of methods for calculating the distance to a fault from buildup tests, has shown that the Davis and Hawkins[3] formula for distance to a fault seems to give consistently acceptable results [despite a restriction that it is strictly valid for pressure buildups for $[(t+\Delta t_x)/\Delta t_x] \geq 30$]. The formula is

$$d = \sqrt{1.48 \times 10^{-4}\left(\frac{k\Delta t_x}{\phi\mu c}\right)}. \quad . \quad . \quad . \quad (10.7)$$

This equation is also valid for pressure drawdown tests.

Another procedure for calculating fault distance was presented in the paper by Gray. This method involves graphically measuring the pressure difference between the first straight-line portion and the actual buildup curve during the transition part of the curve where the image well buildup becomes significant. Gray's equation for the pressure buildup or drawdown cases is

$$-\frac{70.6q\mu B}{kh}\left[-Ei\left(-\frac{\phi\mu cd^2}{0.000264\,k\Delta t}\right)\right] = \Delta p \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (10.8)$$

In this equation the Δp value is the difference between the first straight-line section and the actual buildup curve at shut-in time Δt. Again, the equation must be solved by trial and error for d, and is most accurate if t is large. This formula is predicated on the existence of a single fault.

The methods outlined above for calculating fault distance on a pressure buildup can be used for this purpose on other types of transient pressure tests. For example, Russell[4] has illustrated the application of the Horner technique in calculating fault distance from two-rate flow tests.

If the intersection method is used for finding the distance to a fault, the Davis and Hawkins formula, Eq. 10.7, is preferable because of its accuracy and ease of application. It can be applied to all types of transient tests. The principal objection to the intersection method of finding fault distance is the large amount of test time usually needed to infer the two straight lines correctly. Because of the time involved, it is usually best to run a pressure drawdown test instead of a pressure buildup. The "Δp method" suggested by Gray is a much faster method in terms of test time; however, to use it one must be sure that the deviation from the early straight line is a result of the presence of a single fault.

In the case of a well located near intersecting faults or other multiple reservoir boundaries, the pressure behavior of the well will be composed of a multiple set of transients. After the early straight-line section on a transient pressure analysis plot, a second straight-line section of slope greater than two times the early slope will usually result. Such a case is indicated schematically on Fig. 10.2. Here we show a well which is situated in proximity to three distinct sections of the reservoir boundary. A schematic pressure buildup curve for this well is also shown. Note that the second straight-line section has slope greater than twice the initial slope. The methods which we have outlined for fault distance calculation should not be applied if multiple boundaries are suspected. In such cases the transition period from the first to second linear segments may be of extended length because of successive arrivals of the reflections from the various boundaries. This means that the intersection point is very much a function of the distance to and the number of boundaries.

In the case of multiple boundaries near a well, about the best one can hope to do is obtain an estimate of the distance to the nearest boundary. If the flow or shut-in time at which the effect of the nearest boundary is felt can be estimated (this is done by finding the time Δt at which a pressure buildup plot becomes non-

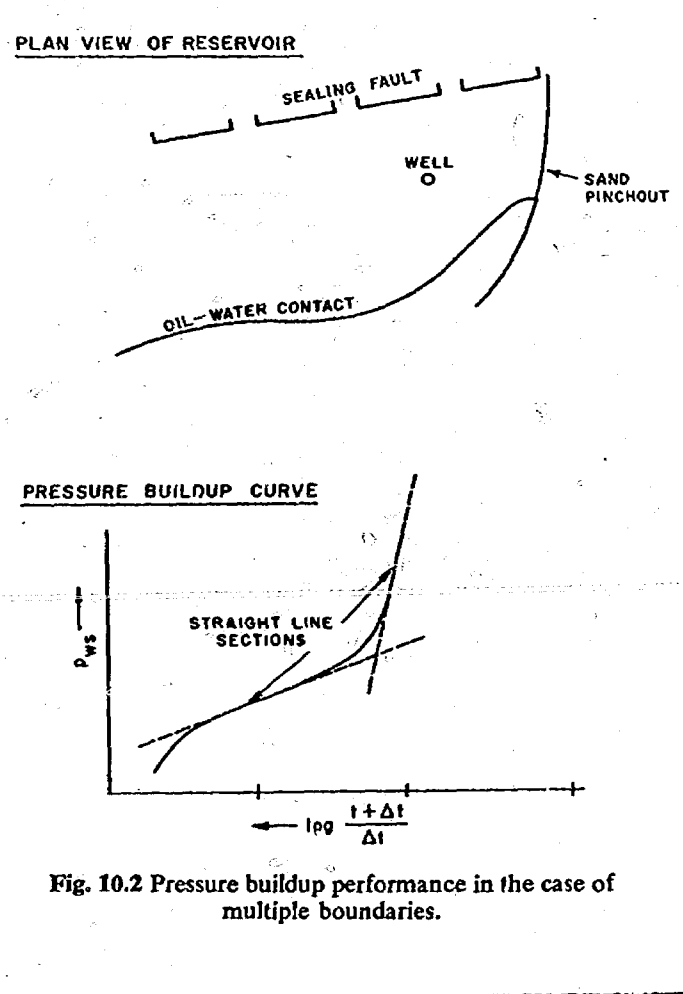


Fig. 10.2 Pressure buildup performance in the case of multiple boundaries.

linear, as in Gray's method for estimating fault distance[2]), then the distance to the nearest boundary can be estimated from

$$d \cong \sqrt{0.00105 \frac{k\Delta t}{\phi\mu c}} \quad . \quad . \quad . \quad . \quad . \quad . \quad (10.9)$$

This is an approximate formula which generally gives only order-of-magnitude results. The calculated distance value is quite dependent upon the time at which the buildup is judged to be nonlinear.

If a multiple-boundary situation is suspected and it is desired to find the distance to the nearest boundary, the constant-rate pressure drawdown test is probably the best test to run. The reason for this is that a minimum of additional transients from the testing method is introduced. Generally speaking, it is difficult to infer boundary or fault presence uniquely by a transient pressure test because other factors may cause similar effects. Some of these will be discussed in the next section.

10.2 Effect of Lateral Changes in Hydraulic Diffusivity on Pressure Behavior

Discontinuities in porosity and permeability and in fluid distribution frequently occur within reservoirs. Such discontinuities, although not complete barriers to flow (as are sealing faults), cause discontinuous changes in the hydraulic diffusivity, $\eta = \frac{k}{\phi\mu c}$, and thereby have an effect on pressure behavior. Changes in the hydraulic diffusivity occur at the boundary between differing geological depositional units due to changes in porosity and permeability. Changes also occur at fluid contacts such as gas-oil or oil-water contacts because of changes in viscosity and compressibility.

Bixel, Larkin and van Poollen[5] have published a theoretical study of the effect of linear discontinuities in hydraulic diffusivity on pressure buildup and drawdown behavior. The idealized reservoir situation studied by these authors is shown on Fig. 10.3. They assumed that the fluids in the reservoir are slightly compressible and that the compressibilities and viscosities are constant. The formation permeability and porosity are independent of pressure and the formation is homogeneous, isotropic and of constant thickness. These parameters are assumed to be constant, yet they can differ on opposite sides of the discontinuity. Some schematic cross-sections of practical reservoir situations for which this study may be applicable are shown on Fig. 10.4.

The mathematical solution to this flow problem is presented, for the constant flow rate case, in the reference. The results from computer evaluation of the solution for the pressure behavior at the well are expressed in terms of the following parameters:

$$\eta_1 = \frac{k_1}{\phi_1\mu_1 c_1},$$

$$\eta_2 = \frac{k_2}{\phi_2\mu_2 c_2},$$

$$S_P = \frac{\phi_2 c_2}{\phi_1 c_1},$$

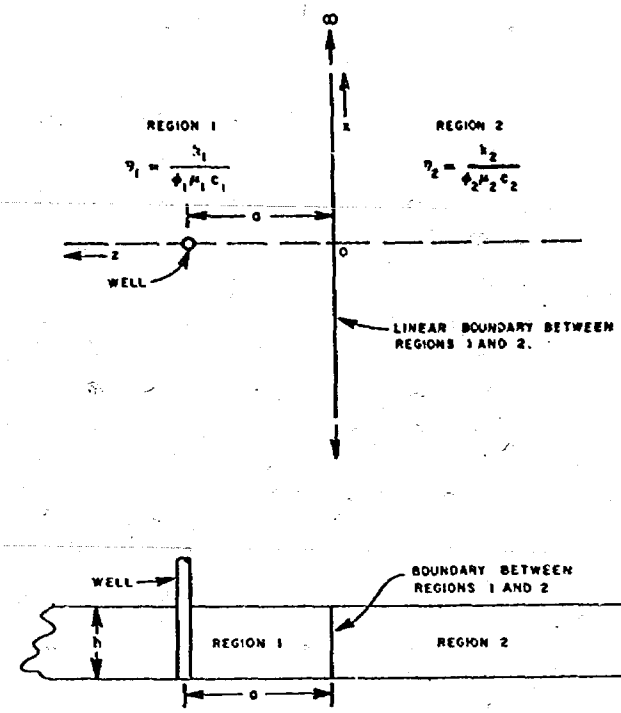


Fig. 10.3 Idealized reservoir studied by Bixel, Larkin and van Poollen.[5]

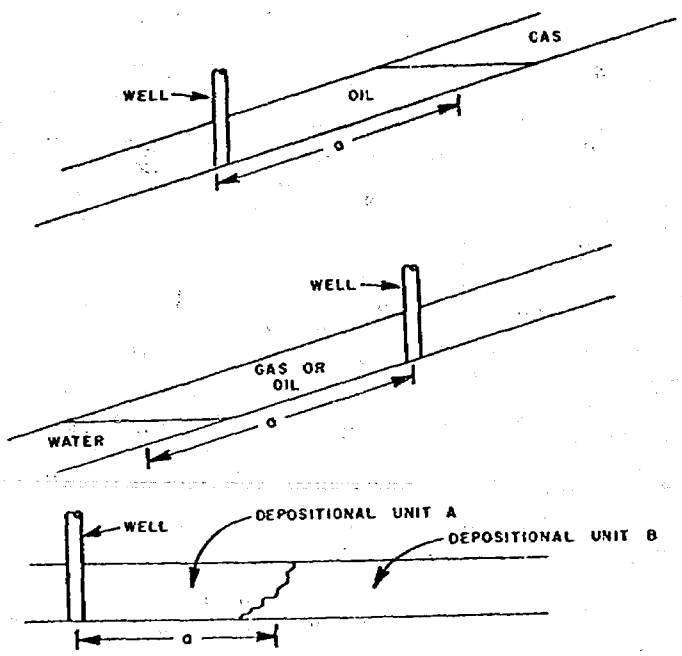


Fig. 10.4 Schematic cross-sections of some practical reservoir situations for which the theory of Bixel, Larkin and van Poollen[5] may be applicable.

completely penetrated by a well of radius r_{ic}. A single, horizontal symmetrical fracture of radius r_f and flow capacity $(kh)_f$ is located at the mid-point of the reservoir. They assume there is no flow across the drainage radius r_e and that beyond some critical radius r_c, flow is purely radial. A numerical solution of the flow equation for these conditions was carried out. From the numerical results, apparent skin factors were calculated for various combinations of parameters.

A set of numerical results for the case of $r_f/r_w = 200$ is shown on Fig. 10.28. As pointed out by Hartsock and Warren, these curves show that a poorly designed fracture treatment can yield an increase in apparent skin effect and a consequent reduction in productivity. From the results shown and others, the authors concluded that for a radius of drainage at least four times greater than the fracture radius, the skin factor is independent of drainage radius. They also concluded that the apparent skin factor curves can be used in fracture treatment design.

Further knowledge of the transient pressure behavior

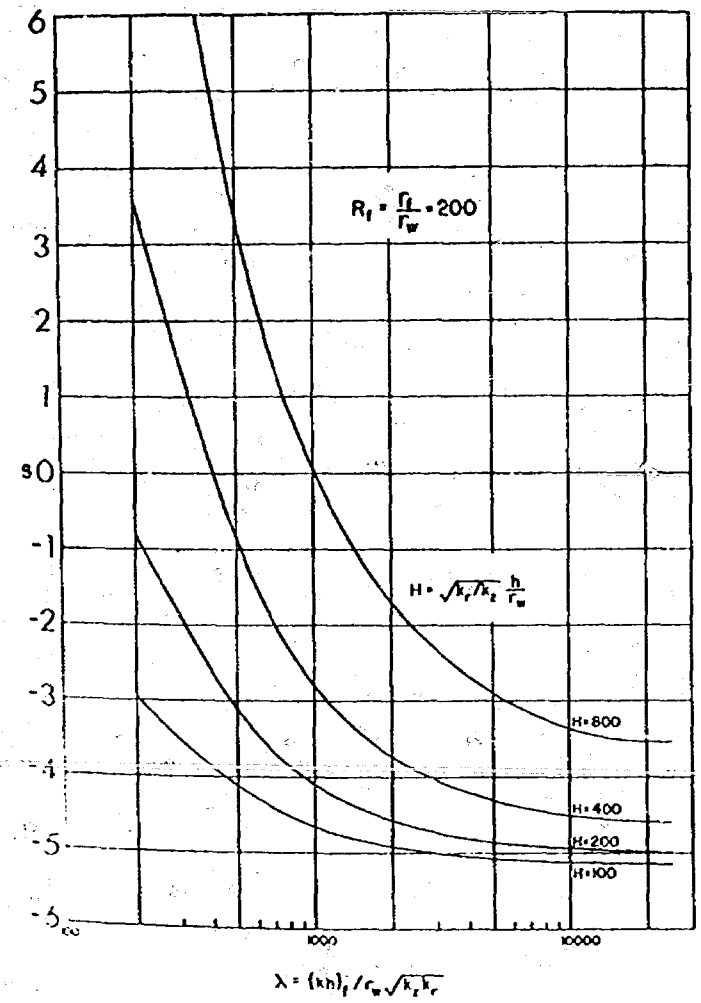


Fig. 10.28 Apparent skin factor as a function of dimensional fracture flow capacity. (After Hartsock and Warren.[7])

of horizontally fractured wells was extracted by Warren[26] in his discussion of Coats' mathematical model for water movement about bottom water-drive reservoirs.[27] Warren observed that a segment of Coats' results could be interpreted as being applicable to transient flow in a horizontally fractured situation similar to that considered by Hartsock and Warren and with infinite fracture conductivity. He showed that the ordinary transient radial flow expression with skin effect given by

$$s = \begin{cases} M \cdot A(M/2) - \ln \dfrac{r_f}{r_{ic}} - 0.4045, & \left[\begin{array}{c}\text{fracture in}\\ \text{center}\end{array}\right] \\ 2\,M \cdot A(M) - \ln \dfrac{r_f}{r_w} - 0.4045, & \left[\begin{array}{c}\text{fracture on}\\ \text{top}\\ \text{or bottom}\end{array}\right] \end{cases} \qquad (10.17)$$

can be used to calculate transient flow behavior. In these expressions, $M = h\sqrt{k_r/k_z}/r_f$, and $A(M)$ is a geometrical constant obtainable from Table 2 of Coats' paper.

The papers which have been noted represent the "state of the art" as far as transient pressure behavior in horizontally fractured wells is concerned. There have been additional steady-state model investigations for different fracture orientations, fracture shapes, etc. It is apparent that additional theoretical investigations of transient pressure behavior in realistic mathematical models could contribute significantly to the industry's knowledge.

10.6 Pressure Behavior in Non-Symmetrical Drainage Areas

This topic is perhaps incorrectly classified as a reservoir heterogeneity. However, since pressure behavior in non-symmetrical drainage areas departs from that for more ideal situations, non-symmetrical drainage areas can probably be thought of as being akin to more naturally caused reservoir heterogeneities.

Pressure behavior in non-symmetrical drainage areas was studied in detail by Matthews, Brons and Hazebroek.[28] By employing the method of images to calculate reservoir pressure behavior for a large number of different reservoir shapes, these authors established that the pressure drop for any reservoir shape, and all but very early times, is given by

$$p_i - p_{ic,f} = \frac{q\mu}{4\pi kh}\left[\ln\frac{kt}{\phi\mu cA} + 4\pi\frac{kt}{\phi\mu cA} - F\left(\frac{kt}{\phi\mu cA}\right) + \ln\frac{A}{r_{ic}^2} + 0.809 + 2s\right], \qquad (10.18)$$

where A is the area of drainage and $F\left(\dfrac{kt}{\phi\mu cA}\right)$ is a shape-dependent time function given by

$$F\left(\frac{kt}{\phi\mu cA}\right)=\frac{p^*-\bar{p}}{\frac{q\mu}{4\pi kh}},$$

which is the familiar pressure correction function of Matthews *et al.* presented in Figs. 4.3 through 4.9.

Brons and Miller [29] and also Dietz[30] have shown that for semi-steady state conditions

$$F\left(\frac{kt}{\phi\mu cA}\right)=\ln\frac{C_A kt}{\phi\mu cA} \quad . \quad . \quad . \quad (10.19)$$

where C_A is a shape-dependent constant whose value has been tabulated. On Fig. 10.29 is shown a tabulation of drainage area shapes and associated C_A values from Dietz' paper.

Combination of Eqs. 10.18 and 10.19 yields the following expression for the semi-steady state case.

$$p_i-p_{wf}=\frac{q\mu}{4\pi kh}\left[4\pi\frac{kt}{\phi\mu cA}-\ln C_A+\ln\frac{A}{r_w^2}+0.809+2s\right] \quad . \quad . \quad . \quad . \quad . \quad (10.20)$$

If we note that

$$p_i-\bar{p}=\frac{qt}{\phi chA},$$

then Eq. 10.20 becomes

$$\bar{p}-p_{wf}=\frac{q\mu}{4\pi kh}\left[\ln\frac{A}{C_A r_w^2}+0.809+2s\right] \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (10.21)$$

At semi-steady state, therefore, the difference between the average pressure $\bar{p}$ and the flowing pressure p_{wf} depends directly on the shape of the drainage boundary as evidenced by the shape factor C_A. These shape factors given in Fig. 10.29 may be used to calculate $\bar{p}$ from a buildup curve as shown by Dietz.

The implications of reservoir shape in pressure calculations were discussed in Chapter 4 and also in the references which have been cited. In addition, a comprehensive review of these considerations has been prepared by Ramey.[31]

10.7 Effect of Pressure-Dependent Rock Properties

All of the pressure analysis theories we have presented have been predicated on the assumption of pressure-independent porosity and permeability. For the most part this is not a greatly restrictive assumption. However, we do know from laboratory studies and from observed pressure behavior in some wells that both porosity and permeability decrease as reservoir pressure declines. For reservoir rocks which are "normally" compacted, these effects are usually less than for those which have unusually high pore pressure, i.e., geopressured reservoirs.

Van der Knapp[32] and others [34] have studied the effect of pressure on rock properties. The results of these investigations are usually portrayed in terms of rock properties as a function of effective stress on the rock. The effective stress is simply the difference between the confining or overburden pressure and the pressure within the pores of the rock. As reservoir pressure (pore pressure) declines, effective stress increases forcing skeletal changes in the rock and consequent reductions in permeability and porosity. If effective stress builds up to a high enough level, failure of the rock skeleton may occur and cause drastic reductions in porosity and permeability.

The effective stress which corresponds to the maximum depth of burial the rock has experienced in geologic time is quite important. If one can establish that a rock will not experience stresses during depletion any greater than those it has previously experienced, then it is unlikely that rock skeleton failure will be a problem. However, in sediments which today are at their maximum depth of burial, depletion of fluid from their pores will subject the rocks to progressively greater stresses than they have yet withstood. This may cause rock failure.

The variation of porosity and permeability with effective stress generally displays hysteresis effects. That is, restoration of pressure in a rock back to its original level generally will not bring permeability and porosity back to their original levels. Sandstones and other clastic rocks tend to be more elastic in their behavior than carbonate rocks. Limestones often are somewhat plastic in their behavior.

What does all this have to do with pressure analysis techniques? In general we should expect to observe a decline in calculated permeability from successive transient pressure tests run throughout the life of a well in depletion reservoirs. In many cases we do. It is not unusual in low-permeability, geopressured reservoirs to observe declines in kh values from transient tests of the order of 30 to 50 percent over the first 2,000 psi of pressure drop. In normally pressured reservoirs, however, nothing this dramatic is observed. In fact, declines of 10 percent or so may be observed, but because of variations of other kinds (two-phase flow effects, etc.) quantitative evaluation becomes difficult.

The differential equation for flow of a single, slightly compressible fluid with pressure-dependent rock properties is identical in mathematical form with that for flow of a non-ideal gas with constant rock properties. Predictions of pressure behavior incorporating laboratory determined curves of porosity and permeability vs pressure can be carried out in a manner analogous to the non-ideal gas studies of Russell *et al.*[33]

10.8 Concluding Comments

The intent of this chapter on reservoir heterogeneity has been to display to the reader the "state of the art" as far as understanding and predicting pressure behavior is concerned. We believe it is essential for en-

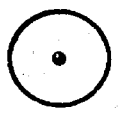
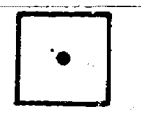
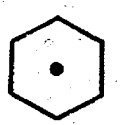
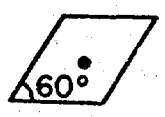
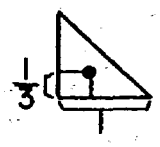
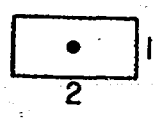
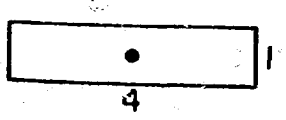
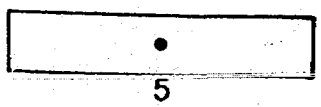
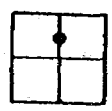
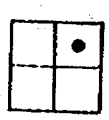
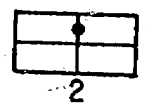
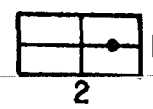
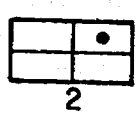
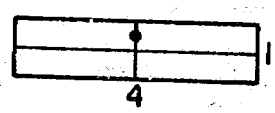
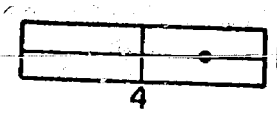
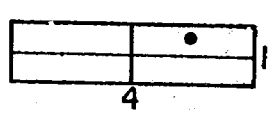
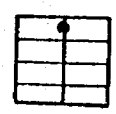
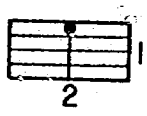
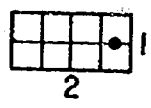
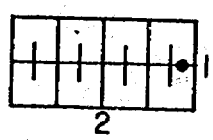
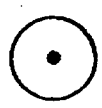
	$\ln C_A$	C_A	Stabilized conditions for $\frac{kt}{\phi\mu c A} >$
In bounded reservoirs			
	3.45	31.6	0.1
	3.43	30.9	0.1
	3.45	31.6	0.1
	3.32	27.6	0.2
	3.30	27.1	0.2
	3.09	21.9	0.4
	3.12	22.6	0.2
	1.68	5.38	0.7
	0.86	2.36	0.7
	2.56	12.9	0.6
	1.52	4.57	0.5
	2.38	10.8	0.3
	1.58	4.86	1.0
	0.73	2.07	0.8
	1.00	2.72	0.8
	−1.46	0.232	2.5
	−2.16	0.115	3.0
	1.22	3.39	0.6
	1.14	3.13	0.3
	−0.50	0.607	1.0
	−2.20	0.111	1.2
	−2.32	0.098	0.9
In water-drive reservoirs			
	2.95	19.1	0.1
In reservoirs of unknown production character			
	3.22	25	0.1

Fig. 10.29 Table of drainage area shapes. (After Dietz.[30])

Nomenclature

Only practical oilfield units are given after symbols; for Darcy units, see Section 2.10.

a_1 = distance between observation well and production well 1, ft; similarly for a_2, a_3, etc.

A = drainage area of well, sq ft

b = intercept at $\Delta t = 0$ of plot of log Δp vs Δt, psi

b_1 = intercept at $\Delta t = 0$ of plot of $\log(p_{ws} - p_e)$ vs Δt for injection wells, psi

B = formation volume factor

c = compressibility, psi^{-1}

c_f = effective formation (rock) compressibility, psi^{-1}

c_t = total compressibility, psi^{-1}

d_t = diameter of tubing, in.

D = non-Darcy flow constant, $(B/D)^{-1}$

F = the function plotted in Figs. 8.9, 8.10 and 8.11

g = acceleration due to gravity

h = formation thickness, ft

i = injection rate, B/D at surface conditions

I = injectivity index, B/D-psi

J = productivity index, B/D-psi

k = formation permeability, md

m = absolute value of slope of linear portion of pressure buildup or flow test curve, psi/$\log_{10}$ cycle

M = mobility ratio, $(k/\mu)_1/(k/\mu)_2$

M = molecular weight of a gas

p_e = external boundary pressure at radius r_e, psi

p_i = initial reservoir pressure, psi

p_{sc} = pressure at standard conditions, psi

p_t = tubing-head injection pressure at time of closing in, psi

p_{to} = bottom-hole pressure, psi; in two-rate flow tests and in all injection tests, p_{to} is the pressure at time of change in rate

p_{two} = bottom-hole injection well pressure, psi

p_{wof} = bottom-hole flowing (or pumping) pressure, psi

$p_{1\,hr}$ = pressure read from linear portion of pressure buildup curve at 1-hour closed-in time, psi; also refers to pressure read from linear portion of drawdown test curve, two-rate flow test curve, or pressure falloff curve, at 1-hour test time

p^* = pressure obtained when linear portion of pressure buildup curve, p_{ws} vs $\log[(\Delta t + \Delta t)/\Delta t]$, is extrapolated to $(t + \Delta t)/\Delta t = 1$; corresponds to pressure obtained after infinite closed-in time in an infinite reservoir, psi; see Section 3.3 for a discussion on p^*

$\bar{p}$ = average pressure, psi

$\hat{p}$ = p_{to} at semi-steady state (Eq. 5.5), psi

$\bar{P}$ = Laplace transform of Δp_D (see Appendix A)

Δp_D = pressure drop, dimensionless, $(p_i - p_{wo})/(q\mu/2\pi kh)$; since Miller-Dyes-Hutchinson define Δp_D as $(\bar{p} - p_{ws})/(q\mu/2\pi kh)$, we have used this definition in presenting their method in Section 3.9 and Figs. 3.13 and 3.14; see also Section 10.5 for the definition of Δp_D for hydraulically fractured wells

Δp_{skin} = pressure drop in "skin" region next to wellbore, psi

q = production rate of well, B/D at surface conditions

r_D = dimensionless radius, r/r_{ic}

r_{oD} = dimensionless ratio of inner radius of oil bank to outer radius (see Fig. 8.4)

r_e = external boundary radius, ft

$r_{eD} = r_e/r_{ic}$, dimensionless

r_w = wellbore radius, ft

R = universal gas constant

R_s = gas solubility in oil, bbl/bbl

R_{sw} = gas solubility in water, bbl/bbl

s = skin factor, dimensionless

s' = apparent skin factor, dimensionless ($s' = s + Dq$)

S = saturation, fraction of pore space

t = time of flowing, hours

t_{De} = dimensionless time of flowing based on r_e, $kt/\phi\mu cr_e^2$; see note at end of Nomenclature

t_{Dw} = dimensionless time of flowing based on r_{ic}, $kt/\phi\mu cr_{ic}^2$; see note at end of Nomenclature

Δt = closed-in time, hours

$\Delta t'$ = flowing (or injection) time after change in rate, hours

Δt_{De} = dimensionless closed-in time based on r_e; $k\Delta t/\phi\mu cr_e^2$; see note at end of Nomenclature

T = absolute temperature, °R

T_{sc} = absolute temperature at standard conditions, °R

u = volumetric rate of flow per unit cross-sectional area

V_o = oil volume, bbl

V_p = pore volume, bbl

V_o/V_w = ratio of volume of oil bank to volume of water bank (see Fig. 8.4)

W_i = cumulative water injection, bbl

$Y(t)$ = function giving effect on well pressure of reservoir boundary

z = gas deviation factor (compressibility factor, $z = pV/nRT$)

β = absolute value of slope of log Δp vs Δt curve, hours^{-1}

β_L = absolute value of slope of linear plot of well pressure vs time, hours^{-1}

β_1 = [absolute value of slope of log $(p_{ws} - p_e)$ vs Δt curve for injection wells] · 2.303, hours^{-1}

γ = ratio of total compressibility in oil bank to total compressibility in water bank

γ = Eulers constant, $\gamma = 1.78$; $\ln\gamma = 0.5772$

μ = viscosity, cp

ρ = density, gm/cc (in injection well analysis)

ϕ = porosity, fraction

$$-Ei(-x) = \int_x^\infty \frac{e^{-s}}{s}\,ds$$

Subscripts

i = initial

o,w,g = oil, water, gas; w also refers to well when used with p and r

os, ws, gs = oil, water, gas at standard conditions

$or, gr,$ = oil and gas at residual conditions

sc = standard conditions

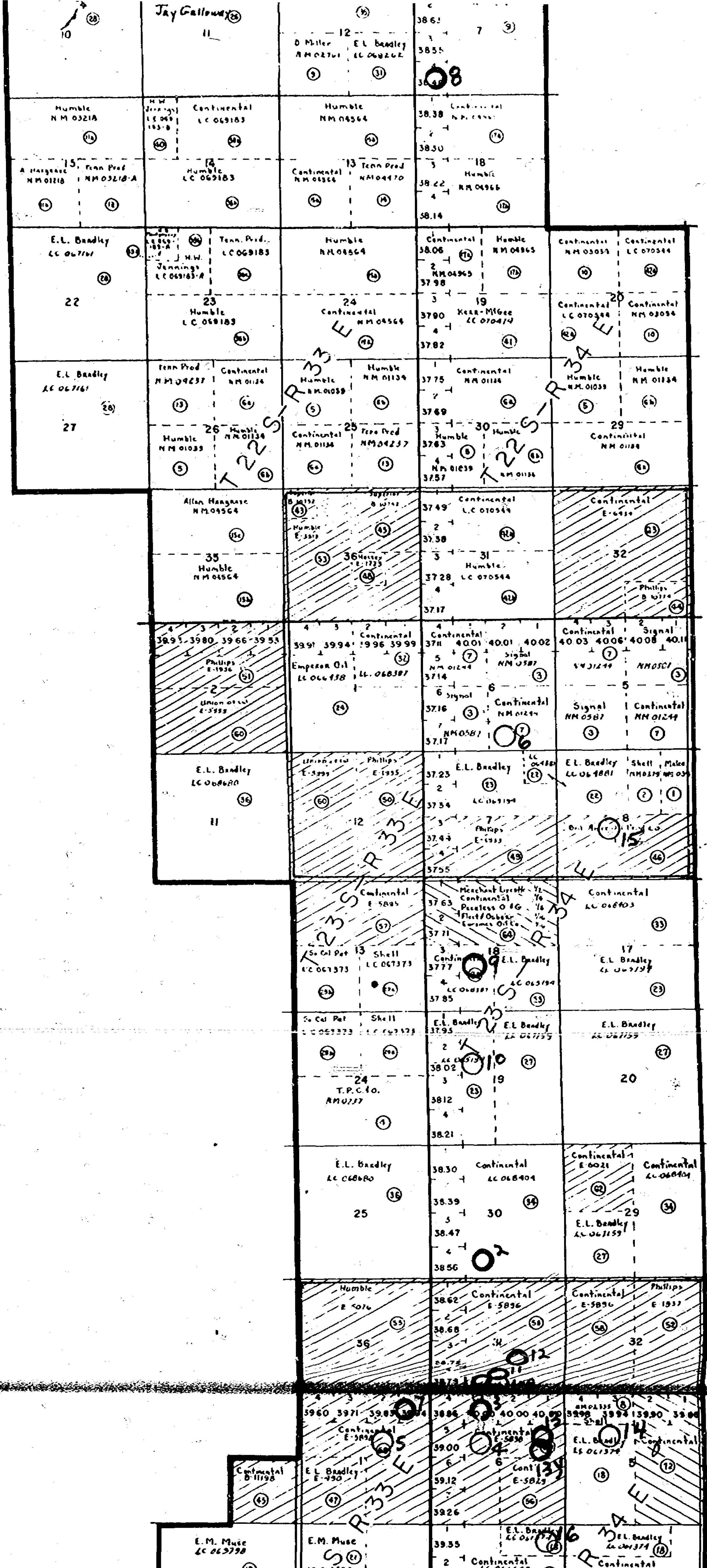
t = total; refers to tubing when used with d or p

Note: Dimensionless Quantities

Dimensionless time in the Darcy system of units (darcy, sec, cp, cm, atm) is $t_D = kt/\phi\mu cr^2$. The quantity r may be chosen either at r_e or r_{ic}. In one case we obtain t_{De} and in the other t_{Dic}. For the practical oilfield units used in this Monograph (md, hr, cp, ft, psi), t_{De} becomes $0.000264\,kt/\phi\mu cr_e^2$. The constant 0.00105 in Eq. 7.1 is $4(0.000264)$.

In the Darcy system of units the flow rate is usually written as $q\mu/4\pi kh$, which has the units of atmospheres. In practical oilfield units in this report, this quantity is $70.6q\mu B/kh$, which has units of psi. Also,

$$\frac{70.6q\mu B}{kh}\ln t = \frac{162.6q\mu B}{kh}\log_{10} t\,.$$



Jay Galloway
D Miller
E.L. Bradley
Humble
NM 0321A
Continental
LC 069183
NM 04564
Tenn Prod
NM 04470
Kerr-McGee
22
23
24
19
20
27
26
25
30
29
T22S-R33E
T22S-R34E
Allan Hangrave
35
36
31
32
Phillips
Union Oil
Emperor Oil
Signal
Shell
11
12
7
8
T23S-R33E
T23S-R34E
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T.P.C.Co.
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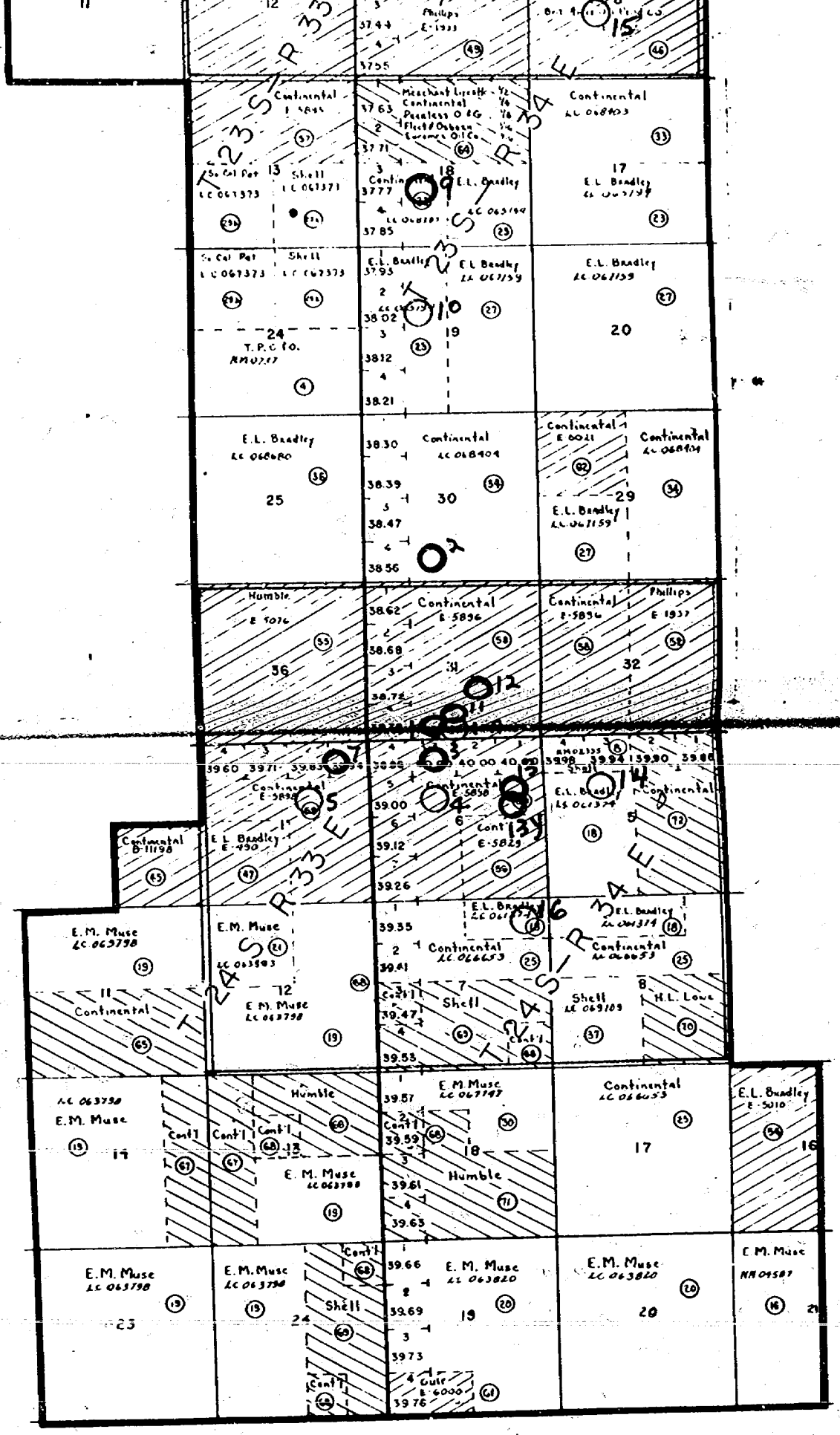
E.M. Muse



OWNERSHIP PLAT

BELL LAKE UNIT AREA

LEA COUNTY, NEW MEXICO

FEDERAL LANDS- 27,041.34 ACRES

STATE LANDS- 7,423.59 ACRES

FEE LANDS- 2,712.93 ACRES

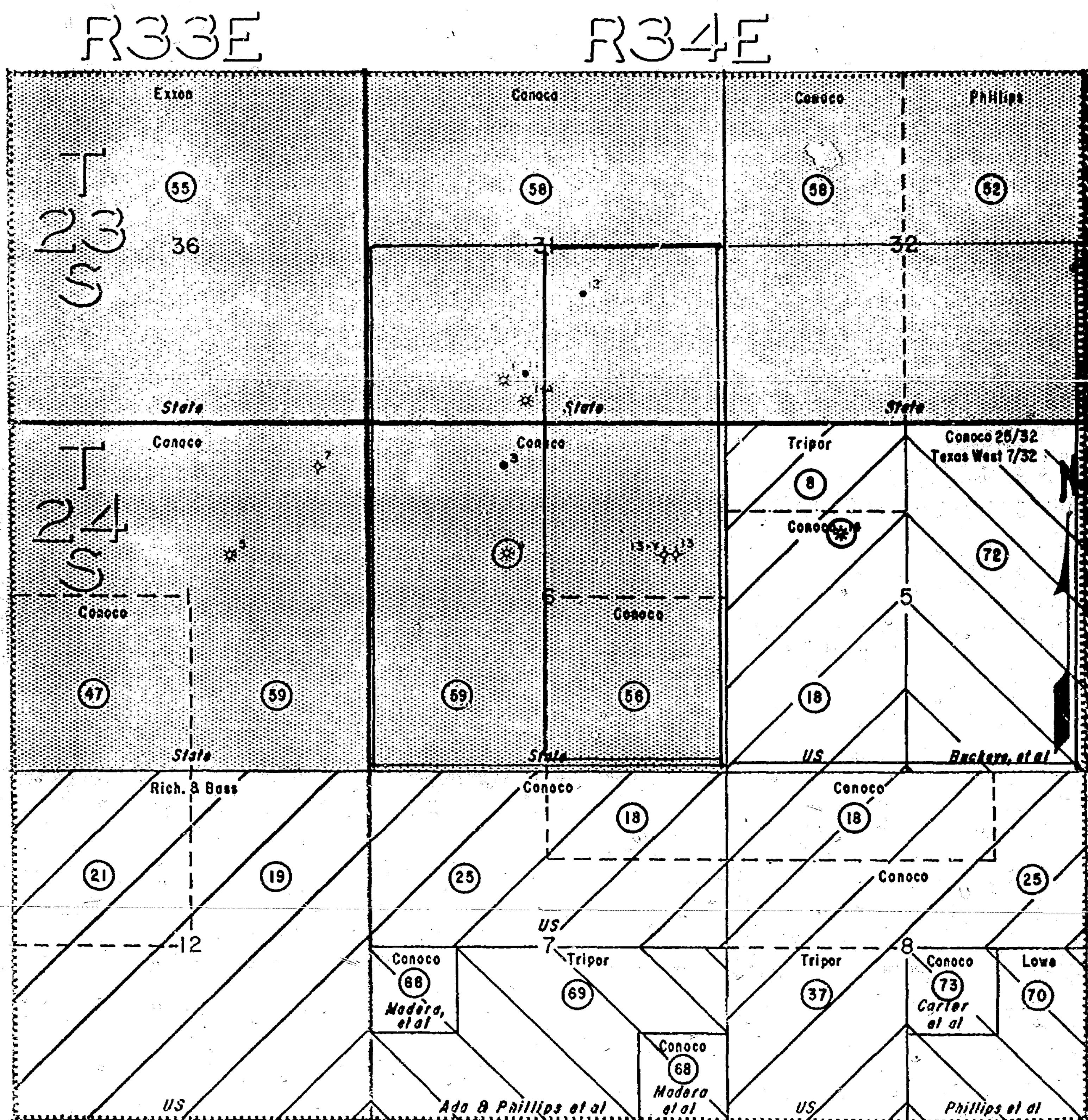
TOTAL NO. OF ACRES 37,177.86

UNIT OUTLINE

TRACT NUMBERS

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 18
Submitted by CONOCO
Hearing Date Oct. 23, 1975

EXHIBIT "A"


R33E
R34E
T 23 S
T 24 S
Exxon
Conoco
Conoco
Phillips
55
58
58
52
36
31
32
State
State
State
Conoco
Conoco
Tripor
Conoco 25/32
Texas West 7/32
8
72
5
6
Conoco
Conoco
47
59
59
56
18
State
State
US
Backers, et al
Rich. & Bass
Conoco
Conoco
18
18
21
19
25
Conoco
25
US
12
7
8
Conoco
66
Madera, et al
Tripor
69
Tripor
37
Conoco
73
Carter et al
Lowe
70
Conoco
68
Madera et al
US
Ada & Phillips et al
US
Phillips et al

LEGEND

- FEDERAL ACREAGE
- STATE ACREAGE
- FEE ACREAGE
- (7) TRACT NUMBERS

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 19
Submitted by Conoco
Hearing Date Oct. 23, 1975

CONOCO

PRODUCTION DEPARTMENT HOBBS DIVISION

BELL LAKE UNIT
LEA COUNTY, NEW MEXICO
SOUTH AREA
PARTICIPATING AREA A

SCALE
0 1000' 2000'

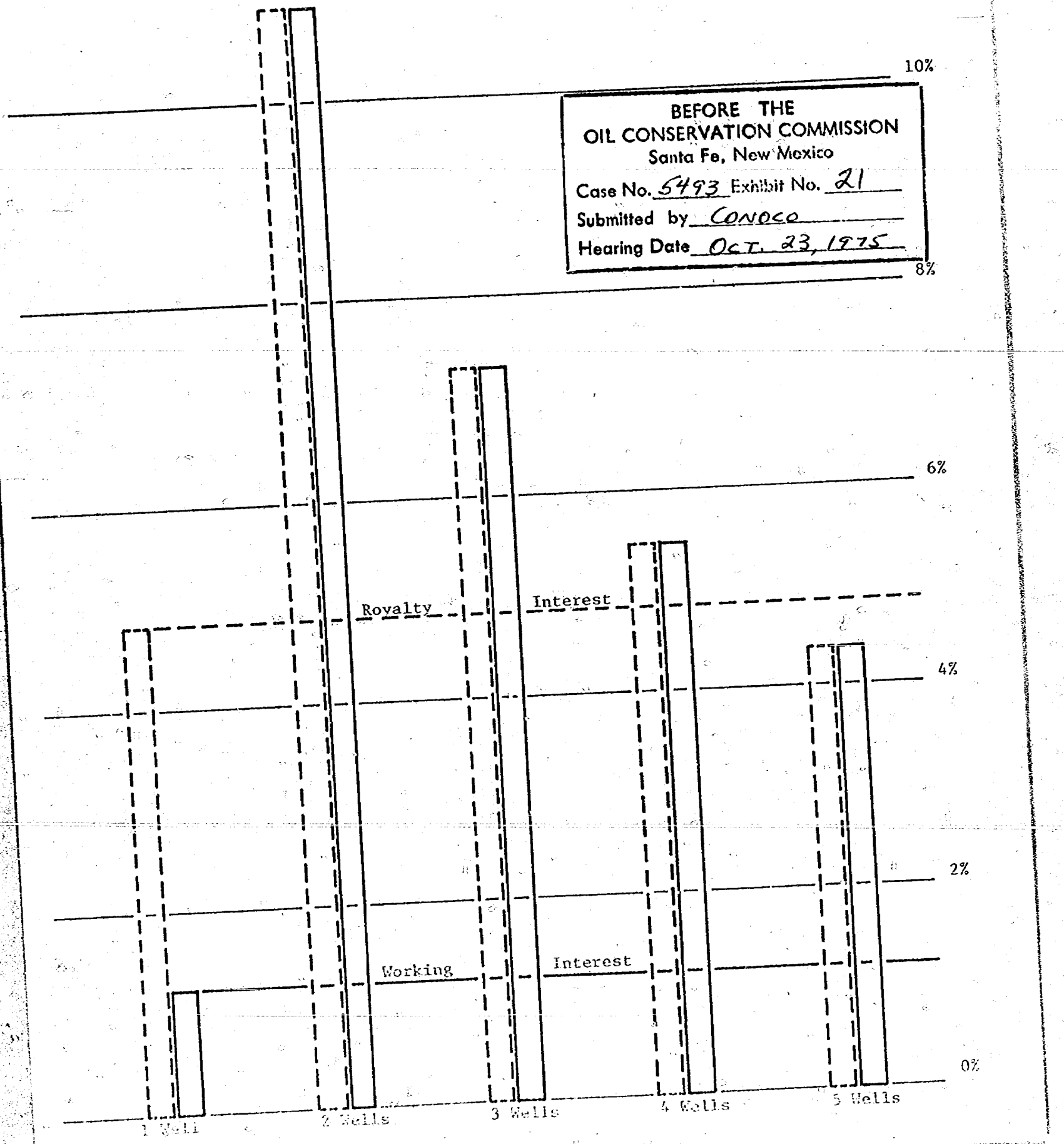
VTL 7-75 ERW

PAYOUT STATUS
BELL LAKE UNIT - SOUTH AREA
AS OF JUNE 30, 1975

Conoco 100%	Well No. 1-A .6184005	Well No. 4 .6184005	Well No. 5 .6184005	Well No. 14 .7719611	Well No. 16 .7719611	South Area	Texas West Share
Revenue	83,932	3,199,899	239,241	1,035,493	-	4,558,555	
Expense Intan.	7	1,166,715	468,705	528,414	566,097	2,729,938	
Deprec. Addns.	58,142	189,847	155,823	159,415	267,379	830,606	
Retirements	(12)	239,730	1,554,666	-		1,794,384	
Operating Exp.	14,614	419,176	52,580	89,212		575,582	
Bonus Cost	-	(3,454)	10,688	-		7,234	
Payout	11,181	1,187,875	(2,000,221)	258,452	(833,476)	(1,376,189)	
W. I. Owners							
Revenue	135,724	5,174,460	386,785	1,341,380	-	7,038,349	85,806
Exp. Intan.	11	1,886,666	756,966	684,509	733,323	4,061,475	49,514
Depr. Addns.	94,020	306,997	251,974	206,506	346,363	1,205,860	14,701
Operating Exp.	23,632	677,839	83,832	115,565	-	900,868	10,983
Payout	18,061	2,302,958	(705,987)	334,800	(1,079,686)	870,146	10,608
Non-consent penalty	58,832	1,435,751	546,386	503,290	539,843	3,084,102	37,599
Payout status of non-consenting WIO	(40,771)	867,207	(1,252,373)	(168,490)	(1,619,529)	(2,213,956)	(26,991)
Estimated Net Income						910,000	11,094
3rd Quarter 1975	10,000	300,000	0	600,000	200,000	1,110,000	13,532
4th Quarter 1975	10,000	300,000	0	600,000			

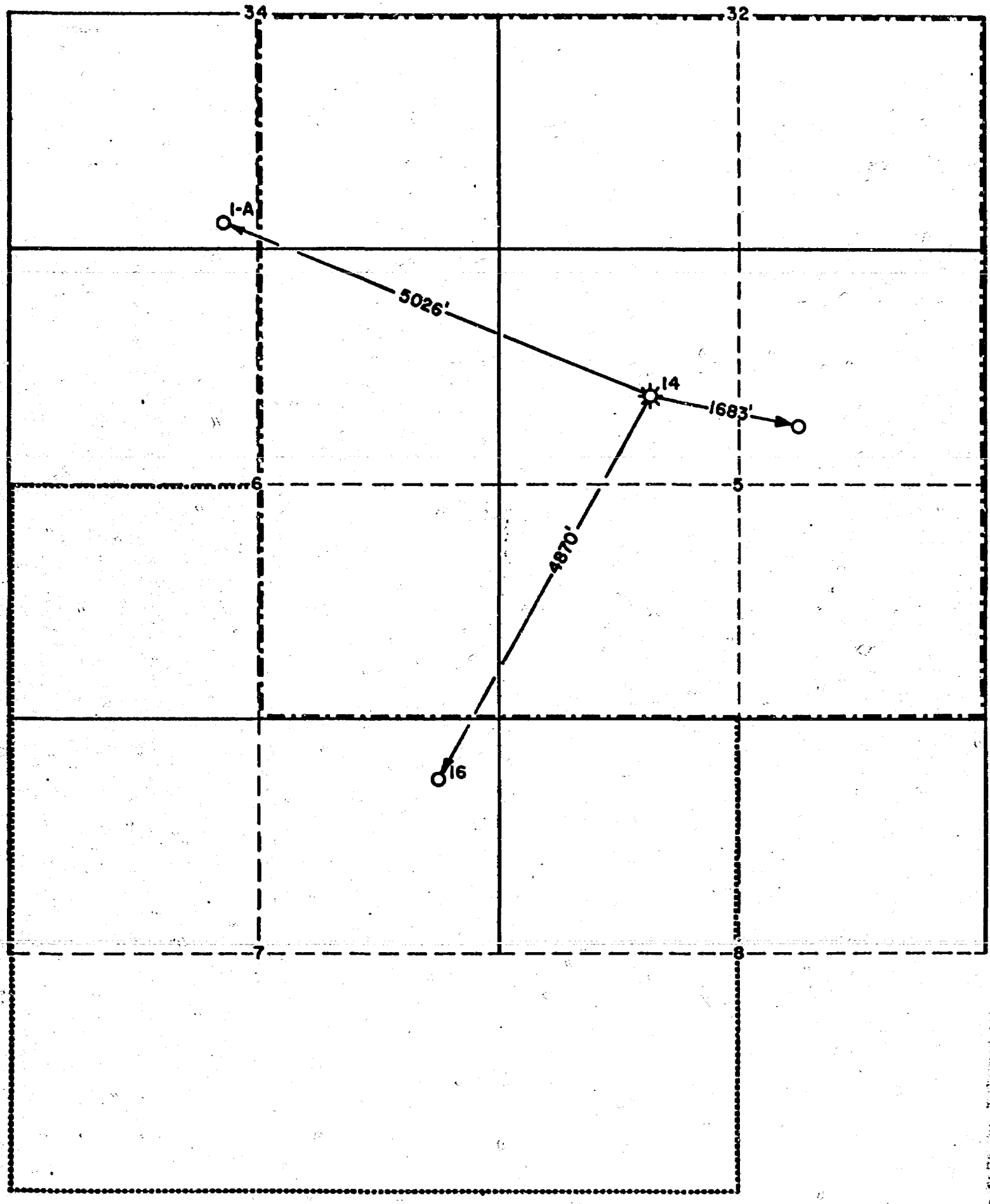
BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 20
Submitted by Conoco
Hearing Date Oct. 23, 1975

% of Reservoir Production Allocated to Uncommitted
Interests in E/2 Sec 5 Under Forced Pooling - 1440 Acre Case



BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 21
Submitted by CONOCO
Hearing Date OCT. 23, 1975

BELL LAKE UNIT MORROW PARTICIPATING AREA

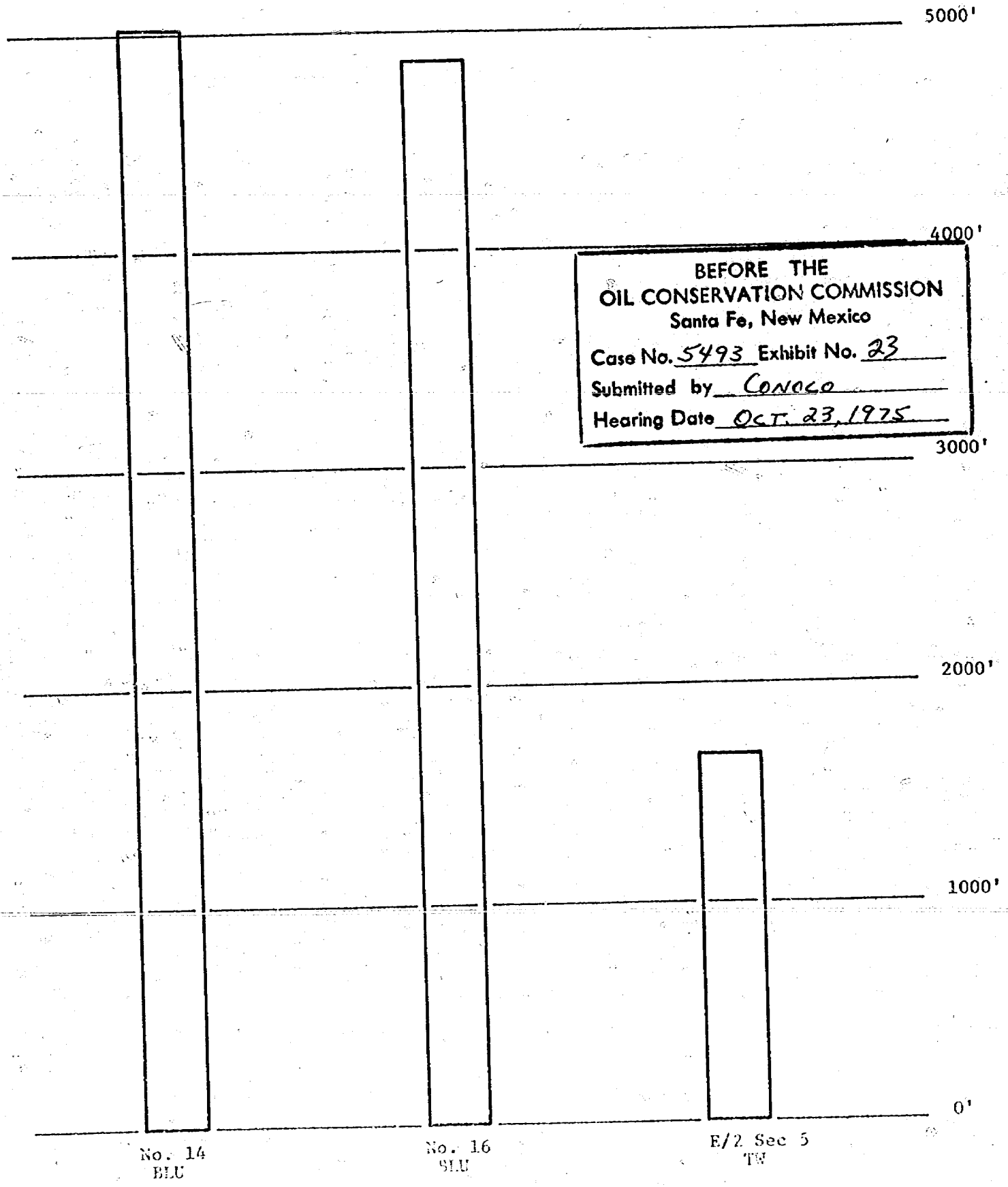


PRESENT PARTICIPATING AREA

PROBABLE EXPANSION OF P.A.

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 22
Submitted by CONOCO
Hearing Date OCT. 23, 1975

Comparison of Risk
Distance From Nearest Well



BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 23
Submitted by Conoco
Hearing Date Oct. 23, 1975

EVALUATION OF ECONOMIC IMPACT OF ORDER R-5039-A

Recoverable gas in reservoir	36,000,000 MCF
Recoverable gas per acre-foot	1,000 MCF
Estimated cost of well	$1,250,000
Estimated price of gas	$0.728/MCF
Estimated producing rate	10 MMCF/day
Estimated royalty rate	14.5%
Estimated direct op. cost	7.5%
Estimated drilling supervision	$6400 (4 months)
Estimated producing supervision	$250/month
Estimated monthly revenue-net	$172,623 ($5678/day)
Well cost	$1,250,000
Drilling supervision	6,400
Producing supervision to payout	2,000
	$1,258,400
Days to payout	222
Gas produced to payout	2,220,000 MCF
Estimated penalty cost	$1,875,000
Estimated producing supervision	2,750
	$1,877,750
Days to payout penalty	331
Gas produced to payout penalty	3,310,000 MCF
Gas produced from total payout until reservoir depletion 8,450,000 x .21875 =	1,848,000 MCF
Total estimated production to TW	7,378,000 MCF
Average sand thickness	25 feet
Reservoir area acres	1440
MCF per acre	25,000
TW lease acres	69.95
Percent of reservoir	4.85
Acres drained at payout of well	88.8
Percent of reservoir	6.24
Acres drained at total payout	221.2
Percent of reservoir	15.5
Acres drained at depletion	295.12
Percent of reservoir	20.73

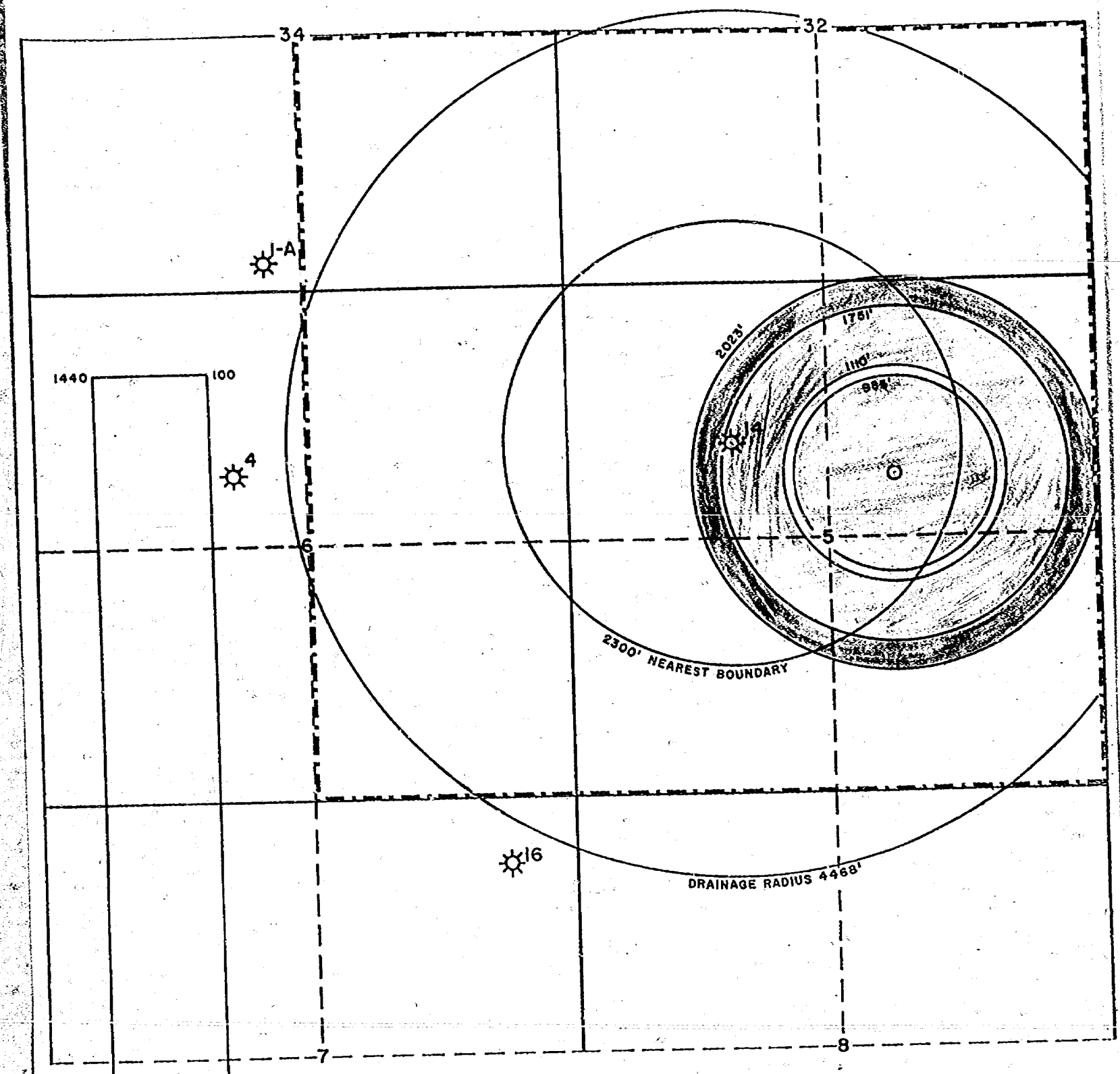
BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 24
Submitted by Conoco
Hearing Date Oct. 23, 1975

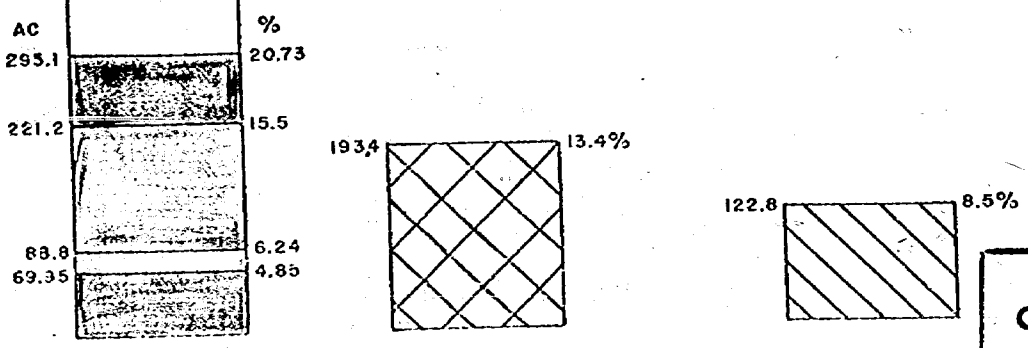
EVALUATION OF ECONOMIC IMPACT OF ORDER R-5039-A

Recoverable gas in reservoir	36,000,000 MCF
Recoverable gas per acre-foot	1,000 MCF
Estimated cost of well	$1,250,000
Estimated price of gas	$0.597/MCF
Estimated producing rate	10 MMCF/day
Estimated royalty rate	14.5%
Estimated direct op. cost	7.5%
Estimated drilling supervision	$6400 (4 months)
Estimated producing supervision	$250/month
Estimated monthly revenue-net	($4657/day)
Well cost	$1,250,000
Drilling supervision	6,400
Producing supervision to payout	2,250
	$1,258,650
Days to payout	270
Gas produced to payout	2,700,000
Estimated penalty cost	1,464,844
Estimated producing supervision	2,750
	1,467,594
Days to payout penalty	315
Gas produced to payout penalty	3,150,000 MCF
Gas produced from total payout until reservoir depletion 8,450,000 x .21875 =	1,822,000 MCF
Total estimated production to TW	7,672,000 MCF
Average sand thickness	25 feet
Reservoir area acres	1440
MCF per acre	25,000
TW lease acres	69.95
Percent of reservoir	4.85
Acres drained at payout of well	107.20
Percent of reservoir	7.44
Acres drained at total payout	233.20
Percent of reservoir	16.19
Acres drained at depletion	295.12
Percent of reservoir	21.31

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 25
Submitted by Conoco
Hearing Date Oct. 23, 1975

BELL LAKE UNIT MORROW PARTICIPATING AREA





BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 26
Submitted by Conoco
Hearing Date Oct. 23, 1975

.—.—.—.—. PRESENT PARTICIPATING AREA

LEGEND

Blue - Acreage leased to Texas West
Yellow - Excess acreage drained at well payout
Red - Excess acreage drained at point BLU participates
Purple - Excess acreage drained from BLU participation to depletion
Cross-hatch - Acreage drained by Texas West without risk penalty
Hachure - Acreage drained by Texas West interest by joint well

Division of Ownership - Bell Lake Unit - South Area

Working Interest Owner	(1) Devonian Part. Area "A"	(2) Morrow Part. Area	(3) Commun. E/2 Sec. 5	(4) Revised Dev. P.A. "A"	(5) Revised Morrow P.A.	(6) Revised Commun. E/2 Sec. 5
Bass	11.15457	11.15457	8.71451	11.33196	11.33196	8.85309
Exxon	11.15457	11.15457	8.71451	11.33196	11.33196	8.85309
B. Lowe	1.91719	1.91719	1.49780	1.94768	1.94768	1.52163
Phillips	5.57729	5.57729	4.35726	5.66598	5.66598	4.42655
Tripor	8.35634	8.35634	6.52839	8.48923	8.48923	6.63221
Conoco	60.27466	60.27466	47.08958	61.23319	61.23319	47.83843
Uncommitted Tr. 68	(0.34627)	(0.34627)	(0.27052)	-0-	-0-	-0-
Uncommitted Tr. 72	(1.21911)	(1.21911)	(0.95243)	-0-	-0-	-0-
Total Conoco	61.84004	61.84004	48.31253	61.23319	61.23319	47.83843
Texas West	-0-	-0-	21.87500	-0-	-0-	21.87500
Royalty						
USA	30.65206	22.22161	17.36063	31.13951	23.35639	18.24718
State	55.86457	55.56790	43.41242	56.48485	58.40556	45.62934
Committed Fee	11.91799	17.35195	13.55621	12.37564	18.23805	14.24848
Uncommitted Fee Tract 68	0.34627*	-0-	-0-	-0-	-0-	-0-
Uncommitted Fee Tract 72	1.21911*	4.85854*	3.79574*	-0-	-0-	21.87500
			21.87500			

() Expenses, investment and revenue allocated to Continental Oil Company
* Revenue suspensed

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 27
Submitted by Conoco
Hearing Date Oct. 23, 1975

Comparison of Supervision Charges

Unit - Location (Operator)	Effective Date	Drilling	Producing
Bell Lake Unit T-22, 23, 24 South R-33, 34 East (Continental Oil Company)	3-1-69*	$ 855	$ 143
James Ranch Unit No. 7 Section 6, T-23S, R-31E (Continental Oil Company)	6-25-74*	1,342	175
Brinninstool Unit Section 20, T-23S, R-33E (American Quasar)	9-1-74*	1,508	175
Continental Oil Company Authorization	Current	1,370	175

$1600 TW

*Escalated April 1, 1975, per operating agreement, based on average weekly earnings of Petroleum and Gas Production Employees as reported by U.S. Department of Labor, Bureau of Labor Statistics.

Lyon recommends - $1342 D+C
$175 prod.

Risk Factor - 10%
↘ 0%

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 28
Submitted by Conoco
Hearing Date Oct. 23, 1975

PROVIDED FURTHER, that in the event said operator does not commence the drilling of said well on or before the 15th day of ~~November~~, 1975, Order (1) of this order shall be null and void and of no effect whatsoever;

PROVIDED FURTHER, that should said well not be drilled to completion, or abandonment, within 120 days after commencement thereof, said operator shall appear before the Commission and show cause why Order (1) of this order should not be rescinded.

(2) That Texas West Oil & Gas Corporation is hereby designated the operator of the subject well and unit.

(3) That within 15 days after the effective date of this order ~~and within 30 days prior to commencing said well,~~ the operator shall furnish the Commission and each known working interest owner in the subject unit an itemized schedule of estimated well costs.

(4) That within 15 days from the date the schedule of estimated well costs is furnished to him, any non-consenting working interest owner shall have the right to pay his share of estimated well costs to the operator in lieu of paying his share of reasonable well costs out of production, and that any such owner who pays his share of estimated well costs as provided above shall remain liable for operating costs but shall not be liable for risk charges.

(5) That the operator shall furnish the Commission and each known working interest owner an itemized schedule of actual well costs within 90 days following completion of the well; that if no objection to the actual well costs is received by the Commission and the Commission has not objected within 45 days following receipt of said schedule, the actual well costs shall be the reasonable well costs; provided however, that if there is an objection to actual well costs within said 45-day period the Commission will determine reasonable well costs after public notice and hearing.

(6) That within 60 days following determination of reasonable well costs, any non-consenting working interest owner that has paid his share of estimated costs in advance as provided above shall pay to the operator his pro rata share of the amount that reasonable well costs exceed estimated well costs and shall receive from the operator his pro rata share of the amount that estimated well costs exceed reasonable well costs.

(7) That the operator is hereby authorized to withhold the following costs and charges from production:

(a) The pro rata share of reasonable well costs attributable to each non-consenting working interest owner who has not paid his share of estimated well costs within 15 days from the date the schedule of estimated well costs is furnished to him.

(b) As a charge for the risk involved in the drilling of the well, 150 percent of the pro rata share of reasonable well costs attributable to each non-consenting working interest owner who has not paid his share of estimated well costs within 15 days from the date the schedule of estimated well costs is furnished to him.

(8) That the operator shall distribute said costs and charges withheld from production to the parties who advanced the well costs.

(9) That $1600.00 per month is hereby fixed as a reasonable charge for supervision (combined fixed rates) while drilling, and that $250.00 per month is hereby fixed as a reasonable charge for supervision while producing; that the operator is hereby authorized to withhold from production the proportionate share of such supervision charge attributable to each non-consenting working interest, and in addition thereto, the operator is hereby authorized to withhold from production the proportionate share of actual expenditures required for operating such well, not in excess of what are reasonable, attributable to each non-consenting working interest.

(10) That any unsevered mineral interest shall be considered a seven-eighths (7/8) working interest and a one-eighth (1/8) royalty interest for the purpose of allocating costs and charges under the terms of this order.

(11) That any well costs or charges which are to be paid out of production shall be withheld only from the working interests share of production, and no costs or charges shall be withheld from production attributable to royalty interests.

(12) That all proceeds from production from the subject well which are not disbursed for any reason shall be placed in escrow in Lea County, New Mexico, to be paid to the true owner thereof upon demand and proof of ownership; that the operator shall notify the Commission of the name and address of said escrow agent within 90 days from the date of this order.

(13) 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

PHIL R. LUCERO, Member

JOE D. RAMEY, Member & Secretary

S E A L

dr/

In response to the stated objections of Continental Oil Company to the previous ruling of the Oil Conservation Commission sustaining the objection of Texas West Oil and Gas Corporation as to the availability of alternative remedies to Texas West. The following matters deserve mention:

1. Mr. Kellahin cited Section 65-3-14(e) to the Commission. This Section provides that a plan, and I quote, "shall be adopted by the Commission" with respect to a pool "Whenever it appears that the owners in any pool have agreed upon a plan..." of development or a unit agreement. Here we are confronted with a case where there has been no such agreement.

2. On August 20, 1953, the Commission approved Order No. R-355 which approved the Bell Lake Unit Agreement. This order merely adopted the unit agreement offer at that hearing and that unit agreement bound only the parties thereto. Texas West, or its predecessor in interest, was not and is not a party to that unit agreement.

3. It has been stated that the objections of Continental do not amount to a call for compulsory unitization for primary or development purposes of the interest of Texas West. Such compulsory unitization is not authorized by the statutes under which this Commission operates. If the availability of joinder in a unit is allowed to be considered as a valid objection to compulsory pooling, non-consenting interest owners within unit boundaries would be forced to join the unit in order to receive any benefits from their interests. This would, for all intents and purposes, be compulsory unitization for primary purposes by administrative order.

4. The statutes under which this Commission operates and all parties are familiar with these statutes, authorize it to

compulsorily pool acreage whenever there are certain factors. They are:

a. Multiple ownership, either working interest or royalty interest, within a single spacing or proration unit,

b. interest owners in the proposed unit who have not agreed to pool their interests, and

c. one owner who has the right to drill, has drilled or proposes to drill a well.

5. This case was called for the purpose of hearing a compulsory pooling application and the designation of an operator. Both Texas West, as the applicant, and Continental, the protestant, have filed application to force pool the E/2 of Section 5, Township 24 South, Range 34 East, Lea County, New Mexico. The case was advertized for that purpose and we expect all testimony to be directed and limited to matters properly within the call of this case.

Our previous ruling is reaffirmed, the objection of Texas West Oil and Gas is sustained, and evidence as to Continental's plans for development of the Bell Lake Unit is irrelevant and therefore not admissible. Mr. Kellahin's objections are noted in the record.

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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. 5362
Order No. R-4918

APPLICATION OF CONTINENTAL OIL COMPANY
FOR THE ADOPTION OF POOL RULES, EDDY
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on November 13, 1974, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 19th day of November, 1974, 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, Continental Oil Company, is the owner and operator of two gas wells in the South Bell Lake-Morrow Gas Pool, Lea County, New Mexico.

(3) That said South Bell Lake-Morrow Gas Pool was created and designated by the Commission by Order No. R-4821 effective August 1, 1974, with the concurrent abolishment of the Bell Lake-Pennsylvanian Gas Pool, which was created and designated by Commission Order No. R-569, effective January 13, 1955.

(4) That by Commission Order No. R-2707, dated May 25, 1964, Rule 104 of the Commission Rules and Regulations was amended to provide that all gas pools of Pennsylvanian age or older in Southeast New Mexico which were created and defined June 1, 1964, or later shall have 320-acre spacing and proration units, inasmuch as it was found that in Southeast New Mexico,... "a gas well completed in the Pennsylvanian formation or a deeper formation will efficiently and economically drain and develop a 320-acre tract."

(5) That the applicant in the instant case seeks the promulgation of rules including a provision for 320-acre spacing for the South Bell Lake-Morrow Gas Pool, in Lea County, New Mexico, inasmuch as that pool was excluded from the provisions of Order No. R-2707, because it was created and defined as the Bell Lake-Pennsylvanian Gas Pool prior to the cut-off date of June 1, 1964.

(6) That no appearances were made at the hearing of the instant case and no objection was received to the inclusion of the South Bell Lake-Morrow Gas Pool under the provisions of Rule 104 of the Commission Rules and Regulations for gas pools of Pennsylvanian age or older.

(7) That one well in the South Bell Lake-Morrow Gas Pool in Lea County, New Mexico, will efficiently and economically drain and develop 320 acres, and the inclusion of said pool under the 320-acre provisions of Rule 104 for pools of Pennsylvanian age or older will not cause waste nor violate correlative rights, and should be approved.

IT IS THEREFORE ORDERED:

(1) That effective December 1, 1974, each well completed or recompleted in the South Bell Lake-Morrow Gas Pool or in the Morrow formation within one mile thereof shall be subject to the provisions of Rule 104 of the Commission Rules and Regulations notwithstanding the fact said pool was created and defined prior to June 1, 1964.

IT IS FURTHER ORDERED:

(1) That the locations of all wells presently drilling to or completed in the South Bell Lake-Morrow Gas Pool or in the Morrow formation within one mile thereof are hereby approved; that the operator of any well having an unorthodox location shall notify the Hobbs District Office of the Commission in writing of the name and location of the well by December 15, 1974.

(2) That pursuant to Paragraph A. of Section 65-3-14.5, NMSA 1953, contained in Chapter 271, Laws of 1969, existing wells in the South Bell Lake-Morrow Gas Pool shall have dedicated thereto 320 acres in accordance with Rule 104 of the Commission Rules and Regulations; or pursuant to Paragraph C. of said Section 65-3-14.5, existing wells may have non-standard units dedicated thereto.

Failure to file new Forms C-102 with the Commission dedicating 320 acres to a well or to obtain a non-standard unit approved by the Commission within 60 days from the effective date of this order shall subject the well to cancellation of allowable.

(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 herein-above designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

I. R. TRUJILLO, Chairman

ALEX J. ARMIJO, Member

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

S E A L

dr/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

CASE No. 3044
Order No. R-2707

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION COMMISSION ON ITS OWN MOTION TO CONSIDER THE AMENDMENT OF CERTAIN RULES.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on May 13, 1964, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 25th day of May, 1964, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

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

(2) That in Lea, Chaves, Eddy, and Roosevelt Counties, New Mexico, a gas well completed in a formation no deeper than the top of the Pennsylvanian formation will efficiently and economically drain and develop a 160-acre tract.

(3) That in Lea, Chaves, Eddy, and Roosevelt Counties, New Mexico, a gas well completed in the Pennsylvanian formation or a deeper formation will efficiently and economically drain and develop a 320-acre tract.

(4) That Rule 104 of the Commission Rules and Regulations should be amended to permit the dedication of 160 acres to a gas well in Lea, Chaves, Eddy, and Roosevelt Counties, New Mexico, projected to or completed in a formation no deeper than the top of the Pennsylvanian formation.

(5) That Rule 104 of the Commission Rules and Regulations should also be amended to permit the dedication of 320 acres to

a gas well in Lea, Chaves, Eddy, and Roosevelt Counties, New Mexico, projected to or completed in the Pennsylvanian formation or a deeper formation.

(6) That Rule 104 of the Commission Rules and Regulations should also be amended to establish a testing procedure to determine whether a well in Lea, Chaves, Eddy, and Roosevelt Counties should properly be classified as a gas well upon completion.

(7) That amendment of Rule 104 as set out above will prevent the economic loss caused by the drilling of unnecessary wells, will avoid the augmentation of risks arising from the drilling of an excessive number of wells, will prevent reduced recovery which might result from the drilling of too few wells, and will otherwise prevent waste and protect correlative rights.

(8) That Rule 301 of the Commission Rules and Regulations should be amended to require a gas-oil ratio test to be taken within 20 to 30 days following completion or recompletion of an oil well and to be filed with the Commission within 10 days following completion of the test.

(9) That Rule 401 of the Commission Rules and Regulations should be amended to require gas wells which are not connected to a gas gathering facility to be tested within 30 days following the installation of a christmas tree and to require the test to be filed with the Commission within 10 days following completion of the test.

(10) That amendment of Rules 301 and 401 as set out above will enable the Oil Conservation Commission to more efficiently and effectively administer the laws of the State of New Mexico concerning the conservation of oil and gas, the prevention of waste, and the protection of correlative rights.

IT IS THEREFORE ORDERED:

(1) That Rule 104 of the Commission Statewide Rules and Regulations is hereby amended to read in its entirety as follows:

RULE 104. WELL SPACING: ACREAGE REQUIREMENTS FOR DRILLING TRACTS

A. CLASSIFICATION OF WELLS: WILDCAT WELLS AND DEVELOPMENT WELLS

Any well which is to be drilled a distance of one mile or more from (1) the outer boundary of any defined pool which has

produced oil or gas from the formation to which the well is projected, and (2) any other well which has produced oil or gas from the formation to which the proposed well is projected, shall be classified as a wildcat well.

Any well which is not a wildcat well as defined above shall be classified as a development well for the nearest pool which has produced oil or gas from the formation to which the well is projected. Any such development well shall be spaced, drilled, operated, and produced in accordance with the rules and regulations in effect in such nearest pool, provided the well is completed in the formation to which it was projected.

Any well classified as a development well for a given pool but which is completed in a producing horizon not included in the vertical limits of said pool shall be operated and produced in accordance with the rules and regulations in effect in the nearest pool within one mile which is producing from that horizon. If there is no designated pool for said producing horizon within one mile, the well shall be re-classified as a wildcat well.

B. ACREAGE AND WELL LOCATION REQUIREMENTS FOR WILDCATS

I. Lea, Chaves, Eddy, and Roosevelt Counties

(a) Wildcat Gas Wells

In Lea, Chaves, Eddy, and Roosevelt Counties, a wildcat well which is projected as a gas well to a formation and in an area which, in the opinion of the engineer or supervisor approving the application to drill, may reasonably be presumed to be productive of gas rather than oil shall be located on a drilling tract consisting of 160 surface contiguous acres, more or less, substantially in the form of a square which is a quarter section, being a legal subdivision of the U. S. Public Land Surveys, and shall be located not closer than 660 feet to any outer boundary of such tract nor closer than 330 feet to any quarter-quarter section or subdivision inner boundary.

Provided however, that any such wildcat gas well which is projected to a formation of Pennsylvanian age or older shall be located on a drilling tract consisting of 320 surface contiguous acres, more or less, comprising any two contiguous quarter sections of a single governmental section, being a legal subdivision of the U. S. Public Land Surveys. Any such

"deep" wildcat gas well to which is dedicated more than 160 acres shall be located not closer than 660 feet to the nearest side boundary of the dedicated tract nor closer than 1980 feet to the nearest end boundary nor closer than 330 feet to any quarter-quarter section or subdivision inner boundary. (For the purpose of this rule, "side" boundary is defined as one of the outer boundaries running lengthwise to the tract's greatest overall dimension; "end" boundary is defined as one of the outer boundaries perpendicular to a side boundary and closing the tract across its least overall dimension.)

(b) Wildcat Oil Wells

In Lea, Chaves, Eddy, and Roosevelt Counties, a wildcat well which is not a wildcat gas well as defined above shall be located on a tract consisting of approximately 40 surface contiguous acres substantially in the form of a square which is a legal subdivision of the U. S. Public Land Surveys, or on a governmental quarter-quarter section or lot, and shall be located not closer than 330 feet to any boundary of such tract.

In the event gas production is encountered in a well which was projected as an oil well and which is located accordingly but does not conform to the above gas well location rule, it shall be necessary for the operator to bring the matter to a hearing before approval for the production of gas can be given.

II. San Juan, Rio Arriba, and Sandoval Counties

(a) Wildcat Gas Wells

In San Juan, Rio Arriba, and Sandoval Counties, a wildcat well which is projected to a gas-producing horizon shall be located on a designated drilling tract consisting of 160 surface contiguous acres, more or less, substantially in the form of a square which is a quarter section, being a legal subdivision of the U. S. Public Land Surveys, and shall be located not closer than 790 feet to any outer boundary of the tract nor closer than 130 feet to any quarter-quarter section or subdivision inner boundary.

In the event oil production is encountered in a well which was projected to a gas-producing horizon and which is located accordingly but does not conform to the oil well location rule below, it shall be necessary for the operator to bring the matter to a hearing before approval for the production of oil can be given.

(b) Wildcat Oil Wells

A wildcat well which is projected to an oil-producing horizon as recognised by the Commission shall be located on a tract consisting of approximately 40 surface contiguous acres substantially in the form of a square which is a legal subdivision of the U. S. Public Land Surveys, or on a governmental quarter-quarter section or lot, and shall be located not closer than 330 feet to any boundary of such tract.

In the event gas production is encountered in a well which was projected to an oil-producing horizon and which is located accordingly but does not conform to the above gas well location rule, it shall be necessary for the operator to bring the matter to a hearing before approval for the production of gas can be given.

III. All counties except Lea, Chaves, Eddy, Roosevelt, San Juan, Rio Arriba, and Sandoval

Any wildcat well in any county other than Lea, Chaves, Eddy, Roosevelt, San Juan, Rio Arriba, and Sandoval shall be located on a tract consisting of approximately 40 surface contiguous acres substantially in the form of a square which is a legal subdivision of the U. S. Public Land Surveys, or on a governmental quarter-quarter section or lot and shall be located not closer than 330 feet to any boundary of such tract.

C. ACREAGE AND WELL LOCATION REQUIREMENTS FOR DEVELOPMENT WELLS

I. Oil Wells, All Counties

Unless otherwise provided in special pool rules, each development well for a defined oil pool shall be located on a tract consisting of approximately 40 surface contiguous acres substantially in the form of a square which is a legal subdivision of the U. S. Public Land Surveys, or on a governmental quarter-quarter section or lot, and shall be located not closer than 330 feet to any boundary of such tract nor closer than 660 feet to the nearest well drilling to or capable of producing from the same pool.

II. Gas Wells

(a) Lea, Chaves, Eddy, and Roosevelt Counties

Unless otherwise provided in special pool rules, each development well for a defined gas pool of less than Pennsylvanian age or for a defined gas pool of Pennsylvanian age or older which was created and defined by the Commission prior to June 1, 1964, shall be located on a designated drilling tract consisting of 160 surface contiguous acres, more or less, substantially in the form of a square which is a quarter section being a legal subdivision of the U. S. Public Land Surveys, and shall be located not closer than 660 feet to any outer boundary of such tract nor closer than 330 feet to any quarter-quarter section or subdivision inner boundary nor closer than 1320 feet to the nearest well drilling to or capable of producing from the same pool.

Unless otherwise provided in the special pool rules, each development well for a defined gas pool of Pennsylvanian age or older which was created and defined by the Commission after June 1, 1964, shall be located on a designated drilling tract consisting of 320 surface contiguous acres, more or less, comprising any two contiguous quarter sections of a single governmental section, being a legal subdivision of the U. S. Public Land Surveys. Any such well having more than 160 acres dedicated to it shall be located not closer than 660 feet to the nearest side boundary of the dedicated tract nor closer than 1980 feet to the nearest end boundary nor closer than 330 feet to any quarter-quarter section or subdivision inner boundary. (For the purpose of this rule, "side" boundary and "end" boundary are as defined in Section B I (a) of this rule.)

(b) <u>San Juan, Rio Arriba, and Sandoval Counties</u>

Unless otherwise provided in special pool rules, each development well for a defined gas pool shall be located on a designated drilling tract consisting of 160 surface contiguous acres more or less, substantially in the form of a square which is a quarter section, being a legal subdivision of the U. S. Public Land Surveys, and shall be located not closer than 790 feet to any outer boundary of the tract nor closer than 130 feet to any quarter-quarter section line or subdivision inner boundary.

(c) <u>All counties except Lea, Chaves, Eddy, Roosevelt, San Juan, Rio Arriba, and Sandoval</u>

Unless otherwise provided in special pool rules, each development well for a defined gas pool shall be located on a designated drilling tract consisting of 160 surface contiguous acres, more or less, substantially in the form of a square which is a quarter section, being a legal subdivision of the U. S. Public

Land Surveys, and shall be located not closer than 660 feet to any outer boundary of such tract nor closer than 330 feet to any quarter-quarter section or subdivision inner boundary nor closer than 1320 feet to the nearest well drilling to or capable of producing from the same pool.

D. ACREAGE ASSIGNMENT, COMPLETED WELLS

I. Well Tests and Classification

It shall be the responsibility of the operator of any wildcat gas well or development gas well to which more than 40 acres has been dedicated to conduct a potential test within 30 days following completion of the well and to file the same with the Commission within 10 days following completion of the tests. (See Rule 401.)

Date of completion for a gas well shall be the date a christmas tree is installed or 30 days following conclusion of active completion work on the well, whichever date comes first.

Upon making a determination that the well should not properly be classified as a gas well, the Commission will reduce the acreage dedicated to the well.

Failure of the operator to file the aforesaid tests within the specified time will also subject the well to such acreage reduction.

II. Non-Standard Units

Any completed gas well which does not have the required amount of acreage dedicated to it for the pool or formation in which it is completed may not be produced until a standard unit for the well has been formed and dedicated or until a non-standard unit has been approved.

The Secretary-Director of the Commission may grant administrative approval to non-standard gas units without notice and hearing when an application has been filed for a non-standard unit and the unorthodox size or shape of the unit is necessitated by a variation in the legal subdivision of the U. S. Public Land Surveys, or the following facts exist and the following provisions are complied with:

(a) The non-standard unit consists of quarter-quarter sections or lots that are contiguous by a common bordering side.

(b) The non-standard unit lies wholly within a single governmental quarter section if the well is completed in a pool or formation for which 160 acres is the standard unit size or wholly within a single governmental half section if the well is completed in a pool or formation for which 320 acres is the standard unit size.

(c) The applicant presents written consent in the form of waivers from all offset operators and from all operators owning interests in the quarter section (for 160-acre pools or formations) or the half section (for 320-acre pools or formations) in which the non-standard unit is situated and which acreage is not included in said non-standard unit.

(d) In lieu of paragraph (c) of this rule, the applicant may furnish proof of the fact that all of the aforesaid operators were notified by registered or certified mail of his intent to form such non-standard unit. The Secretary-Director may approve the application if no such operator has entered an objection to the formation of such non-standard unit within 30 days after the Secretary-Director has received the application.

E. Notice of Intention to Drill (C-101) for any well shall designate the exact legal subdivision allotted to the well and no C-101 will be approved by the Commission or any of its agents without proper designation of acreage.

F. The Secretary-Director of the Commission shall have authority to grant an exception to the well location requirements of Sections B and C above without notice and hearing where application has been filed in due form and

The necessity for the unorthodox location is based on topographical conditions, and

(a) All owners of 40-acre tracts directly or diagonally offsetting the 40-acre tract upon which the unorthodox location is proposed have consented in writing to the proposed location,

(b) In lieu of paragraph 2(a) of this rule, the applicant may furnish proof of the fact that all of said offset operators were notified by registered or certified mail of his intent to drill an unorthodox location. The Secretary-Director of the Commission may approve the application if no offset operator has entered an objection to the unorthodox location within 20 days after the Secretary-Director has received the application.

G. Whenever an exception is granted, the Commission may take such action as will offset any advantage which the person securing the exception may obtain over other producers by reason of the unorthodox location

H. If the drilling tract is within an allocated oil pool or is placed within such allocated pool at any time after completion of the well and the drilling tract consists of less than 39 1/2 acres or more than 40 1/2 acres, the top unit allowable for such well shall be increased or decreased in the proportion that the number of acres in the drilling tract bears to 40.

I. If the drilling tract is within an allocated gas pool or is subsequently placed within an allocated gas pool, and the drilling tract consists of less than 158 acres or more than 162 acres in 160-acre pools, or less than 316 acres or more than 324 acres in 320-acre pools, the top allowable for such well shall be decreased or increased in the proportion that the number of acres in the drilling tract bears to a standard unit for the pool.

J. In computing acreage under H and I above, minor fractions of an acre shall not be counted but 1/2 acre or more shall count as 1 acre.

K. The provisions of H and I above shall apply only to wells completed after January 1, 1950. Nothing herein contained shall affect in any manner any well completed prior to the effective date of this rule and no adjustments shall be made in the allowable production for any such wells by reason of these rules

L. In order to prevent waste the Commission may, after notice and hearing, fix different spacing requirements and require greater acreage for drilling tracts in any defined oil pool or in any defined gas pool notwithstanding the provisions of B and C above.

M. The Commission may approve the pooling or communitization of fractional lots of 20.49 acres or less with another oil proration unit when:

1. The units involved are contiguous;

2. They are part of the same basic lease, carrying the same royalty interest; and

3. The ownership of the units involved is common.

Application to the Commission for pooling shall be accompanied by three (3) copies of a certified plat showing the dimensions and acreage involved in the pooling, the ownership of all leases and royalty interests involved, and the location of any proposed wells.

Applicant shall furnish all operators who directly and diagonally offset the units involved a copy of the application to the Commission, and shall include with his application a written statement that all offset operators have been properly notified. Offset operators shall include only those operators who have offset properties within the State of New Mexico. The Commission shall wait at least ten days before approving any such pooling, and shall approve such pooling only in the absence of objection from any offset operator. In the event that an operator objects to the pooling, the Commission shall consider the matter only after proper notice and hearing.

The Commission may waive the ten-day waiting period requirement if the applicant furnishes the Commission with the written consent to the pooling by all offset operators involved.

The Commission may consider that the requirements of subparagraphs 2 and 3 of paragraph M of this rule have been fulfilled if the applicant furnishes with each copy of each application to the Commission a copy of [illegible] pooling agreement communitizing the units involved.

[illegible] well drilled on any communitized tract shall be located in the approximate geographical center of the combined units with a tolerance of 150 feet for topographical conditions, but in any event shall not be located closer than 330 feet to the outer boundaries of the proposed proration unit or communitized tract.

(2) That Rule 301 (a) of the Commission Statewide Rules and Regulations is hereby amended to read in its entirety as follows:

(a) Each operator shall take a gas-oil ratio test no sooner than 20 days nor later than 30 days following the completion or recompletion of each oil well, if (1) the well is a wildcat, or (2) the well is located in a pool which is not exempt from the requirements of this rule. (Wells completed within one mile of the outer boundary of a defined oil pool producing from the same formation shall be governed by the provisions of this rule which are applicable to the pool). The results of the test shall be reported to the Commission on Form C-116 within 10 days following completion of the test. The gas-oil ratio thus reported shall become effective for proration purposes on the first day of the calendar month following the date they are reported.

Each operator shall also take an annual gas-oil ratio test of each producing oil well, located within a pool not exempted from the requirements of this rule, during a period prescribed by the Commission. A gas-oil ratio survey schedule shall be established by the Commission setting forth the period in which gas-oil ratio tests are to be taken for each pool wherein a test is required. The gas-oil ratio test applicable shall be such test designated by the Commission, made by such method and means, and in such manner as the Commission in its discretion may prescribe from time to time.

(3) That Rule 401 of the Commission Statewide Rules and Regulations is hereby amended to read in its entirety as follows:

RULE 401. METHOD OF DETERMINING NATURAL GAS WELL POTENTIAL

All operators shall conduct tests to determine the daily open flow potential volumes of all natural gas wells from which gas is being used or marketed. Such tests shall be reported on forms prescribed by the Commission within 60 days after: (1) the date of initial connection of the well to a gas transportation facility and (2) the date of reconnection following workover.

To establish comparable open flow capacity, wells shall be tested in accordance with the New Mexico Oil Conservation Commission "Manual for Back-Pressure Test for Natural Gas Wells." In the event the Commission approves an alternate method for testing, all wells producing from a common source of supply shall be tested in a uniform and comparable manner.

All gas wells which are not connected to a gas gathering facility shall be tested within 30 days following the installation of a christmas tree. Tests shall be taken in accordance with the "Procedure for Testing Unconnected Gas Wells" contained in Supplement I to the New Mexico Oil Conservation Commission "Manual for Back-Pressure Tests for Natural Gas Wells.". Tests shall be reported on Form C-122 in compliance with Rule 1121 and shall be filed within 10 days following completion of the test.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JACK M. CAMPBELL, Chairman

E. S. WALKER, Member

S E A L

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

esr/

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. 5493
Order No. R-5039~~A~~ B

APPLICATION OF TEXAS WEST OIL & GAS CORPORATION FOR COMPULSORY POOLING, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on ~~[illegible]~~ OCTOBER 23, 1975, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this ~~25th~~ day of ~~[illegible]~~ NOVEMBER, 1975, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Texas West Oil & Gas Corporation, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, NMPM, Bell Lake Field, Lea County, New Mexico.

NM:
Horace at OCD
has one
file which is
an exception. She
wants it returned
as soon as possible.

NM
3/19/80

(3) That ~~the application in the~~ this case was originally heard before a duly appointed examiner of the Commission on May 28, 1975.

(4) That on June 10, 1975, the Commission entered Order No. R-5039 which pooled the subject acreage and designated the applicant as operator of this unit for the purpose of drilling a well to the Pennsylvanian formation.

(5) That Continental Oil Company filed for and was granted a hearing de novo which was held on July 25, 1975.

(6) That on September 2, 1975, the Commission entered Order No. R-5039-A, which reaffirmed its previous order pooling this acreage but reducing the risk factor assessed therein.

(7) That Continental Oil Company made timely application for rehearing.

(8) That said application for rehearing was considered by the Commission on September 30, 1975, and it decided to rehear the case in its entirety on October 23, 1975, and so advised all parties to the case.

(9) That by Commission Order No. R-2707, dated May 25, 1964, Rule 104 of the Commission Rules and Regulations was amended to provide that all gas pools of Pennsylvanian age or older in Southeast New Mexico which were created and defined June 1, 1964, or later shall have 320-acre spacing and proration units, inasmuch as it was found that in Southeast New Mexico ",...a gas well completed in the Pennsylvanian formation or a deeper formation will efficiently and economically drain and develop a 320-acre tract."

(10) That by Commission Order No. R-4918, dated November 19, 1974, the South Bell Lake-Morrow Gas Pool and the Morrow formation within one mile thereof, which includes the acreage involved in the subject application, was made ~~from~~ subject to the provisions of Rule 104 of the Commission Rules and Regulations thereby designated Bell Lake-Pennsylvanian Gas Pool, notwithstanding the fact said pool was created and defined prior to June 1, 1964.

(11) That the ~~spacing rules~~ Standard Spacing Unit for a well drilled to the Morrow formation in the South Bell Lake-Morrow Gas Pool is 320 acres.

(12) That the E/2 of Section 5, Township 24 South, Range 34 East, the subject matter of this application, contains 320 acres.

(13) That no question was properly raised before the Commission ~~in this proceeding~~ challenging the spacing rules for the South Bell Lake-Morrow Gas Pool.

(14) That Section 65-3-14(c) NMSA, 1953 Compilation, sets out those factors the Commission must consider when an application for compulsory pooling comes before it.

(15) That said Section 65-3-14(c) provides that the Commission shall pool lands embraced within a single spacing unit "...to avoid the drilling of unnecessary wells or to protect correlative rights, or to prevent waste...." (emphasis added) whenever the following factors exist:

a. multiple ownership, either working interest or royalty interest, within a single spacing or proration unit,

b. interest owners in the proposed unit who have not agreed to pool their interests, and

c. one owner who has the right to drill, has drilled or proposes to drill a well.

(16) That the applicant, Texas West Oil and Gas Corporation, has the operating rights to a 7/32 undivided working interest in the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, NMPM, not committed to the Bell Lake Unit Agreement, and by virtue thereof has the right to drill and proposes to drill a well at an orthodox location for the development of said 320-acre spacing unit.

(TR.55)

(25) ~~(24)~~ That if Continental's objections summarized in Finding No. (19)b above were adopted by the Commission as a realistic alternative to compulsory pooling of the E/2 of Section 5, the applicant, Texas West Oil & Gas Corporation, would be left with the choice of either joining the Bell Lake Unit, an action which it considers economically unwise, or staying out of said unit ~~[illegible]~~ and being drained, which would impair its correlative rights.

(24) That the evidence ~~presented~~ clearly showed that the applicant's correlative rights ~~are being violated~~ ~~and~~ would be protected by the granting of this application

(27) ~~(26)~~ That the evidence presented at the rehearing showed that the drilling of a well on the E/2 of said Section 5 could encounter other gas producing zones not being produced from other wells offsetting the proposed well and, therefore, could recover gas that would otherwise be left in the ground and never recovered, ~~and wasted.~~

(28) ~~(27)~~ That the evidence ~~presented~~ clearly showed that two wells will drain more gas from a reservoir than one well and will, therefore, produce gas that would otherwise be left in the ground.

~~(28)~~ (29) That when natural gas is left in the ground and not produced, this reduces the total quantity of natural gas ultimately recovered and ~~this~~ constitutes underground waste.

(30) That a well drilled on the E/2 of said Section 5 would not be an unnecessary well for it would prevent waste, protect correlative rights and develop this acreage in a fashion consistent with the spacing rules for the South Bell Lake-Morrow Gas Pool.

(31) That the drilling of the proposed well will enable the mineral interest owners in the E/2 of said Section 5 to produce their just and fair share of the hydrocarbons underlying their tract ~~from~~ in the Morrow formation.

(32) That to protect correlative rights, prevent waste, and to afford to the owner of each interest in said unit the opportunity to recover or receive without unnecessary expense his just and fair share of the gas in said pool, the subject application should be approved by pooling all mineral interests, whatever they may be, within said unit.

(33) That the applicant should be designated the operator of the subject well and unit.

(34) That any non-consenting working interest owner should be afforded the opportunity to pay his share of estimated well costs to the operator in lieu of paying his share of reasonable well costs out of production.

(35) That any non-consenting working interest owner that does not pay his share of estimated well costs should have withheld from production his share of the reasonable well costs plus an additional 150 percent thereof as a reasonable charge for the risk involved in the drilling of the well.

(36) That any non-consenting interest owner should be afforded the opportunity to object to the actual well costs but that actual well costs should be adopted as the reasonable well costs in the absence of such objection.

(37) That following determination of reasonable well costs, any non-consenting working interest owner that has paid his share of estimated costs should pay to the operator any amount that reasonable well costs exceed estimated well costs and should receive from the operator any amount that paid estimated well costs exceed reasonable well costs.

(38) That $1600.00 per month should be fixed as a reasonable charge for supervision (combined fixed rates) while drilling, and that $250.00 per month should be fixed as a reasonable charge for supervision while producing; that the operator should be authorized to withhold from production the proportionate share of such supervision charge attributable to each non-consenting working interest, and in addition thereto, the operator should be authorized

to withhold from production the proportionate share of actual expenditures required for operating the subject well, not in excess of what are reasonable, attributable to each non-consenting working interest.

(3~~9~~) That all proceeds from production from the subject well which are not disbursed for any reason should be placed in escrow to be paid to the true owner thereof upon demand and proof of ownership.

(4~~0~~) That upon the failure of the operator of said pooled unit to commence drilling of the well to which said unit is dedicated on or before ~~November 15, 1975,~~ January 15, 1975 the order pooling said unit should become null and void and of no effect whatsoever.

TEXAS WEST OIL & GAS CORPORATION

DISTRICT OFFICE:

13 December 1977

Transwestern Pipeline Company
P.O. Box 2521
Houston, Texas 77001

File
Case 5493

Re: Madera #1 (TW Lease #24060)
E/2 Section 5, T-24-S, R-34-E,
Lea County, New Mexico
Transwestern Station No. 1251-1

Attention: Mr. Hugh Gutzman

Gentlemen:

This is to confirm our telecon of December 5 whereby you were advised that subject well reached payout October 3, 1977 thereby satisfying NMOCC Order No. R-5039-B. Upon reaching payout, the current Texas West, et al, interest is reduced from .77940700 to .218750 and the Conoco, et al, interest of .0877970 is increased to .6486540 effective 7:00 a.m. October 4, 1977.

If you have any questions, please so advise.

Yours very truly,

TEXAS WEST OIL & GAS CORPORATION

Alice Sandell

Alice Sandell
Office Manager

AS:kw

xc: Exxon Corporation
Phillips Petroleum Company
NMOCC - Santa Fe, New Mexico
Attn: Mr. Joe Ramey
Texas West Accounting

IT IS THEREFORE ORDERED:

(1) That all mineral interests, whatever they may be, in the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, NMPM, Bell Lake Field, Lea County, New Mexico, are hereby pooled to form a standard 320-acre gas spacing and proration unit to be dedicated to a well to be drilled at an orthodox location for said unit.

PROVIDED HOWEVER, that the operator of said unit shall commence the drilling of said well on or before the 15th day of ~~November~~, 1975, and shall thereafter continue the drilling of said well with due diligence to a depth sufficient to test the Pennsylvanian formation;

BEFORE THE

OIL CONSERVATION COMMISSION OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF TEXAS WEST OIL & GAS CORPORATION FOR COMPULSORY POOLING, BELL LAKE AREA, LEA COUNTY, NEW MEXICO - REHEARING

Orders No. R-5039
No. R-5039-A

STATEMENT OF CONTINENTAL OIL COMPANY

STATEMENT OF THE CASE

This is a proceeding for compulsory pooling, brought by Texas West Oil & Gas Corporation under the provisions of Sec. 65-3-14, New Mexcio Statutes Annotated, 1953 Comp., as amended, to pool all mineral interests as to the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, Lea County, New Mexico.

The application was heard before Commission Examiner Richard L. Stamets as Case No. 5493 on May 28, 1975, at which time Continental Oil Company as operator of the Bell Lake Unit, appeared and protested the application.

On June 10, 1975, the Commission entered its order No. R-5039, pooling the subject acreage. As provided by Sec. 65-3-11.1, N.M.S.A., 1953, Continental Oil Company filed a timely application for a hearing do novo before the Commission. This hearing was held on July 25, 1975, and on September 2, 1975, the Commission entered its order No. R-5093-A, again pooling the subject acreage, modifying the previous order only to the extent of reducing the risk factor allowed from 200% to 150%.

As provided by Sec. 65-3-22, N.M.S.A., 1953, Continental

filed a timely application for rehearing. This application, as provided by law, pointed out the deficiencies of order No. R-5039-A, and the lack of substantial evidence in the record to support it. The Commission, presumably seeing the deficiencies in its order and in the record granted the rehearing, without entering an order to that effect. This rehearing was held October 23, 1975.

Prior to the rehearing, according to the evidence admitted over the protest of Continental, Texas West commenced, with the approval of the Commission, the drilling of a well in the E/2 of Section 5.

COMPULSORY POOLING STATUTE

The Commission derives its authority to enter an order compulsorily pooling mineral interests uderlying a spacing or proration unit from Sec. 65-3-14 C, N.M.S.A., 1953.

The requirements of this statute were stated at the rehearing by Mr. Ramey, and in Finding No. 7 of the Commission's order No. R-5039-A, as follows:

a. multiple ownership, either working interest or royalty interest, within a single spacing or proration unit,

b. interest owner in the proposed unit who have not agreed to pool their interests, and

c. one owner who has the right to drill, has drilled or proposes to drill a well.

This statement of the requirements for compulsory pooling ignores the very basic, fundamental finding that the Commission must make in the exercise of its jurisdiction -- the prevention of waste. Continental Oil Company v. Oil Conservation Commission, 70 N. M. 310.

In considering the compulsory pooling statute, Sec.

65-3-14 C, the New Mexico Supreme Court had this to say in Sims v. Mechem 72 N. M. 186.

"Unquestionably the commission is authorized to require pooling of property when such pooling has not been agreed upon by the parties, Sec. 65-3-14(c), N.M.S.A., 1953, * * * But the statutory authority of the commission to pool property or to modify existing agreements relating to production within a pool under either of these subsections must be predicated on the prevention of waste. Sec. 65-3-10, 1953 Comp." (Emphasis added)

waste finding required

The Sims case was a case in which the Commission made the findings set out above and in finding No. 7 of Order No. R-5039-A. The court held this clearly insufficient to support the jurisdiction of the Commission to enter the order. See Commission Order No. 1310, and compare Commission Order No. R-677. Also see Continental Oil Co., vs. O.C.C., supra, as quoted in the Sims case at p. 189.

In the Sims case, the court summed up the situation as follows:

" * * * There is nothing in the evidence before the commission tending to support a finding of waste or the prevention of waste by pooling of the property into two standard units.

"We conclude, therefore, that since commission order R-1310 contains no finding as to the existence of waste, or that pooling would prevent waste, based upon evidence to support such a finding, the commission was without jurisdiction to enter order R-1310, and that is void. Continental Oil Co. v. Oil Conservation Commission, supra." (Emphasis added)

This is exactly the situation that existed when the Commission entered its orders Nos. R-5039 and R-5039-A. There was no finding in either order on waste, and no evidence in the record that would support such a finding. The compulsory pooling in this case should have been denied at the first hearing, and at a minimum, at the second. Regardless of its purposes, the Commission is required to

comply with the law. Continental Oil Co. v. O.C.C., supra, at p. 326.

The Commission in the past, and again in this case, has apparently operated on the theory that any owner who has the right to drill within a spacing or proration, who cannot obtain the cooperation of other interest owners, is thereby, perforce, entitled to a compulsory order with all of the other benefits authorized by the pooling statute. This is clearly not the law. Sims v. Mechem, supra. Such a pooling order should only be granted where such a well will avoid the drilling of unnecessary wells, protect correlative rights, and prevent waste, as provided by Sec. 65-3-14 C. Texas West would have the Commission read these factors in the alternative, but that is contrary to the plain language of the Sims case, the ruling of which is binding on the Commission. The authority of the Commission is founded in the prevention of waste; the prime objective of the conservation statutes, including the statute involved here, is directed to that end. Sims v. Mechem, supra, Continental Oil Co. v. O.C.C. 531 P.2d 939 (N.M. 1975).

Finding Quote statute

WASTE

As we have pointed out, there was no finding of waste, and no evidence to support a finding that waste would be prevented by the entry of a compulsory pooling order when Commission orders R-5039 and R-5039-A were entered. The record, on the other hand, was replete with evidence to support a finding that if the Texas West application were granted, waste would, in fact, occur. In view of this situation, and in view of the holding of the New Mexico Supreme Court in Fasken v. O.C.C., 532 P. 2d 588 (N.M. 1975), the

Commission granted our application for rehearing. The record was woefully deficient to support the Commission orders.

At this last hearing on October 23, 1975, the applicant was still apparently not aware of its obligation to show the Commission that waste was occuring, or that waste would be prevented by the approval of its application for compulsory pooling. It founded its case on the protection of correlative rights (which we will discuss later) and offered nothing on waste until, with the prodding of a member of the Commission staff, some rather weak testimony regarding waste was elicited from the Texas West witness. This is not to say that the Commission staff should seek to determine if waste is actually occuring, or will occur. The Commission has the positive duty to elicite that information, and to act on it. We will discuss this also later in this statement.

But with this prodding, what kind of evidence did Texas West offer? The testimony in response to questions that called for a "yes" answer, indicated that there might possibly be stringers of Morrow sands encountered at Texas West's well site that were not encountered in the Bell Lake Unit No. 14 well. The witness, on cross examination by Continental, admitted that he had no evidence to support this conclusion, and that it was, at best, speculative. His expert petroleum engineer, Mr. Hickman, made the same admission.

In contrast to this, Continental offered extensive testimony and evidence as to the nature of the particular Morrow reservoir encountered in the Bell Lake Unit No. 14 well. This testimony, wholly unrefuted, shows the formation has an extremely high permability and that the No. 14 well is draining in excess of 1400 acres. A simple mathmatical

attack on spacing

calculation shows such a well has a drainage radius in excess of 4400 feet. Even Texas West's expert testified to the same effect. The evidence further shows that the nearest reservoir boundary to the No. 14 well is in excess of 2200 feet from the well bore, probably in excess of 2500 feet. The Texas West location, being 1700 feet from the No. 14 well, is well within the reservoir being effectively and economically drained by the No. 14 well. None of this testimony was refuted.. In fact if there is anything on which the parties can agree it is that the No. 14 well is effectively draining all of the productive acreage within the E/2 of Section 5. This situation does not in any way impair correlative rights, as we shall later show.

If this be so, and the unrefuted testimony in the record shows that the No. 14 well is effectively and economically draining a reservoir in excess of 1400 acres, including the acreage to be dedicated to the Texas West well, the drilling of the Texas West well will constitute waste and Continental's testimony to that effect is uncontradicted in the record in this case. In fact the testimony offered by Texas West supports the same conclusion.

2

The P/Z calculations and material balance curves offered by both parties, and the reservoir limits study offered by Continental literally cry out that this well of Texas West is an unnecessary and wasteful well.

CORRELATIVE RIGHTS, COLLATERAL ATTACK ON SPACING ORDER, AND THE BELL LAKE UNIT

In response to the showing made by Continental that the No. 14 well is effectively and economically draining the E/2 of Section 5, the Commission replies, as shown by its orders Nos. R-5039 and R-5039-A, that this constitutes a

collateral attack on the Commission's spacing order, Rule 104. The Commission has further ruled that Continental cannot be heard to say that the Bell Lake Unit agreement will protect the correlative rights of Texas West and its lessors, although it has previously made that conclusion when it approved the unit. In ruling out testimony regarding the history, development, and effect of the Bell Lake Unit, we submit, the Commission committed error.

misstatement

Rather that being a collateral attack on spacing, Continental's proffered testimony is for the purpose of showing the Bell Lake Unit Agreement is a proper conservation measure, designed to prevent waste and to protect correlative rights of all interest owners within the unit boundaries, including the interests of the 7/32nds undivided mineral interest in the E/2 of Section 5 involved in this hearing.

compulsory unitization

At hearing on October 23, the Commission ruled inadmissable any testimony or evidence regarding the Bell Lake Unit and Unit Agreement as being immaterial to any issue before the Commission. This, we again submit, was error. The ruling effectivley denied to Continental the opportunity for a fair and impartial hearing as required by law. Continental's position was that no waste was occuring and that waste would occur if the Texas West were drilled, and that the present situation fully protects correlative rights. We were denied the opportunity to fully develop this testimony but despite this, the record amply established that waste will occur if the Texas West well is drilled.

misstatement

We were further denied the right to direct our testimony to the remaining issues -- the question of a collateral attack on the Commission's spacing order, and the protection

of correlative rights. We again note our objections to the Commission's ruling.

not incorporated

Fortunately the Commission still has the opportunity to correct this error. The entire record, including the record of the two previous hearings where this pertinent testimony was offered, both before the Commission examiner and before the Commission is available, and the Commission can, if it so chooses, review this record on the points we complain of.

Sec. 65-3-22 (b), N.M.S.A., 1953, provides that on appeal the trial shall be without a jury, "and the transcript of proceedings before the Commission, including the evidence taken in hearings beforethe Commission, shall be received in evidence by the court, in whole or in part upon offer by either party * * *." (Emphasis added). The entire record of this case, which is and has been a single case before the Commission, is available for appeal. It is equally available to the Commission at this time to correct the error of its ruling at the hearing on October 23.

In light of the ruling made by the Commission, we will not discuss the evidence proffered, but will confine our discussion to the legal questions involved, and evidence that is in the Commission files, other than the prior hearing transcripts, and readily abailable to it.

UNITIZATION

We cannot help but feel that the Commission, in this case, has misconceived the role of unitization as a conservation measure, and the Commission's role in connection with unitization.

As foundationary matters, it must be pointed out that the Bell Lake Unit was formed, and approved by the Commission by Order No. R-355 on August 28, 1953. The Commission's

records will show that the land under consideration in the present case lies within the South Bell Lake unit area, and that the E/2 of Section 5 lies within a participating area for Morrow production. These are all matters of which the Commission can take notice. The Commission can further take notice of the fact that the undivided 25/32nds mineral interest in the E/2 of Section 5, committed to the unit, is now sharing in Morrow production.

Just what are the purposes of unitization? The creation of units is authorized by Section 65-3-14 (e) N.M.S.A., 1953. This is the authority under which the Commission approved the Bell Lake Unit. It has the approval of law and of this Commission as a proper conservation measure, since the Commission's jurisdiction is founded on the prevention of waste, it must be assumed, and the Commission so found, that the unit agreement would prevent waste. Continental Oil Co. v. O.C.C., supra.

It has long been recognized that unit operation of a pool or portion thereof was the most efficient means of achieving the greatest ultimate recovery of oil and gas.

As stated in "A Study of Conservation of Oil and Gas in the United States", a publication prepared by the Governors' Special Study Committee of the Interstate Oil Compact Commission in 1964 during the administration of Governor Jack M. Campbell as chairman of the I.O.C.C.:

> "The pool and its energy mechanism are by nature a single unit. Like "Old Bossy", if she is to continue to stay alive, produce, and be of the greatest productive value, she should be fed, watered, cared for, and milked as a single unit. It may not be possible or practical in every instance to unitize an entire pool, but the same principle is applicable to the largest part or parts that can be unitized.

"These principles relating to an oil and gas pool have been recognized by the courts, but in more judicial language, long prior to and apart from legislation dealing directly with unitization."

In commenting on the situation we have in this case, with a small interest uncommitted to the unit, the Study went on to say:

" * * * It is obvious that, if dependence is placed upon voluntary unitization, any one owner of a tract or interest in the reservoir, regardless of his reason, can in many instances block what is for the common good of all owners, and is necessary in the public interest to secure the greatest ultimate recovery and prevent waste. Many proposed units have been blocked because of the refusal of a small minority to agree. Others have been created at the cost of a 'pound of flesh'." (Emphasis added)

disregards N.M. Statutory limitations

Sullivan, in his "Handbook of Oil and Gas Law," 1955, described the purposes of unitization as not being an end in itself, but as a means to an end, resulting in the greatest ultimate recovery of oil and gas, thereby preventing waste:

"A unitized operation is not an end in itself. The combination of interests does not directly increase recovery or prevent waste. It merely makes possible the development and exploitation of the pool as a single producing mechanism in accordance with accepted scientific and engineering principles. The result is a maximum economic recovery of the oil and gas in place and a division thereof among the respective owners in accordance with the terms of the unit agreement. The Rule of Capture is inapplicable because ownership is not conditioned upon a reduction to possession through producing operations but upon the terms of the participation formula in the unit agreement. * * * (But) in those instances where they can be instituted adv tage , i.e., to prevent waste and/or protect correlative rights, they represent th ultimate in conservation."

See also Williams and Meyers, Oil and Gas Law, Sec. 910.

This is an exploratory unit, and as such the remedy of the New Mexico statutory unitization act would not have been available, even if the law had been effective when this

case was commenced. But, contrary to the position the Commission took in its previous orders, denial of this application will not force Texas West or its lessor into the Bell Lake Unit. It would merely leave them where the Commission found them -- non-participants in what the Commission has already found is a proper conservation measure, designed to prevent waste.

finding protect c/r of each mineral interest owner

Under these circumstances the Commission has an affirmative duty to deny to them the rewards of non-participation -- their "pound of flesh" as referred to in the I.O.C.C. study.

Williams and Meyers, in their treatise on Oil and Gas Law, put it this way at Sec. 933:

> "It is obvious that one reason for the reluctance of royalty owners or operators to join in pooling or unitization agreements is that they expect to reap greater economic benefits from 'going it alone' than they can hope to reap under the voluntary agreement. That being so, it is also clear that to the extent a regulatory agency or court denies to the nonconsenting royalty owner or operator certain benefits of 'going it alone', to that extent the agency or court encourages entry into voluntary agreement."

There is nothing improper in denying to a nonconsenting owner or operator the fruits of his nonconsent to a proper conservation activity approved by the Commission. This does not "force" him into the unit.

In this case it is also obvious that Texas West, and its lessor who has forbidden joining in the unit, seek to reap the benefits of the extensive and expensive exploration and development work of the Bell Lake Unit, and deny to the unit the logical fruits of an exploratory unit -- the right to develop the unit on an optimum spacing pattern, utilizing the extensive knowledge gained at great risk and vast expense, to achieve the greatest ultimate recovery without waste. This

opportunism by a mineral owner should be discouraged, not encouraged.

CORRELATIVE RIGHTS

This brings us to the crux of the question before the Commissiion -- the protection of correlative rights.

The only basis Texas West can possibly have for this application is that it is being denied an opportunity to recover its just and equitable share of the gas underlying its 7/32nds undivided interest in the E/2 of Section 5 -- that its correlative rights are not being protected. Let us examine this position. (At the hearing the Commission Chairman brought out of one of Continental's engineering witnesses a statement that Texas West's correlative rights were not being protected. This is a legal conclusion, not proper from an engineering witness, and there was no attempt to bring out, from the engineering point of view how correlative rights were being violated. This testimony should be ignored.)

In discussing correlative rights we are starting under a double handicap. The Commission has denied to us the right to put on our testimony as to the operation and present status of the Bell Lake Unit. We again urge the Commission to reconsider this ruling, and examine the testimony previously offered and admitted in this case on this point.

Our second handicap is the long held position of the Commission to the effect that if an owner in a spacing or proration unit wants to drill, and has been unable to obtain voluntary agreement from the other interest owners, he is

automatically entitled to a compulsory pooling order. It was apparently because of this belief that the Commission made its Finding No. 7 in Order No. R-5039-A, and failed to make any finding as to waste, relying on its concept of correlative rights. As we have already shown, this is an insufficient basis for a compulsory pooling order. Sims v. Mechem, supra.

"Correlative rights," as defined in Sec. 65-3-29, H, N.M.S.A., 1953, means the right of each owner to produce without waste, his just and equitable share of the oil or gas in the pool. "Waste" as stated in the statute is an integral part of "correlative rights." Continental Oil Co. v. O.C.C., supra.

But let us suppose for the sake of argument that on the skimpy evidence in the record, the Commission could find that approval of the Compulsory pooling would in some way prevent waste. Is the Commission protecting correlative rights as it is required to do? We submit that it is not.

As shown by the testimony of V. T. Lyon, approval of this applicaiton will enable Texas West and its lessors to obtain far, far in excess of their proportionate share of the South Bell Lake reserves. The rights of the Bell Lake Unit owners will be seriously and irrevocably impaired. Here again the excluded testimony regarding the Bell Lake Unit is of the utmost importance. The Bell Lake Unit is not limited to the gas underlying only the West half of Section 5. It has the right to and can produce all of the reserves underlying the entire Bell Lake Unit. Any production by Texas West in the East half must, by law, be limited to its proportionate share underlying the E/2 of Section 5.

That is all the gas it can claim as its own. To give it the right to produce any more does violence to the statute.

Whether the Commission wants to face the fact or not, this acreage, and all of the remainder of the pool, is within the Bell Lake Unit. This acreage is within the participating area of this unit. The owners of the 25/32nds of the mineral interest in the East half of the section are already sharing, and have shared from inception, in the production from Well No. 14. Their correlative rights have not been impaired under the same acreage Texas West is taking about. By the same token, the correlative rights of the other 7/32nds interest have not and are not now being impaired. They have at all times had the right to join the Bell Lake Unit and receive their proportionate share of the gas in place underlying the E/2 of Section 5. How the Commission can say this is immaterial to the case is beyond comprehension. It is the basic issue that must be faced by the Commission. Either it is going to recognize that Texas West has other means available to protect itself, or it should put an end to unit operations. Either the Commission is going to foster and encourage the utilization of unit agreements and unit operations as a proper conservation measure, designed to prevent waste and to obtian the greatest ultimate recovery of oil and gas, with full protection of the rights of all owners, or it is going to acknowledge that unit operations designed to meet these objectives may be disrupted at will by a non-consenting owner, no matter how small his interest. The compulsory pooling statute is not the only machinery available to the Commission to protect correlative rights. It should not be utilized in the fashion sought by the applicant in this case.

Despite what Texas West's attorney claims, this case is unique in the history of the Oil Conservation Commission. Never before has an applicant, owning a small fractional, uncommitted interest within the boundaries or an approved unit, and within the participating area of that unit, sought to force pool such acreage for his own greedy advantage. Success in this case will mean the deletion of the E/2 of Section 5 from the Bell Lake Unit for Morrow production. It would cast serious doubt on the integrity of any unit where there are uncommitted interests, no matter how small. This is not the usual case of a "window" in the unit. It is a case of a small, undivided fractional interest within the committed acreage and participating area that is uncommited. If it can be said it is a sort of "Venetian blind" within the unit, the Commission can, and in the interests of conservation, should close it.

DRILLING WELL

Over Continental's objection Texas West offered evidence to show that it was already drilling the proposed well and that it was at considerable depth. Admission of this testimony was error. Consideration of this in a decision of this case denies Continental basic fair play and due process, required of all administrative agencies. The testimony was irrelevant and the fact that Texas West, before receiving a final order, elected to proceed to drill, is wholly immaterial. Texas West's drilling, even with the approval of the Commission, given before the time for application for a rehearing had expired, was at Texas West's own risk. That it has assumed this risk can have no bearing on the decision in this case,

no matter how costly an adverse decision may prove to Texas West.

RISK FACTOR

All of the testimony, both by the proponents and opponents, was to the effect that Texas West's well would encounter excellent production in the fourth Morrow zone. There is an absolute minumum of risk on that point.

The only other testimony regarding a risk was directed to the possiblility of a blowout. If this truly be a danger, the drilling of this unnecessary well raises a danger of waste. We submit, however, that the evidence shows the danger of a blowout is minimal, if the well is properly drilled. Continental as operator of the Bell Lake Unit has drilled numerous wells about which we were not permitted to testify. Again the testimony is in the previous hearings and available to the Commission and we contend it is material to this case.

Continental has experienced some problems in the Morrow formation, but has had no serious difficulities since 1957. It has gained experience in the control of pressures encountered in this area, and its experience and that of other competent operators shows that there is very little risk of a blowout.

The risk of drilling this well is minimal. No risk factor should be allowed in the event the Commission sees fit to enter a new compulsory pooling order.

SUPERVISION

The evidence offered by Continental shows the supervision charges requested by Texas West, and allowed by the

Commission in its two previous orders, are excessive. They should be reduced in line with the testimony offered at the October 23rd hearing.

CONCLUSION

Continental, as operator of the Bell Lake Unit, has offered extensive testimony to show that if the application is approved waste will occur. The record is explicit as to the kind of waste that will result with a compulsory pooling order.

At the October 23rd hearing, for the very first time, and then only in response to questions by the Commission staff, a Texas West witness stated its well might possibly encounter additional Morrow stringers, not open in the Bell Lake Unit No. 14 well, hereby leaving unproduced gas in the reservoir. The witness' answer was a "yes" to an explicit question as to the type of waste involved. This same witness, although questioned repeatedly, declined to say that any significant amount of gas would be left in the fourth Morrow sand, open to the No. 14 well, if a second well were not drilled.

The Commission, as we have stated, not only has a right, but a duty to determine if waste is occuring or will occur. If the information cannot be elicited from the witness of a party before the Commission, and the Commission feels there is a question of waste, it should put its own witness on the stand and let the parties refute the testimony if they can. The Commission has no duty to bolster a shaky record on behalf of one party, and in opposition to another.

At best, any evidence of waste to support a compulsory

pooling order is highly speculative. It is not the kind of substantial evidence the Commission should look to in entering a compulsory pooling order.

As to correlative rights, if they are going to be violated, Texas West and its lessors have only to join the Bell Lake Unit to protect them.

If the compulsory pooling application is to be approved, no risk factor should be allowed, and the charges for supervision should be sharply reduced from that previously granted.

It is respectfully urged that the application of Texas West Oil & Gas Corporation be denied.

Respectfully submitted,

CONTINENTAL OIL COMPANY

By Jason W. Kellahin

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Santa Fe, New Mexico 87501

ATTORNEYS FOR CONTINENTAL OIL COMPANY

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. 5493
Order No. R-5039-B

APPLICATION OF TEXAS WEST OIL &
GAS CORPORATION FOR COMPULSORY
POOLING, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on October 23, 1975, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 17th day of November, 1975, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Texas West Oil & Gas Corporation, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, NMPM, Bell Lake Field, Lea County, New Mexico.

(3) That this case was originally heard before a duly appointed examiner of the Commission on May 28, 1975.

(4) That on June 10, 1975, the Commission entered Order No. R-5039 which pooled the subject acreage and designated the applicant as operator of this unit for the purpose of drilling a well to the Pennsylvanian formation.

(5) That Continental Oil Company filed for and was granted a hearing de novo which was held on July 25, 1975.

(6) That on September 2, 1975, the Commission entered Order No. R-5039-A, which reaffirmed its previous order pooling this acreage but reduced the risk factor assessed therein.

(7) That Continental Oil Company made timely application for rehearing.

(8) That said application for rehearing was considered by the Commission on September 30, 1975, and it decided to rehear the case in its entirety on October 23, 1975, and so advised all parties to the case.

(9) That by Commission Order No. R-2707, dated May 25, 1964, Rule 104 of the Commission Rules and Regulations was amended to provide that all gas pools of Pennsylvanian age or older in Southeast New Mexico which were created and defined June 1, 1964, or later shall have 320-acre spacing and proration units, inasmuch as it was found that in Southeast New Mexico "....a gas well completed in the Pennsylvanian formation or a deeper formation will efficiently and economically drain and develop a 320-acre tract."

(10) That by Commission Order No. R-4918, dated November 19, 1974, the South Bell Lake-Morrow Gas Pool and the Morrow formation within one mile thereof, which includes the acreage involved in the subject application, was made subject to the provisions of Rule 104 of the Commission Rules and Regulations notwithstanding the fact said pool, then designated Bell Lake-Pennsylvanian Gas Pool, was created and defined prior to June 1, 1964.

(11) That the standard spacing unit for a well drilled to the Morrow formation in the South Bell Lake-Morrow Gas Pool is 320 acres.

(12) That the E/2 of Section 5, Township 24 South, Range 34 East, the subject matter of this application, contains 320 acres.

(13) That no question was properly raised before the Commission challenging the spacing rules for the South Bell Lake-Morrow Gas Pool.

(14) That Section 65-3-14(c) NMSA, 1953 Compilation, sets out those factors the Commission must consider when an application for compulsory pooling comes before it.

(15) That said Section 65-3-14(c) provides that the Commission shall pool lands embraced within a single spacing unit "...to avoid the drilling of unnecessary wells or to protect correlative rights, or to prevent waste...." (emphasis added) whenever the following factors exist:

a. multiple ownership, either working interest or royalty interest, within a single spacing or proration unit,

b. interest owners in the proposed unit who have not agreed to pool their interests, and

c. one owner who has the right to drill, has drilled or proposes to drill a well.

(16) That the applicant, Texas West Oil and Gas Corporation, has the operating rights to a 7/32 undivided working interest in the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, NMPM, not committed to the Bell Lake Unit Agreement, and by virtue thereof has the right to drill and proposes to drill a well at an orthodox location for the development of said 320-acre spacing unit.

(17) That the protestant in this case, Continental Oil Company, as operator of the Bell Lake Unit, has the operating rights to a 25/32 undivided working interest in said 320-acre spacing unit, as well as to the working interest in all acreage off-setting the proposed unit to the north, south, and west.

(18) That there are interest owners in the proposed proration unit who have not agreed to pool their interests.

(19) That Continental has objected to the proposed compulsory pooling on two grounds:

a. That the Morrow zone of the Pennsylvanian formation underlying the proposed spacing unit is being adequately drained by offsetting wells in its Bell Lake Unit; and

b. That the applicant can protect its correlative rights by committing its interest in the E/2 of Section 5, Township 24 South, Range 34 East, NMPM, to the Bell Lake Unit and sharing in unit production.

(20) That Continental's objections summarized in Finding No. (19)a. above constitute a collateral attack upon the spacing established for the South Bell Lake-Morrow Gas Pool by Order No. R-4918, which issue is not properly before the Commission in this case.

(21) That the Commission in Order No. R-4918 found that waste will not result from developing the South Bell Lake-Morrow Gas Pool and the Morrow formation within one mile thereof by drilling one well on each 320-acre spacing unit.

(22) That Continental's objections summarized in Finding No. (19)b. above are tantamount to an attempt to compulsorily include applicant's interest in the E/2 of the aforesaid Section 5 in the Bell Lake Unit.

(23) That the State of New Mexico has no statute permitting compulsory unitization for natural gas exploration or development.

(24) That in the absence of compulsory unitization, the unit plan of development, including unit well spacing, cannot be imposed upon non-consenting working interest owners within the unit boundaries who wish to develop their acreage according to the rules of the Commission.

(25) That if Continental's objections summarized in Finding No. (19) b. above were adopted by the Commission as a realistic alternative to compulsory pooling of the E/2 of Section 5, the applicant, Texas West Oil & Gas Corporation, would be left with the choice of either joining the Bell Lake Unit, an action which it considers economically unwise, or staying out of said unit and being drained, which would impair its correlative rights.

(26) That the evidence clearly showed that the applicant's correlative rights could be protected by the granting of this application.

(27) That the evidence presented at the rehearing showed that the drilling of a well on the E/2 of said Section 5 could encounter other gas producing zones not being produced from other wells offsetting the proposed well and, therefore, could recover gas that would otherwise be left in the ground and never recovered.

(28) That the evidence clearly showed that two wells will drain more gas from a reservoir than one well and will, therefore, produce gas that would otherwise be left in the ground.

(29) That when natural gas is left in the ground and not produced, this reduces the total quantity of natural gas ultimately recovered and constitutes underground waste.

(30) That a well drilled on the E/2 of said Section 5 would not be an unnecessary well for it would prevent waste, protect correlative rights and develop this acreage in a fashion consistent with the spacing rules for the South Bell Lake-Morrow Gas Pool.

(31) That the drilling of the proposed well will enable the mineral interest owners in the E/2 of said Section 5 to produce their just and fair share of the hydrocarbons in the Morrow formation underlying their tract.

(32) That to protect correlative rights, prevent waste, and to afford to the owner of each interest in said unit the opportunity to recover or receive without unnecessary expense his just and fair share of the gas in said pool, the subject application should be approved by pooling all mineral interests, whatever they may be, within said unit.

(33) That the applicant should be designated the operator of the subject well and unit.

(34) That any non-consenting working interest owner should be afforded the opportunity to pay his share of estimated well costs to the operator in lieu of paying his share of reasonable well costs out of production.

(35) That any non-consenting working interest owner that does not pay his share of estimated well costs should have withheld from production his share of the reasonable well costs plus an additional 150 percent thereof as a reasonable charge for the risk involved in the drilling of the well.

(36) That any non-consenting interest owner should be afforded the opportunity to object to the actual well costs but that actual well costs should be adopted as the reasonable well costs in the absence of such objection.

(37) That following determination of reasonable well costs, any non-consenting working interest owner that has paid his share of estimated costs should pay to the operator any amount that reasonable well costs exceed estimated well costs and should receive from the operator any amount that paid estimated well costs exceed reasonable well costs.

(38) That $1600.00 per month should be fixed as a reasonable charge for supervision (combined fixed rates) while drilling, and that $250.00 per month should be fixed as a reasonable charge for supervision while producing; that the operator should be authorized to withhold from production the proportionate share of such supervision charge attributable to each non-consenting working interest, and in addition thereto, the operator should be authorized to withhold from production the proportionate share of actual expenditures required for operating the subject well, not in excess of what are reasonable, attributable to each non-consenting working interest.

(39) That all proceeds from production from the subject well which are not disbursed for any reason should be placed in escrow to be paid to the true owner thereof upon demand and proof of ownership.

(40) That upon the failure of the operator of said pooled unit to commence drilling of the well to which said unit is dedicated on or before January 15, 1976, the order pooling said unit should become null and void and of no effect whatsoever.

IT IS THEREFORE ORDERED:

(1) That all mineral interests, whatever they may be, in the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, NMPM, Bell Lake Field, Lea County, New Mexico, are hereby pooled to form a standard 320-acre gas spacing and proration unit to be dedicated to a well to be drilled at an orthodox location for said unit.

PROVIDED HOWEVER, that the operator of said unit shall commence the drilling of said well on or before the 15th day of January, 1976, and shall thereafter continue the drilling of said well with due diligence to a depth sufficient to test the Pennsylvanian formation;

PROVIDED FURTHER, that in the event said operator does not commence the drilling of said well on or before the 15th day of January, 1976, Order (1) of this order shall be null and void and of no effect whatsoever;

PROVIDED FURTHER, that should said well not be drilled to completion, or abandonment, within 120 days after commencement thereof, said operator shall appear before the Commission and show cause why Order (1) of this order should not be rescinded.

(2) That Texas West Oil & Gas Corporation is hereby designated the operator of the subject well and unit.

(3) That within 15 days after the effective date of this order the operator shall furnish the Commission and each known working interest owner in the subject unit an itemized schedule of estimated well costs.

(4) That within 15 days from the date the schedule of estimated well costs is furnished to him, any non-consenting working interest owner shall have the right to pay his share of estimated well costs to the operator in lieu of paying his share of reasonable well costs out of production, and that any such owner who pays his share of estimated well costs as provided above shall remain liable for operating costs but shall not be liable for risk charges.

(5) That the operator shall furnish the Commission and each known working interest owner an itemized schedule of actual well costs within 90 days following completion of the well; that if no objection to the actual well costs is received

by the Commission and the Commission has not objected within 45 days following receipt of said schedule, the actual well costs shall be the reasonable well costs; provided however, that if there is an objection to actual well costs within said 45-day period the Commission will determine reasonable well costs after public notice and hearing.

(6) That within 60 days following determination of reasonable well costs, any non-consenting working interest owner that has paid his share of estimated costs in advance as provided above shall pay to the operator his pro rata share of the amount that reasonable well costs exceed estimated well costs and shall receive from the operator his pro rata share of the amount that estimated well costs exceed reasonable well costs.

(7) That the operator is hereby authorized to withhold the following costs and charges from production:

(a) The pro rata share of reasonable well costs attributable to each non-consenting working interest owner who has not paid his share of estimated well costs within 15 days from the date the schedule of estimated well costs is furnished to him.

(b) As a charge for the risk involved in the drilling of the well, 150 percent of the pro rata share of reasonable well costs attributable to each non-consenting working interest owner who has not paid his share of estimated well costs within 15 days from the date the schedule of estimated well costs is furnished to him.

(8) That the operator shall distribute said costs and charges withheld from production to the parties who advanced the well costs.

(9) That $1600.00 per month is hereby fixed as a reasonable charge for supervision (combined fixed rates) while drilling, and that $250.00 per month is hereby fixed as a reasonable charge for supervision while producing; that the operator is hereby authorized to withhold from production the proportionate share of such supervision charge attributable to each non-consenting working interest, and in addition thereto, the operator is hereby authorized to withhold from production the proportionate share of actual expenditures required for operating such well, not in excess of what are reasonable, attributable to each non-consenting working interest.

(10) That any unsevered mineral interest shall be considered a seven-eighths (7/8) working interest and a one-eighth (1/8)

royalty interest for the purpose of allocating costs and charges under the terms of this order.

(11) That any well costs or charges which are to be paid out of production shall be withheld only from the working interests share of production, and no costs or charges shall be withheld from production attributable to royalty interests.

(12) That all proceeds from production from the subject well which are not disbursed for any reason shall be placed in escrow in Lea County, New Mexico, to be paid to the true owner thereof upon demand and proof of ownership; that the operator shall notify the Commission of the name and address of said escrow agent within 90 days from the date of this order.

(13) 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

PHIL R. LUCERO, Chairman

EMERY C. ARNOLD, Member

JOE D. RAMEY, Member & Secretary

S E A L

dr/

Case 5493

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. 5493
Order No. R-5039-A

APPLICATION OF TEXAS WEST OIL & GAS CORPORATION FOR COMPULSORY POOLING, LEA COUNTY, NEW MEXICO.

APPLICATION FOR REHEARING

Comes now Continental Oil Company, a party affected by the above captioned order, and pursuant to the provisions of Section 65-3-22, New Mexico Statute Annotated, 1953 Compilation, files this, its application for a rehearing in the above case, stating that Commission Order No. R-5039-A is erroneous in the following respects:

1. Applicant is the designated operator of the Bell Lake Unit, approved by the Commission by its Order No. R-355.

2. The lands affected by Commission Order No. R-5039-A lie within the Bell Lake Unit and within the participating area of the unit, and applicant has the sole right to drill and develop said lands pursuant to the provisions of the Unit Agreement.

3. The Commission, by its order, has pooled the E/2 of Section 5, Township 24 South, Range 34 East, N.M.P.M., Lea County, New Mexico.

4. Order No. R-5039-A, as to its Findings Nos. 8, 12, 14, 16, 17, 20 and 23 are not supported by substantial

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evidence.

Finding No. 7 is an incomplete and inaccurate statement of the law and does not support the order.

5. Order No. R-5039-A is not supported by substantial evidence, is arbitrary and capricious and is therefore invalid, unlawful, and void.

6. Order No. R-5039-A contains no finding as to the existence of waste or that the pooling of the East half of Section Five will prevent waste, and there is no evidence in the record to support such a finding.

7. Order No. R-5039-A is not supported by findings required by law.

8. The Commission, by its Order No. R-5039-A, has ignored the provisions of the Bell Lake Unit Agreement, approved by the Commission by its order No. R-355, and approved and participated in by the Commissioner of Public Lands of the State of New Mexico and by the United States Department of the Interior, through its United States Geological Survey.

9. Order No. R-5039-A permits the drilling of a well within the participating area of the Bell Lake Unit by a party other than the Unit Operator, contrary to the provisions of the Bell Lake Unit Agreement, approved by the Commission, and does so without the approval of the Commissioner of Public Lands and the Director of the United States Geological Survey, contrary to the provisions of said Unit Agreement.

10. Order No. R-5039-A will not prevent waste, but on the contrary will cause waste by permitting the drilling of other unnecessary wells in order to protect the correlative rights of the owners in the pool.

11. Order No. R-5039-A will not protect correlative rights, but will impair correlative rights, which are now fully protected by the Bell Lake Unit.

12. The drilling of unnecessary wells, as required by Order No. R-5039-A will cause economic waste, and will not prevent either physical or economic waste.

13. The effect of Order No. R-5039-A is to permit Texas West Oil and Gas Corporation to recover more than its just and equitable share of gas in the reservoir, contrary to the provisions of law.

14. Order R-5039-A, in its findings, ocnstitutes a collateral attack on the Bell Lake Unit Agreement, to which the Commission, the Commissioner of Public Lands and the U.S.G.S. are signatory parties, and upon Order No. R-355 approving the unit agreement.

15. The evidence shows that the Bell Lake Unit Owners stepped out nearly one mile in drilling their No. 14 well. Texas West proposes to drill less than one-third of a mile from this well, which the record shows, is one of the best in New Mexico. The evidence shows that Texas West's proposed location is well within the drainage radius of the No. 14 well, in a proven area, and the assignment of a 150% risk factor is grossly excessive, not supported by substantial evidence, and unlawful.

16. The imposition of charges for supervision of $1,600 for a drilling well, and $250 for a producing well, is excessive, not supported by substantial evidence, and unlawful.

17. The effect of Commission's Finding No. 19, and Paragraph 4 of the Order is to require payment of the Prorata share of the estimated well costs aby an owner who is consenting prior to commencement of drilling, and

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constitutes imposition of a penalty not authorized by law, and contrary to the general practice in the oil and gas industry.

WHEREFORE applicant prays that this case be set for rehearing, and that after notice and rehearing as required by law, the Commission rescind its Order No. R-5039-A, and enter its order denying the application of Texas West Oil & Gas Corporation for compulsory pooling. In the alternative, applicant prays that upon completion of the well by Texas West Oil & Gas Corporation, if approved by the Commission, applicant be designated as operator of the well, as required by the provisions of teh Bell Lake Unit Agreement.

Respectfully submitted,

Jason W. Kellahin

JASON W. KELLAHIN
P.O. Box 1769
Santa Fe, New Mexico 87501

ATTORNEY FOR OCNTINENTAL OIL COMPANY

Case 5493

KELLAHIN AND FOX
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500 DON GASPAR AVENUE
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JASON W. KELLAHIN
ROBERT E. FOX
W. THOMAS KELLAHIN

TELEPHONE 982-4315
AREA CODE 505

Sept. 22, 1975

Mr, Joe D. Ramey, Secretary-Director
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Dear Mr. Ramey:

Enclosed is the application of Continental Oil Company for rehearing in Case No. 5493, Order No. R-5039-A, entered on the application of Texas West Oil & Gas Corporation.

Your consideration of this application will be appreciated.

Sincerely,

Jason

Jason W. Kellahin

JWK:ss
cc: V. T. Lyon
Clarence E. Hinkle

CASE 5493: TEXAS WEST OIL & GAS CORP. FOR COMPULSORY POOLING, LEA COUNTY, NEW MEXICO

Rebuttal
Gamma
10/23/

CASE NO.

5493

APPLICATION,

TRANSCRIPTS,

SMALL EXHIBITS,

ETC.

records will show that the land under consideration in the present case lies within the South Bell Lake unit area, and that the E/2 of Section 5 lies within a participating area for Morrow production. These are all matters of which the Commission can take notice. The Commission can further take notice of the fact that the undivided 25/32nds mineral interest in the E/2 of Section 5, committed to the unit, is now sharing in Morrow production.

Just what are the purposes of unitization? The creation of units is authorized by Section 65-3-14 (e) N.M.S.A., 1953. This is the authority under which the Commission approved the Bell Lake Unit. It has the approval of law and of this Commission as a proper conservation measure, since the Commission's jurisdiction is founded on the prevention of waste, it must be assumed, and the Commission so found, that the unit agreement would prevent waste. Continental Oil Co. v. O.C.C., supra.

It has long been recognized that unit operation of a pool or portion thereof was the most efficient means of achieving the greatest ultimate recovery of oil and gas.

As stated in "A Study of Conservation of Oil and Gas in the United States", a publication prepared by the Governors' Special Study Committee of the Interstate Oil Compact Commission in 1964 during the administration of Governor Jack M. Campbell as chairman of the I.O.C.C.:

> "The pool and its energy mechanism are by nature a single unit. Like "Old Bossy", if she is to continue to stay alive, produce, and be of the greatest productive value, she should be fed, watered, cared for, and milked as a single unit. It may not be possible or practical in every instance to unitize an entire pool, but the same principle is applicable to the largest part or parts that can be unitized.

"These principles relating to an oil and gas pool have been recognized by the courts, but in more judicial language, long prior to and apart from legislation dealing directly with unitization."

In commenting on the situation we have in this case, with a small interest uncommitted to the unit, the Study went on to say:

" * * * It is obvious that, if dependence is placed upon voluntary unitization, any one owner of a tract or interest in the reservoir, regardless of his reason, can in many instances block what is for the common good of all owners, and is necessary in the public interest to secure the greatest ultimate recovery and prevent waste. Many proposed units have been blocked because of the refusal of a small minority to agree. Others have been created at the cost of a 'pound of flesh'." (Emphasis added)

Sullivan, in his "Handbook of Oil and Gas Law," 1955, described the purposes of unitization as not being an end in itself, but as a means to an end, resulting in the greatest ultimate recovery of oil and gas, thereby preventing waste:

"A unitized operation is not an end in itself. The combination of interests does not directly increase recovery or prevent waste. It merely makes possible the development and exploitation of the pool as a single producing mechanism in accordance with accepted scientific and engineering principles. The result is a maximum economic recovery of the oil and gas in place and a division thereof among the respective owners in accordance with the terms of the unit agreement. The Rule of Capture is inapplicable because ownership is not conditioned upon a reduction to possession through producing operations but upon the terms of the participation formula in the unit agreement. * * * (But) in those instances where they can be instituted advantageously, i.e., to prevent waste and/or protect correlative rights, they represent the ultimate in conservation."

See also Williams and Meyers, Oil and Gas Law, Sec. 910.

This is an exploratory unit, and as such the remedy of the New Mexico statutory unitization act would not have been available, even if the law had been effective when this

case was commenced. But, contrary to the position the Commission took in its previous orders, denial of this application will not force Texas West or its lessor into the Bell Lake Unit. It would merely leave them where the Commission found them -- non-participants in what the Commission has already found is a proper conservation measure, designed to prevent waste.

Under these circumstances the Commission has an affirmative duty to deny to them the rewards of non-participation -- their "pound of flesh" as referred to in the I.O.C.C. study.

Williams and Meyers, in their treatise on Oil and Gas Law, put it this way at Sec. 933:

> "It is obvious that one reason for the reluctance of royalty owners or operators to join in pooling or unitization agreements is that they expect to reap greater economic benefits from 'going it alone' than they can hope to reap under the voluntary agreement. That being so, it is also clear that to the extent a regulatory agency or court denies to the nonconsenting royalty owner or operator certain benefits of 'going it alone', to that extent the agency or court encourages entry into voluntary agreement."

There is nothing improper in denying to a nonconsenting owner or operator the fruits of his nonconsent to a proper conservation activity approved by the Commission. This does not "force" him into the unit.

In this case it is also obvious that Texas West, and its lessor who has forbidden joining in the unit, seek to reap the benefits of the extensive and expensive exploration and development work of the Bell Lake Unit, and deny to the unit the logical fruits of an exploratory unit -- the right to develop the unit on an optimum spacing pattern, utilizing the extensive knowledge gained at great risk and vast expense, to achieve the greatest ultimate recovery without waste. This

opportunism by a mineral owner should be discouraged, not encouraged.

CORRELATIVE RIGHTS

This brings us to the crux of the question before the Commissiion -- the protection of correlative rights.

The only basis Texas West can possibly have for this application is that it is being denied an opportunity to recover its just and equitable share of the gas underlying its 7/32nds undivided interest in the E/2 of Section 5 -- that its correlative rights are not being protected. Let us examine this position. (At the hearing the Commission Chairman brought out of one of Continental's engineering witnesses a statement that Texas West's correlative rights were not being protected. This is a legal conclusion, not proper from an engineering witness, and there was no attempt to bring out, from the engineering point of view how correlative rights were being violated. This testimony should be ignored.)

In discussing correlative rights we are starting under a double handicap. The Commission has denied to us the right to put on our testimony as to the operation and present status of the Bell Lake Unit. We again urge the Commission to reconsider this ruling, and examine the testimony previously offered and admitted in this case on this point.

Our second handicap is the long held position of the Commission to the effect that if an owner in a spacing or proration unit wants to drill, and has been unable to obtain voluntary agreement from the other interest owners, he is

automatically entitled to a compulsory pooling order. It was apparently because of this belief that the Commission made its Finding No. 7 in Order No. R-5039-A, and failed to make any finding as to waste, relying on its concept of correlative rights. As we have already shown, this is an insufficient basis for a compulsory pooling order. Sims v. Mechem, supra.

"Correlative rights," as defined in Sec. 65-3-29, H, N.M.S.A., 1953, means the right of each owner to produce without waste, his just and equitaibe share of the oil or gas in the pool. "Waste" as stated in the statute is an integral part of "correlative rights." Continental Oil Co. v. O.C.C., supra.

But let us suppose for the sake of argument that on the skimpy evidence in the record, the Commission could find that approval of the Compulsory pooling would in some way prevent waste. Is the Commission protecting correlative rights as it is required to do? We submit that it is not.

As shown by the testimony of V. T. Lyon, approval of this applicaiton will enable Texas West and its lessors to obtain far, far in excess of their proportionate share of the South Bell Lake reserves. The rights of the Bell Lake Unit owners will be seriously and irrevocably impaired. Here again the excluded testimony regarding the Bell Lake Unit is of the utmost importance. The Bell Lake Unit is not limited to the gas underlying only the West half of Section 5. It has the right to and can produce all of the reserves underlying the entire Bell Lake Unit. Any production by Texas West in the East half must, by law, be limited to its proportionate share underlying the E/2 of Section 5.

That is all the gas it can claim as its own. To give it the right to produce any more does violence to the statute.

Whether the Commission wants to face the fact or not, this acreage, and all of the remainder of the pool, is within the Bell Lake Unit. This acreage is within the participating area of this unit. The owners of the 25/32nds of the mineral interest in the East half of the section are already sharing, and have shared from inception, in the production from Well No. 14. Their correlative rights have not been impaired under the same acreage Texas West is taking about. By the same token, the correlative rights of the other 7/32nds interest have not and are not now being impaired. They have at all times had the right to join the Bell Lake Unit and receive their proportionate share of the gas in place underlying the E/2 of Section 5. How the Commission can say this is immaterial to the case is beyond comprehension. It is the basic issue that must be faced by the Commission. Either it is going to recognize that Texas West has other means available to protect itself, or it should put an end to unit operations. Either the Commission is going to foster and encourage the utilization of unit agreements and unit operations as a proper conservation measure, designed to prevent waste and to obtian the greatest ultimate recovery of oil and gas, with full protection of the rights of all owners, or it is going to acknowledge that unit operations designed to meet these objectives may be disrupted at will by a non-consenting owner, no matter how small his interest. The compulsory pooling statute is not the only machinery available to the Commission to protect correlative rights. It should not be utilized in the fashion sought by the applicant in this case.

(7) That the operator is hereby authorized to withhold the following costs and charges from production:

(a) The pro rata share of reasonable well costs attributable to each non-consenting working interest owner who has not paid his share of estimated well costs within 30 days from the date the schedule of estimated well costs is furnished to him.

(b) As a charge for the risk involved in the drilling of the well, ~~200~~ 150 percent of the pro rata share of reasonable well costs attributable to each non-consenting working interest owner who has not paid his share of estimated well costs within 30 days from the date the schedule of estimated well costs is furnished to him.

(8) That the operator shall distribute said costs and charges withheld from production to the parties who advanced the well costs.

(9) That $1600.00 per month is hereby fixed as a reasonable charge for supervision (combined fixed rates) while drilling, and that $250.00 per month is hereby fixed as a reasonable charge for supervision while producing; that the operator is hereby authorized to withhold from production the proportionate share of such supervision charge attributable to each non-consenting working interest, and in addition thereto, the operator is hereby authorized to withhold from production the proportionate share of actual expenditures required for operating such well, not in excess of what are reasonable, attributable to each non-consenting working interest.

(10) That any unsevered mineral interest shall be considered a seven-eighths (7/8) working interest and a one-eighth (1/8) royalty interest for the purpose of allocating costs and charges under the terms of this order.

(11) That any well costs or charges which are to be paid out of production shall be withheld only from the working interests share of production, and no costs or charges shall be withheld from production attributable to royalty interests.

(12) That all proceeds from production from the subject well which are not disbursed for any reason shall be placed in escrow in Lea County, New Mexico, to be paid to the true owner thereof upon demand and proof of ownership; that the operator shall notify the Commission of the name and address of said escrow agent within 90 days from the date of this order.

(13) 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

[redacted]

PHIL R. LUCERO, Member

JOE D. RAMEY, Member & Secretary

S E A L

jx/

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. 5493
Order No. R-5039-A

APPLICATION OF TEXAS WEST OIL &
GAS CORPORATION FOR COMPULSORY
POOLING, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on July 25, 1975, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 2nd day of September, 1975, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Texas West Oil & Gas Corporation, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, NMPM, Bell Lake Field, Lea County, New Mexico.

(3) That by Commission Order No. R-2707, dated May 25, 1964, Rule 104 of the Commission Rules and Regulations was amended to provide that all gas pools of Pennsylvanian age or older in Southeast New Mexico which were created and defined June 1, 1964, or later shall have 320-acre spacing and proration units, inasmuch as it was found that in Southeast New Mexico ",...a gas well completed in the Pennsylvanian formation or a deeper formation will efficiently and economically drain and develop a 320-acre tract."

(4) That by Commission Order No. R-4918, dated November 19, 1974, the South Bell Lake-Morrow Gas Pool and the Morrow formation within one mile thereof, which includes the acreage involved in the subject application, was made "...subject to the provisions of Rule 104 of the Commission Rules and Regulations

notwithstanding the fact said pool was created and defined prior to June 1, 1964."

(5) That no question was properly raised before the Commission in this proceeding challenging the spacing rules for the South Bell Lake-Morrow Gas Pool.

(6) That Section 65-3-14(c) NMSA, 1953 Compilation, sets out those factors the Commission must consider when an application for compulsory pooling comes before it.

(7) That to obtain a compulsory pooling order from the Commission, an applicant must show, as required by statute, that the following factors exist:

a. multiple ownership, either working interest or royalty interest, within a single spacing or proration unit,

b. interest owners in the proposed unit who have not agreed to pool their interests, and

c. one owner who has the right to drill, has drilled or proposes to drill a well.

(8) That the applicant, Texas West Oil and Gas Corporation, has the operating rights to a 7/32 undivided working interest in the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, NMPM, not committed to the Bell Lake Unit Agreement, and by virtue thereof has the right to drill and proposes to drill a well at an orthodox location for the development of said 320-acre spacing unit.

(9) That the protestant in this case, Continental Oil Company, as operator of the Bell Lake Unit, has the operating rights to a 25/32 undivided working interest in said 320-acre spacing unit, as well as to the working interest in all acreage off-setting the proposed unit to the north, south, and west.

(10) That there are interest owners in the proposed proration unit who have not agreed to pool their interests.

(11) That Continental has objected to the proposed compulsory pooling on two grounds:

a. That the Morrow zone of the Pennsylvanian formation underlying the proposed spacing unit is being adequately drained by offsetting wells in its Bell Lake Unit; and

b. That the applicant can protect its correlative rights by committing its interest in the E/2 of Section 5, Township 24 South, Range 34 East, NMPM, to the Bell Lake Unit and sharing in unit production.

(12) That Continental's objections summarized in Finding No. (11)a above constitute a collateral attack upon the spacing established for the South Bell Lake-Morrow Gas Pool by Order No. R-4918, which issue is not properly before the Commission in this case.

(13) That the Commission in Order No. R-4918 found that waste will not result from developing the South Bell Lake-Morrow Gas Pool and the Morrow formation within one mile thereof by drilling one well on each 320-acre spacing unit.

(14) That Continental's objections summarized in Finding No. (11)b above are tantamount to an attempt to compulsorily include applicant's interest in the E/2 of the aforesaid Section 5 in the Bell Lake Unit.

(15) That the State of New Mexico has no statute permitting compulsory unitization for natural gas exploration or development.

(16) That the drilling of the proposed well will enable the mineral interest owners in the E/2 of said Section 5 to produce their just and fair share of the hydrocarbons underlying their tract from the Morrow formation.

(17) That to protect correlative rights, and to afford to the owner of each interest in said unit the opportunity to recover or receive without unnecessary expense his just and fair share of the gas in said pool, the subject application should be approved by pooling all mineral interests, whatever they may be, within said unit.

(18) That the applicant should be designated the operator of the subject well and unit.

(19) That any non-consenting working interest owner should be afforded the opportunity to pay his share of estimated well costs to the operator in lieu of paying his share of reasonable well costs out of production.

(20) That any non-consenting working interest owner that does not pay his share of estimated well costs should have withheld from production his share of the reasonable well costs plus an additional 150 percent thereof as a reasonable charge for the risk involved in the drilling of the well.

(21) That any non-consenting interest owner should be afforded the opportunity to object to the actual well costs but that actual well costs should be adopted as the reasonable well costs in the absence of such objection.

(22) That following determination of reasonable well costs, any non-consenting working interest owner that has paid his share of estimated costs should pay to the operator any amount that reasonable well costs exceed estimated well costs and should receive from the operator any amount that paid estimated well costs exceed reasonable well costs.

(23) That $1600.00 per month should be fixed as a reasonable charge for supervision (combined fixed rates) while drilling, and that $250.00 per month should be fixed as a reasonable charge for supervision while producing; that the operator should be authorized to withhold from production the proportionate share of such supervision charge attributable to each non-consenting working interest, and in addition thereto, the operator should be authorized to withhold from production the proportionate share of actual expenditures required for operating the subject well, not in excess of what are reasonable, attributable to each non-consenting working interest.

(24) That all proceeds from production from the subject well which are not disbursed for any reason should be placed in escrow to be paid to the true owner thereof upon demand and proof of ownership.

(25) That upon the failure of the operator of said pooled unit to commence drilling of the well to which said unit is dedicated on or before November 15, 1975, the order pooling said unit should become null and void and of no effect whatsoever.

IT IS THEREFORE ORDERED:

(1) That all mineral interests, whatever they may be, in the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, NMPM, Bell Lake Field, Lea County, New Mexico, are hereby pooled to form a standard 320-acre gas spacing and proration unit to be dedicated to a well to be drilled at an orthodox location for said unit.

PROVIDED HOWEVER, that the operator of said unit shall commence the drilling of said well on or before the 15th day of November, 1975, and shall thereafter continue the drilling of said well with due diligence to a depth sufficient to test the Pennsylvanian formation;

PROVIDED FURTHER, that in the event said operator does not commence the drilling of said well on or before the 15th day of November, 1975, Order (1) of this order shall be null and void and of no effect whatsoever;

PROVIDED FURTHER, that should said well not be drilled to completion, or abandonment, within 120 days after commencement thereof, said operator shall appear before the Commission and show cause why Order (1) of this order should not be rescinded.

(2) That Texas West Oil & Gas Corporation is hereby designated the operator of the subject well and unit.

(3) That after the effective date of this order and within 30 days prior to commencing said well, the operator shall furnish the Commission and each known working interest owner in the subject unit an itemized schedule of estimated well costs.

(4) That within 30 days from the date the schedule of estimated well costs is furnished to him, any non-consenting working interest owner shall have the right to pay his share of estimated well costs to the operator in lieu of paying his share of reasonable well costs out of production, and that any such owner who pays his share of estimated well costs as provided above shall remain liable for operating costs but shall not be liable for risk charges.

(5) That the operator shall furnish the Commission and each known working interest owner an itemized schedule of actual well costs within 90 days following completion of the well; that if no objection to the actual well costs is received by the Commission and the Commission has not objected within 45 days following receipt of said schedule, the actual well costs shall be the reasonable well costs; provided however, that if there is an objection to actual well costs within said 45-day period the Commission will determine reasonable well costs after public notice and hearing.

(6) That within 60 days following determination of reasonable well costs, any non-consenting working interest owner that has paid his share of estimated costs in advance as provided above shall pay to the operator his pro rata share of the amount that reasonable well costs exceed estimated well costs and shall receive from the operator his pro rata share of the amount that estimated well costs exceed reasonable well costs.

(7) That the operator is hereby authorized to withhold the following costs and charges from production:

(a) The pro rata share of reasonable well costs attributable to each non-consenting working interest owner who has not paid his share of estimated well costs within 30 days from the date the schedule of estimated well costs is furnished to him.

(b) As a charge for the risk involved in the drilling of the well, 150 percent of the pro rata share of reasonable well costs attributable to each non-consenting working interest owner who has not paid his share of estimated well costs within 30 days from the date the schedule of estimated well costs is furnished to him.

(8) That the operator shall distribute said costs and charges withheld from production to the parties who advanced the well costs.

(9) That $1600.00 per month is hereby fixed as a reasonable charge for supervision (combined fixed rates) while drilling, and that $250.00 per month is hereby fixed as a reasonable charge for supervision while producing; that the operator is hereby authorized to withhold from production the proportionate share of such supervision charge attributable to each non-consenting working interest, and in addition thereto, the operator is hereby authorized to withhold from production the proportionate share of actual expenditures required for operating such well, not in excess of what are reasonable, attributable to each non-consenting working interest.

(10) That any unsevered mineral interest shall be considered a seven-eighths (7/8) working interest and a one-eighth (1/8) royalty interest for the purpose of allocating costs and charges under the terms of this order.

(11) That any well costs or charges which are to be paid out of production shall be withheld only from the working interests share of production, and no costs or charges shall be withheld from production attributable to royalty interests.

(12) That all proceeds from production from the subject well which are not disbursed for any reason shall be placed in escrow in Lea County, New Mexico, to be paid to the true owner thereof upon demand and proof of ownership; that the operator shall notify the Commission of the name and address of said escrow agent within 90 days from the date of this order.

(13) 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

PHIL R. LUCERO, Member

JOE D. RAMEY, Member & Secretary

S E A L

dr/

TEXAS WEST OIL & GAS CORPORATION
600 C & K PETROLEUM BUILDING
MIDLAND, TEXAS 79701

L. N. DUNNAVANT, *President*

DISTRICT OFFICE:
Lafayette, Louisiana 70501
F. L. Dischler, Manager
Oil Center Station, Box 52332
(318) 232-8387

(915) 684-5836

13 May 1976

New Mexico Oil Conservation Commission
P.O. Box 2088
Santa Fe, New Mexico 87501

Re: Case No. 5493
Order No. R-5039-B
Texas West Oil & Gas Corporation's
MADERA #1, Section 5, T-24-S, R-34-E,
Lea County, New Mexico

Attention: Mr. Joe D. Ramey,
Member and Secretary

Gentlemen:

In compliance with the Commission's order rendered in Case No. 5493, Order No. R-5039-B, specific reference made herein to Page 6, Paragraph (5), transmitted herewith is the Tangible and Intangible Drilling Costs Analysis reflecting the actual well costs relevant to subject well.

Yours very truly,

TEXAS WEST OIL & GAS CORPORATION

Alice Sandell

~~Alice Sandell~~
Office ~~Manager~~

AS:kw

Attachments

xc: Exxon Corporation (w/attachments)
Phillips Petroleum Company (w/attachments)
Continental Oil Company (w/attachments)

TWO&G Form 111 (Rev. 5-76)

TEXAS WEST OIL & GAS CORPORATION
609 C & K PETROLEUM BUILDING
MIDLAND, TEXAS 79701

Tangible & Intangible Drilling Costs Analysis

Lease No.: 24060

Date: May 11, 1976

Well Name: Madera #1

Location: Section 5, T-24-S, R-34-E

County/Parish: Lea County, New Mexico

Period Covered: From Spud Date thru Billing Date 5-10-76

Date	Invoice No.	Vendor	Drilling & Completion Costs	
			Tangibles	Intangibles
10-24-75	02731	A-1 Auto Supply		52.34
11-10-75	A-658	Automatic Pipe Racker, Inc.		652.00
11-04-75	66798	AMF Tuboscope, Inc.		3,088.02
9-27-75	7354	Allstate Construction, Inc.		13,423.95
10-04-75	7429	Allstate Construction, Inc.		3,245.11
10-21-75	7372	Allstate Construction, Inc.		992.42
10-31-75	A-900	Automatic Pipe Racker, Inc.		1,224.24
11-04-75	008587	Bonine Lumber Co.		100.80
		Discount		(2.01)
11-12-75	56946	Cameron Iron Works, Inc.		1,042.85
		Discount		(20.85)
11-14-75	57137	Cameron Iron Works, Inc.		93.60
11-13-75	19527	Champion Chemicals, Inc.		2,022.16
11-13-75	19526	Champion Chemicals, Inc.		1,587.44
11-18-75	19965	Champion Chemicals, Inc.		1,181.32
10-07-75	45036	City Pipe & Supply Corp.		1,027.19
11-01-75	3-69	Durrett & Associates		2,767.21
10-31-75	1831	Executive Mobile Home Lease Co.		284.44
10-31-75	47086	Drilprodco		347.17
11-03-75	75-700	H&R Testers, Inc.		620.36
11-03-75	18391	Houston Truck Lines, Inc.		74.20
9-23-75	1027	Haller - Phillips, Inc.		428.22
		Discount		(8.56)
9-24-75	5656	Haller-Phillips, Inc.		147.78
10-23-75	LE536902	Hertz Rent-A-Car		50.30
10-17-75	1952	K&L Equipment Co.		2,289.92
10-17-75	9762	Mustang Mud Inc.		1,282.78
10-27-75	9817	Mustang Mud Inc.		570.75
10-27-75	9818	Mustang Mud Inc.		1,397.76
10-27-75	9819	Mustang Mud Inc.		1,395.57
10-27-75	9820	Mustang Mud Inc.		845.52
10-27-75	9821	Mustang Mud Inc.		1,831.12
10-27-75	9822	Mustang Mud Inc.		845.52
10-27-75	9823	Mustang Mud Inc.		845.52
10-27-75	9824	Mustang Mud Inc.		766.68
10-27-75	9825	Mustang Mud Inc.		1,513.98
10-27-75	9826	Mustang Mud Inc.		2,158.46
10-27-75	9827	Mustang Mud Inc.		1,887.42
10-27-75	9828	Mustang Mud Inc.		1,534.12
10-31-75	9875	Mustang Mud Inc.		1,151.07
10-31-75	9876	Mustang Mud Inc.		2,277.65
10-31-75	9877	Mustang Mud Inc.		2,224.61
10-31-75	9878	Mustang Mud Inc.		436.80
10-31-75	9879	Mustang Mud Inc.		2,340.58
10-31-75	9880	Mustang Mud Inc.		1,789.84
11-21-75	6252	New Mexico Electric Service Co.		62.52
9-26-75	Deposit	New Mexico Electric Service Co.		100.00
10-21-75	5467	Sherman Power Tongs, Inc.		572.00
10-21-75	5466	Sherman Power Tongs, Inc.		1,552.20
11-06-75	5521	Sherman Power Tongs, Inc.		1,366.56
11-06-75	5522	Sherman Power Tongs, Inc.		936.00
10-18-75	3204A	Star Welding Service		83.20
10-19-75	3205A	Star Welding Service		199.68

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Texas West Oil & Gas Corporation

Tangible & Intangible Drilling Costs Analysis

Well Name: Madera #1

Date	Invoice No.	Vendor	Drilling & Completion Costs	
			Tangibles	Intangibles
11-02-75	2598A	Star Welding Service		241.28
11-02-75	2631A	Star Welding Service		149.76
10-18-75	600703	Halliburton		5,965.85
11-01-75	902804	Halliburton		33,200.30
10-30-75	14270	Texas Reamer Co.		1,579.24
10-30-75	14634	Texas Reamer Co.		5,232.24
10-07-75	10-7	A. W. Thompson, Inc.		84,967.09
10-24-75	75-3344R	Thrasher Trucking Company		189.28
11-10-75	75-3522R	Thrasher Trucking Company		27.50
11-10-75	75-3523R	Thrasher Trucking Company		109.91
11-10-75	75-3521R	Thrasher Trucking Company		299.52
10-30-75	OD-10-288F	Vinson Supply Company		1,569.75
11-06-75	OD-11-57-F	Vinson Supply Company		3,835.55
11-18-75	OD-11-154-F	Vinson Supply Company		(1,230.28)
11-18-75	OD-11-151-F	Vinson Supply Company		139.92
11-18-75	OD-11-161-F	Vinson Supply Company		3,630.14
11-18-75	OD-11-162-F	Vinson Supply Company		5,913.35
10-24-75	5-18289	B.F. Walker		49.14
8-27-75	875-21	John West Engineering		218.40
11-05-75	1040	Wallach Concrete Products		311.22
11-03-75	1017	Wallach Concrete Products		933.66
10-21-75	29353	XL Transportation Co.		407.45
10-21-75	29354	XL Transportation Co.		226.84
10-21-75	29355	XL Transportation Co.		3,322.43
10-21-75	29356	XL Transportation Co.		1,063.63
10-21-75	29357	XL Transportation Co.		2,034.61
10-21-75	29358	XL Transportation Co.		2,074.92
10-21-75	29359	XL Transportation Co.		1,526.14
10-28-75	29399	XL Transportation Co.		831.67
10-28-75	29400	XL Transportation Co.		693.06
10-28-75	29401	XL Transportation Co.		1,258.82
11-05-75	29463	XL Transportation Co.		854.30
11-18-75	29599	XL Transportation Co.		198.02
11-18-75	29600	XL Transportation Co.		207.92
10-31-75	9958	Mustang Mud Inc.		2,408.43
10-20-75	10-6	New Mexico Electric Service		2.06
9-30-75	01222	W-H-B, Inc.		655.21
11-21-75	68253	AMF Tuboscope, Inc.		5,896.61
11-24-75	A-571	Automatic Pipe Racker, Inc.		875.76
11-25-75	10150	Mustang Mud Inc.		2,626.00
11-25-75	10151	Mustang Mud Inc.		2,626.00
11-25-75	10152	Mustang Mud Inc.		2,626.00
11-25-75	10149	Mustang Mud Inc.		2,626.00
11-19-75	10088	Mustang Mud Inc.		2,167.36
11-19-75	10089	Mustang Mud Inc.		4,318.91
11-26-75	5594	Sherman Power Tongs, Inc.		2,735.67
11-24-75	2736A	Star Welding Service		274.56
11-21-75	75-3661R	Thrasher Trucking Co.		156.20
11-25-75	OD-11-246-F	Vinson Supply Co.		2,955.01
11-25-75	11-151	Yellow Jacket Tools-Service		604.50
11-18-75	8070	Southwestern Insturment Co.		8.84
11-30-75	A572	Automatic Pipe Racker, Inc.		1,302.00
12-01-75	75086	Advance Consultants Corp.		4,471.60
12-02-75	68546	AMF Tuboscope, Inc.		412.15
12-01-75	3-79	Durrett & Associates		2,199.61
12-02-75	18848	Houston Truck Lines, Inc.		74.20
11-24-75	902950	Halliburton		405.39
11-23-75	902949	Halliburton		15,917.12
11-30-75	5617	Sherman Power Tongs, Inc.		832.00

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Texas West Oil & Gas Corporation

Tangible & Intangible Drilling Costs Analysis

Well Name: Madera #1

Date	Invoice No.	Vendor	Drilling & Completion Costs	
			Tangibles	Intangibles
11-30-75	14655	Texas Reamer Co.		2,600.00
11-30-75	14654	Texas Reamer Co.		1,846.00
11-30-75	14653	Texas Reamer Co.		2,335.32
12-03-75	75-3792R	Thrasher Trucking Co.		180.32
12-03-75	75-3793R	Thrasher Trucking Co.		108.16
11-22-75	WL121090	Welex		4,799.18
12-03-75	29732	XL Transportation Co.		116.19
11-30-75	10281	Mustang Mud Inc.		783.12
11-30-75	10280	Mustang Mud Inc.		172.12
11-30-75	10218	Mustang Mud Inc.		2,626.00
11-30-75	10217	Mustang Mud Inc.		2,626.00
11-30-75	10216	Mustang Mud Inc.		2,626.00
11-30-75	10215	Mustang Mud Inc.		2,626.00
11-30-75	10214	Mustang Mud Inc.		2,626.00
11-30-75	10213	Mustang Mud Inc.		2,626.00
11-30-75	10212	Mustang Mud Inc.		2,626.00
11-30-75	10211	Mustang Mud Inc.		2,626.00
11-30-75	10210	Mustang Mud Inc.		2,626.00
11-30-75	10209	Mustang Mud Inc.		4,620.51
12-08-75	OD-12-45-F	Vinson Supply Co.		2,950.45
12-03-75	OD-12-8-F	Vinson Supply Co.		56.28
12-02-75	OD-12-2-F	Vinson Supply Co.		5,191.09
12-02-75	OD-12-1-F	Vinson Supply Co.		1,274.68
12-08-75	58657	Cameron Iron Works, Inc.		124.80
11-30-75	21093	Champion Chemicals, Inc.		808.38
11-30-75	1843	Executive Mobile Home Lease Co.		312.00
11-30-75	13257	Tank Rental, Inc.		421.64
12-09-75	OD-12-56-F	Vinson Supply Co.		139.44
12-09-75	OD-12-65-F	Vinson Supply Co.		2,956.67
12-10-75	OD-12-87-F	Vinson Supply Co.		(1,274.68)
12-10-75	OD-12-91-F	Vinson Supply Co.		3,770.15
12-10-75	OD-12-92-F	Vinson Supply Co.		4,141.86
12-10-75	10306	Mustang Mud Inc.		4,779.78
12-10-75	10307	Mustang Mud Inc.		2,626.00
12-10-75	10308	Mustang Mud Inc.		2,626.00
11-13-75	11-13	A. W. Thompson, Inc.		110,676.03
12-12-75	11-15	General Communications Service		44.07
12-31-75	75096	Advance Consultants, Corp.		6,297.20
11-30-75	75-11149	Nolan H. Brunson, Inc.		915.57
12-31-75	22674	Champion Chemicals, Inc.		816.96
12-11-75	902894	Halliburton		3,256.76
12-24-75	SA587493	Halliburton		104.00
12-31-75	10527	Mustang Mud Inc.		2,626.00
12-31-75	10528	Mustang Mud Inc.		2,626.00
12-31-75	10529	Mustang Mud Inc.		2,626.00
12-31-75	10530	Mustang Mud Inc.		1,590.42
12-31-75	10531	Mustang Mud Inc.		3,594.03
12-31-75	10532	Mustang Mud Inc.		2,731.45
12-31-75	10533	Mustang Mud Inc.		2,626.00
12-31-75	10534	Mustang Mud Inc.		2,626.00
12-31-75	10535	Mustang Mud Inc.		2,626.00
12-31-75	10536	Mustang Mud Inc.		2,626.00
12-31-75	10537	Mustang Mud Inc.		2,626.00
12-31-75	10538	Mustang Mud Inc.		13,000.00
12-31-75	16127	Texas Reamer Co.		2,981.16
12-31-75	13359	Tank Rental Co.		262.50
12-31-75	OD-12-297-F	Vinson Supply Co.		1,885.02

WO&G Form 111a (Rev. 5-76)

Texas West Oil & Gas Corporation

Tangible & Intangible Drilling Costs Analysis

Page Four

Well Name: Madera #1

Date	Invoice No.	Vendor	Drilling & Completion Costs	
			Tangibles	Intangibles
12-16-75	39855	Chaparral Service Inc.		522.35
12-16-75	39835	Chaparral Service Inc.		70.20
11-24-75	10600	Diamond "S"		57.42
12-16-75	10320	Mustang Mud Inc.		(816.65)
12-16-75	10321	Mustang Mud Inc.		2,626.00
12-16-75	10322	Mustang Mud Inc.		2,626.00
12-16-75	10323	Mustang Mud Inc.		2,626.00
12-16-75	10324	Mustang Mud Inc.		2,626.00
12-16-75	10325	Mustang Mud Inc.		2,626.00
12-16-75	10326	Mustang Mud Inc.		2,749.76
12-16-75	10327	Mustang Mud Inc.		2,626.00
12-18-75	1275006	United Chemical Corp.		26.00
12-22-75	OD-12-186-F	Vinson Supply Co.		346.35
12-19-75	OD-12-179-F	Vinson Supply Co.		1,885.02
12-19-75	OD-12-181-F	Vinson Supply Co.		(2,956.67)
12-19-75	OD-12-182-F	Vinson Supply Co.		(2,956.01)
12-23-75	OD-12-194-F	Vinson Supply Co.		1,885.02
12-23-75	OD-12-192-F	Vinson Supply Co.		5,650.71
12-22-75	21948	Champion Chemicals Inc.		763.76
12-22-75	21949CM	Champion Chemicals, Inc.		(1,181.32)
12-05-75	12-5-75	New Mexico Electric Service		109.83
1-05-76	1-23-76	New Mexico Electric Service		119.39
1-22-76	378	Mustang Mud Inc.		2,626.00
1-30-76	OD-1-189-F	Vinson Supply Company		1,885.02
1-31-76	24146	Champion Chemicals Inc.		553.26
1-26-76	23897	Champion Chemicals Inc.		816.96
1-26-76	23896	Champion Chemicals Inc.		1,556.55
1-17-76	69573	Dresser Industries Inc.		838.24
1-17-76	69574	Dresser Industries Inc.		838.24
1-16-76	63304	Dresser Industries Inc.		1,450.80
1-16-76	63303	Dresser Industries Inc.		1,773.20
1-03-76	55729	Dresser Industries Inc.		81.12
1-03-76	55726	Dresser Industries Inc.		171.60
1-03-76	55727	Dresser Industries Inc.		140.40
1-03-76	55728	Dresser Industries Inc.		81.12
1-01-76	3-91	Durrett & Associates		4,994.87
1-31-76	1913	Executive Mobile Home Lease Co.		312.00
1-31-76	1921	Executive Mobile Home Lease Co.		312.00
12-31-75	10625	Mustang Mud Inc.		801.36
12-29-75	10626	Mustang Mud Inc.		7,125.71
1-08-76	205	Mustang Mud Inc.		2,626.00
1-09-75	206	Mustang Mud Inc.		2,626.00
1-09-76	207	Mustang Mud Inc.		2,626.00
1-10-76	208	Mustang Mud Inc.		2,626.00
1-13-76	209	Mustang Mud Inc.		2,524.74
1-13-76	210	Mustang Mud Inc.		2,626.00
1-16-76	10822	M&B Fishing Tool Co.		109.46
12-29-75	12-417	Red's Inspection Service		211.12
1-25-76	4-1876	Schlumberger Well Service		388.00
1-27-76	76-367-R	Thrasher Trucking Co.		108.16
1-27-76	76-366-R	Thrasher Trucking Co.		267.72
1-23-76	16091	Texas Reamer Co.		1,222.00
1-23-76	16090	Texas Reamer Co.		2,283.84
1-23-76	OD-1-35-F	Vinson Supply Co.		3,770.04
12-31-75	OD-12-371-F	Vinson Supply Co.		1,885.02
2-04-76	7614	Advance Consultants Corp.		7,898.80
2-01-76	4-4	Durrett & Associates		5,126.94
1-28-76	380	Mustang Mud Inc.		3,151.20

TWO&G Form T11a (Rev. 5-76)

Texas West Oil & Gas Corporation

Tangible & Intangible Drilling Costs Analysis

Well Name: Madera #1

Date	Invoice No.	Vendor	Drilling & Completion Costs	
			Tangibles	Intangibles
1-26-76	379	Mustang Mud Inc.		2,614.46
1-06-76	1-108	Yellow Jacket Tool Service		582.50
2-13-76	7621	Advance Consultants Corp.		2,242.90
2-17-76	A-736	Automatic Pipe Racker, Inc.		1,972.40
2-23-76	A-467	Automatic Pipe Racker, Inc.		2,534.68
2-17-76	72724	AMF Tuboscope, Inc.		389.90
2-09-76	A-735	Automatic Pipe Racker, Inc.		888.00
2-15-76	OC-800	Bob's Casing Crews, Inc.		312.00
2-15-76	OC-801	Bob's Casing Crews, Inc.		1,194.34
2-27-76	10820	Bob's Casing Crews, Inc.		1,082.02
2-23-76	40948	Baker Sales and Service		235.04
2-25-76	41697	Baker Sales and Service		663.75
2-13-76	24915	Champion Chemicals, Inc.		799.80
2-20-76	25425	Champion Chemicals, Inc.		391.12
2-28-76	41855	Chaparral Service, Inc.		466.68
3-02-76	41954	Chaparral Service, Inc.		146.43
2-13-76	2772676	Campbell Testing Co.		1,190.10
2-15-76	2773076	Campbell Testing Co.		1,803.80
2-11-76	82980	Dresser Industries, Inc.		838.24
2-11-76	82978	Dresser Industries, Inc.		1,773.20
2-11-76	82979	Dresser Industries, Inc.		1,450.80
2-25-76	92564	Dresser Industries, Inc.		838.24
3-02-76	94204	Dresser Industries, Inc.		115.00
2-29-76	1935	Executive Mobile Home Lease Co.		312.00
2-13-76	902595	Halliburton		969.80
2-12-76	902838	Halliburton		3,305.63
2-25-76	2413	Tom Hansen Company		377.40
2-17-76	19740	Houston Truck Line Inc.		79.10
3-05-76	2070	Jarrel Services, Inc.		39.08
3-03-76	00277	R. R. Kennedy Truck Line, Inc.		160.80
2-26-76	762-133	Lesgo Rental Tools Inc.		1,578.23
2-26-76	762-134	Lesgo Rental Tools Inc.		166.40
2-26-76	762-132	Lesgo Rental Tools Inc.		28.02
2-29-76	212376	Midland Tank Rental Co.		156.00
2-17-76	479	Mustang Mud Inc.		(1,716.80)
2-17-76	480	Mustang Mud Inc.		452.40
2-17-76	481	Mustang Mud Inc.		363.22
2-18-76	3308	M&B Fishing Tool & Service		944.84
2-25-76	0281945	McCullough Services		231.40
2-29-76	0282339	McCullough Services		5,699.20
2-23-76	21200	Nitrogen Oil Well Service Company		1,844.00
2-23-76	03953	Nitrogen Oil Well Service Company		1,993.06
2-28-76	02-103	Oil Field Truckers, Inc.		419.62
2-10-76	2-19	Oil Field Truckers, Inc.		409.61
2-29-76	37342	Starr Gas Company		264.89
1-28-76	42380	Schlumberger Well Services		9,452.02
2-06-76	43031	Schlumberger Well Services		11,109.00
2-16-76	43630	Schlumberger Well Services		5,503.16
2-29-76	44802	Schulmberger Well Services		5,412.20
2-07-76	5844	Sherman Power Tongs, Inc.		728.00
2-12-76	5848	Sherman Power Tongs, Inc.		579.80
2-12-76	5847	Sherman Power Tongs, Inc.		1,448.46
2-09-76	3329A	Star Welding Service		58.24
2-16-76	3415A	Star Welding Service		124.80
1-31-76	1-11	A. W. Thompson, Inc.		1,322.40
1-31-76	1-11	A. W. Thompson, Inc.		115,101.36
1-31-76	1-12	A. W. Thompson, Inc.		967.20
1-31-76	1-12	A. W. Thompson, Inc.		625.38
1-31-76	1-12	A. W. Thompson, Inc.		114,643.51
1-31-76	13451	Kenworthy Tank Rentals, Inc.		262.50
2-18-76	229	Two-State Tank Rental Co.		261.56
2-09-76	16102	Texas Reamer Co.		1,222.00
2-18-76	16138	Texas Reamer Co.		257.40
2-10-76	76-546R	Thrasher Trucking Co.		116.20
2-10-76	76-581R	Thrasher Trucking Co.		224.58

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Texas West Oil & Gas Corporation

Tangible & Intangible Drilling Costs Analysis

Well Name: Madera #1

Date	Invoice No.	Vendor	Drilling & Completion Costs	
			Tangibles	Intangibles
2-19-76	76-630R	Thrasher Trucking Co.		253.18
2-24-76	76-679R	Thrasher Trucking Co.		152.95
2-25-76	OD-2-161F	Vinson Supply Co.		1,885.02
2-25-76	OD-2-159-F	Vinson Supply Co.		(3,770.04)
2-25-76	OD-2-160-F	Vinson Supply Co.		371.67
2-27-76	OD-2-260-F	Vinson Supply Co.		(3,768.14)
2-12-76	01792	W-H-B, Inc.		593.47
2-18-76	30354	XL Transportation Co.		827.42
2-18-76	30353	XL Transportation Co.		581.63
2-18-76	7843	Allstate Construction Inc.		237.12
2-09-76	793736	Halliburton		10,250.52
2-12-76	623	Mustang Mud Inc.		(4,007.50)
2-19-76	0254	Oil Field Truckers, Inc.		432.53
2-17-76	2502	Red's Inspection Service, Inc.		506.00
2-15-76	2-15	A. W. Thompson, Inc.		81.34
2-15-76	2-15	A. W. Thompson, Inc.		78.45
2-15-76	2-15	A. W. Thompson, Inc.		499.20
2-15-76	2-15	A. W. Thompson, Inc.		63,023.96
3-24-76	7951	Allstate Construction Co.		616.10
3-22-76	47899	Baker Oil Tools, Inc.		92.04
3-09-76	65784	Cameron Iron Works, Inc.		384.80
3-16-76	66073	Cameron Iron Works, Inc.		275.60
3-22-76	66527	Cameron Iron Works, Inc.		162.20
3-22-76	66528	Cameron Iron Works, Inc.		145.60
3-24-76	66940	Cameron Iron Works, Inc.		161.20
3-24-76	42514	Chaparral Services, Inc.		222.14
3-24-76	42523	Chaparral Services, Inc.		217.91
3-16-76	3243	Dresser Industries, Inc.		561.60
3-16-76	3244	Dresser Industries, Inc.		324.48
3-16-76	3245	Dresser Industries, Inc.		324.48
3-17-76	3761	Dresser Industries, Inc.		(115.00)
3-20-76	5831	Dresser Industries, Inc.		915.20
3-20-76	5832	Dresser Industries, Inc.		115.00
3-01-76	4-13	Durrett & Associates		5,721.48
3-01-76	793712	Halliburton		6,586.58
3-22-76	3-41	Tom Hansen Company		231.03
2-28-76	2-48	Hobbs Anchor and Road Boring Service		249.93
3-16-76	763-073	Lesgo Rental Tools, Inc.		274.47
3-16-76	763-074	Lesgo Rental Tools, Inc.		1,277.56
3-24-76	3-1342	Land & Marine Rental Co.		6,655.56
3-15-76	11009	M&B Fishing Tool Co., Inc.		350.40
3-19-76	11036	M&B Fishing Tool Co., Inc.		3,888.25
3-15-76	3107-76	Midland Tank Rental Co.		124.80
3-26-76	3-6	New Mexico Electric Service		49.09
3-09-76	21358	Nitrogen Oil Well Service Company		2,083.12
3-12-76	21392	Nitrogen Oil Well Service Company		2,936.96
3-09-76	04157	Nitrogen Oil Well Service Company		1,174.06
3-12-76	04308	Nitrogen Oil Well Service Company		2,009.38
3-04-76	3-9	Oil Field Truckers, Inc.		426.64
3-18-76	660934	Otis Engineering Corp.		1,815.32
3-04-76	3-509	Red's Inspection Service, Inc.		443.00
3-15-76	CM37574	Starr Gas Company		(273.72)
3-05-76	118926	J. J. Willis Co.		60.06
3-02-76	30482	XL Transportation Co.		252.10
3-09-76	30542	XL Transportation Co.		571.02
3-09-76	30543	XL Transportation Co.		39.52
3-16-76	30602	XL Transportation Co.		747.51
10-27-75	OC-10-680	Vinson Supply Co.	12,538.44	
		Discount	(188.92)	
10-27-75	OD-10-679	Vinson Supply Co.	116,003.33	
		Discount	(1,790.68)	
11-12-75	OD-11-251	Vinson Supply Co.	187,872.11	
11-13-75	OD-11-279	Vinson Supply Co.	1,118.33	
11-30-75	58293	Cameron Iron Works, Inc.	4,416.49	
		Discount	(88.33)	
11-30-75	58291	Cameron Iron Works, Inc.	6,862.65	
		Discount	(137.25)	

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Texas West Oil & Gas Corporation

Tangible & Intangible Drilling Costs Analysis

Well Name: Madera #1

Date	Invoice No.	Vendor	Drilling & Completion Costs	
			Tangibles	Intangibles
12-29-75	OD12461	Vinson Supply Co.	9,938.81	
12-31-75	OD-12-325-F	Vinson Supply Co.	408.76	
12-31-75	CM-OC12588	Vinson Supply Co.	(6,945.19)	
12-31-75	OD-12-1646	Vinson Supply Co.	1,588.20	
1-30-76	OD-1-101-F	Vinson Supply Co.	475.82	
2-25-76	41697	Baker Sales & Service	5,047.42	
2-27-76	350	Jarrel Services, Inc.	737.36	
2-12-76	MI-981	Seaboard Pipe & Equipment Co.	51,733.42	
4-20-76	28888	Champion Chemicals, Inc.		322.40
4-19-76	43061	Chaparral Service, Inc.	1,083.16	
4-19-76	43063	Chaparral Service, Inc.		72.80
4-29-76	43255	Chaparral Service, Inc.		211.75
4-29-76	43308	Chaparral Service, Inc.		990.92
5-01-76	4-24	Durrett & Associates		2,460.50
3-01-76	13520	Kenworthy Tank Rental		262.50
4-22-76	4-5-76	New Mexico Electric Service		13.58
4-12-76	17055	Shorty Hall Rig Co.		79.10
4-04-76	4460A	Star Welding Service	532.48	
4-26-76	OD-4-950	Vinson Supply Company	910.59	
4-21-76	OD-4-753	Vinson Supply Company		8.72
4-26-76	OD-4-947	Vinson Supply Company	(104.89)	
4-27-76	OD-4-195-F	Vinson Supply Company	9,305.13	851.28
4-13-76	4-132-C	Yellow Jacket Tools-Service		170.00
2-15-76	OC-801	Bob's Casing Crews, Inc.		47.77
4-30-76	4-259	Tom Hansen Company		738.80
4-76		Drilling Overhead		9,600.00
3-30-76	3-339	ABC Rental Tool Co.		815.88
2-13-76	73913	Atlas Truck Line, Inc.		580.38
3-17-76	46802	Baker Oil Tools	193.40	433.73
3-26-76	49308	Baker Oil Tools	209.53	383.50
3-31-76	50106	Baker Oil Tools		217.35
4-08-76	28422	Champion Chemicals, Inc.		187.20
4 -08-76	42785	Chaparral Service, Inc.		928.23
4-07-76	68191	Cameron Iron Works, Inc.	26.54	
		Discount	(.53)	
3-23-76	66884	Cameron Iron Works, Inc.	103.02	
		Discount	(2.06)	
3-29-76	67345	Cameron Iron Works, Inc.	20,792.36	
		Discount	(415.85)	
4-01-76	4-19	Durrett & Associates		3,002.88
3-31-76	1973	Executive Mobile Home Lease Co.		471.64
3-12-76	793565	Halliburton		610.26
3-08-76	109061	Halliburton		1,643.20
3-31-76	76-1115	Johnston Construction, Inc.		99.84
3-31-76	13622	Kenworthy Tank Rental, Inc.		262.50
3-31-76	00645-3913	R. R.Kennedy Trucking Inc.		252.00
		Rubert Madera		2,250.00
2-23-76	2-04	New Mexico Electric Service Company		116.85
3-25-76	03-01-001-147-01-NM	Pool Company		11,336.21
4-01-76	65430-N	Ruthco, Inc.		986.95
4-06-76	78-486	Frank C. Strech Trucking Co.		300.35
4-07-76	11076	Shorty Hall Rig Company, Inc.		60.06
4-08-76	18085	Shorty Hall Rig Company, Inc.		104.10
3-31-76	37927	Starr Gas Company		(143.52)
3-07-76	4-5708	Schlumberger Well Services		4,117.36
4-05-76	OC-4-3	Vinson Supply Company		37.50
4-06-76	OD-4-60	Vinson Supply Company	1,222.35	
		Discount	(2.16)	
2-26-76	OD-2-891	Vinson Supply Company	172.32	
4-08-76	OD-4-228	Vinson Supply Company	16.64	
		Discount	(.11)	
2-27-76	OD-2-1418	Vinson Supply Company	157.65	
3-30-76	OD-3-172-F	Vinson Supply Company		9.45

TWO&G Form 111a (Rev. 5-76)

Texas West Oil & Gas Corporation

Tangible & Intangible Drilling Costs Analysis

Well Name: Madera #1

Date	Invoice No.	Vendor	Drilling & Completion Costs	
			Tangibles	Intangibles
3-30-76	OC-3-317	Vinson Supply Company	212.26	
3-31-76	OD-3-255-F	Vinson Supply Company		421.72
3-31-76	OD-3-254-F	Vinson Supply Company		2,683.82
4-01-76	1833	Wallach Conrete Products		96.20
		Total Tangible	$424,002.60	
		Total Intangible		$1,092,063.7
		Total Tangible and Intangible	$1,516,066.31	

BEFORE THE

OIL CONSERVATION COMMISSION OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF TEXAS WEST OIL & GAS CORPORATION FOR COMPULSORY POOLING, BELL LAKE AREA, LEA COUNTY, NEW MEXICO - REHEARING

Orders No. R-5039
No. R-5039-A

STATEMENT OF CONTINENTAL OIL COMPANY

STATEMENT OF THE CASE

This is a proceeding for compulsory pooling, brought by Texas West Oil & Gas Corporation under the provisions of Sec. 65-3-14, New Mexcio Statutes Annotated, 1953 Comp., as amended, to pool all mineral interests as to the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, Lea County, New Mexico.

The application was heard before Commission Examiner Richard L. Stamets as Case No. 5493 on May 28, 1975, at which time Continental Oil Company as operator of the Bell Lake Unit, appeared and protested the application.

On June 10, 1975, the Commission entered its order No. R-5039, pooling the subject acreage. As provided by Sec. 65-3-11.1, N.M.S.A., 1953, Continental Oil Company filed a timely application for a hearing do novo before the Commission. This hearing was held on July 25, 1975, and on September 2, 1975, the Commission entered its order No. R-5093-A, again pooling the subject acreage, modifying the previous order only to the extent of reducing the risk factor allowed from 200% to 150%.

As provided by Sec. 65-3-22, N.M.S.A., 1953, Continental

filed a timely application for rehearing. This application, as provided by law, pointed out the deficiencies of order No. R-5039-A, and the lack of substantial evidence in the record to support it. The Commission, presumably seeing the deficiencies in its order and in the record granted the rehearing, without entering an order to that effect. This rehearing was held October 23, 1975.

Prior to the rehearing, according to the evidence admitted over the protest of Continental, Texas West commenced, with the approval of the Commission, the drilling of a well in the E/2 of Section 5.

COMPULSORY POOLING STATUTE

The Commission derives its authority to enter an order compulsorily pooling mineral interests uderlying a spacing or proration unit from Sec. 65-3-14 C, N.M.S.A., 1953.

The requirements of this statute were stated at the rehearing by Mr. Ramey, and in Finding No. 7 of the Commission's order No. R-5039-A, as follows:

a. multiple ownership, either working interest or royalty interest, within a single spacing or proration unit,

b. interest owner in the proposed unit who have not agreed to pool their interests, and

c. one owner who has the right to drill, has drilled or proposes to drill a well.

This statement of the requirements for compulsory pooling ignores the very basic, fundamental finding that the Commission must make in the exercise of its jurisdiction -- the prevention of waste. Continental Oil Company v. Oil Conservation Commission, 70 N. M. 310.

In considering the compulsory pooling statute, Sec.

65-3-14 C, the New Mexico Supreme Court had this to say in Sims v. Mechem 72 N. M. 186.

> "Unquestionably the commission is authorized to require pooling of property when such pooling has not been agreed upon by the parties, Sec. 65-3-14(c), N.M.S.A., 1953, * * * But the statutory authority of the commission to pool property or to modify existing agreements relating to production within a pool under either of these subsections must be predicated on the prevention of waste. Sec. 65-3-10, 1953 Comp." (Emphasis added)

The Sims case was a case in which the Commission made the findings set out above and in finding No. 7 of Order No. R-5039-A. The court held this clearly insufficient to support the jurisdiction of the Commission to enter the order. See Commission Order No. 1310, and compare Commission Order No. R-677. Also see Continental Oil Co., vs. O.C.C., supra, as quoted in the Sims case at p. 189.

In the Sims case, the court summed up the situation as follows:

> " * * * There is nothing in the evidence before the commission tending to support a finding of waste or the prevention of waste by pooling of the property into two standard units.
>
> "We conclude, therefore, that since commission order R-1310 contains no finding as to the existence of waste, or that pooling would prevent waste, based upon evidence to support such a finding, the commission was without jurisdiction to enter order R-1310, and that is void. Continental Oil Co. v. Oil Conservation Commission, supra." (Emphasis added)

This is exactly the situation that existed when the Commission entered its orders Nos. R-5039 and R-5039-A. There was no finding in either order on waste, and no evidence in the record that would support such a finding. The compulsory pooling in this case should have been denied at the first hearing, and at a minimum, at the second. Regardless of its purposes, the Commission is required to

comply with the law. Continental Oil Co. v. O.C.C., supra, at p. 326.

The Commission in the past, and again in this case, has apparently operated on the theory that any owner who has the right to drill within a spacing or proration, who cannot obtain the cooperation of other interest owners, is thereby, perforce, entitled to a compulsory order with all of the other benefits authorized by the pooling statute. This is clearly not the law. Sims v. Mechem, supra. Such a pooling order should only be granted where such a well will avoid the drilling of unnecessary wells, protect correlative rights, and prevent waste, as provided by Sec. 65-3-14 C. Texas West would have the Commission read these factors in the alternative, but that is contrary to the plain language of the Sims case, the ruling of which is binding on the Commission. The authority of the Commission is founded in the prevention of waste; the prime objective of the conservation statutes, including the statute involved here, is directed to that end. Sims v. Mechem, supra, Continental Oil Co. v. O.C.C. 531 P.2d 939 (N.M. 1975).

WASTE

As we have pointed out, there was no finding of waste, and no evidence to support a finding that waste would be prevented by the entry of a compulsory pooling order when Commission orders R-5039 and R-5039-A were entered. The record, on the other hand, was replete with evidence to support a finding that if the Texas West application were granted, waste would, in fact, occur. In view of this situation, and in view of the holding of the New Mexico Supreme Court in Fasken v. O.C.C., 532 P. 2d 588 (N.M. 1975), the

Commission granted our application for rehearing. The record was woefully deficient to support the Commission orders.

At this last hearing on October 23, 1975, the applicant was still apparently not aware of its obligation to show the Commission that waste was occuring, or that waste would be prevented by the approval of its application for compulsory pooling. It founded its case on the protection of correlative rights (which we will discuss later) and offered nothing on waste until, with the prodding of a member of the Commission staff, some rather weak testimony regarding waste was elicited from the Texas West witness. This is not to say that the Commission staff should seek to determine if waste is actually occuring, or will occur. The Commission has the positive duty to elicite that information, and to act on it. We will discuss this also later in this statement.

But with this prodding, what kind of evidence did Texas West offer? Th testimony in response to questions that called for a "yes" answer, indicated that there might possibly be stringers of Morrow sands encountered at Texas West's well site that were not encountered in the Bell Lake Unit No. 14 well. The witness, on cross examination by Continental, admitted that he had no evidence to support this conclusion, and that it was, at best, speculative. His expert petroleum engineer, Mr. Hickman, made the same admission.

In contrast to this, Continental offered extensive testimony and evidence as to the nature of the particular Morrow reservoir encountered in the Bell Lake Unit No. 14 well. This testimony, wholly unrefuted, shows the formation has an extremely high permability and that the No. 14 well is draining in excess of 1400 acres. A simple mathmatical

calculation shows such a well has a drainage radius in excess of 4400 feet. Even Texas West's expert testified to the same effect. The evidence further shows that the nearest reservoir boundary to the No. 14 well is in excess of 2200 feet from the well bore, probably in excess of 2500 feet. The Texas West location, being 1700 feet from the No. 14 well, is well within the reservoir being effectively and economically drained by the No. 14 well. None of this testimony was refuted.. In fact if there is anything on which the parties can agree it is that the No. 14 well is effectively draining all of the productive acreage within the E/2 of Section 5. This situation does not in any way impair correlative rights, as we shall later show.

If this be so, and the unrefuted testimony in the record shows that the No. 14 well is effectively and economically draining a reservoir in excess of 1400 acres, including the acreage to be dedicated to the Texas West well, the drilling of the Texas West well will constitute waste and Continental's testimony to that effect is uncontradicted in the record in this case. In fact the testimony offered by Texas West supports the same conclusion.

The (P/Z) calculations and material balance curves offered by both parties, and the reservoir limits study offered by Continental literally cry out that this well of Texas West is an unnecessary and wasteful well.

CORRELATIVE RIGHTS, COLLATERAL ATTACK ON SPACING ORDER, AND THE BELL LAKE UNIT

In response to the showing made by Continental that the No. 14 well is effectively and economically draining the E/2 of Section 5, the Commission replies, as shown by its orders Nos. R-5039 and R-5039-A, that this constitutes a

collateral attack on the Commission's spacing order, Rule 104. The Commission has further ruled that Continental cannot be heard to say that the Bell Lake Unit agreement will protect the correlative rights of Texas West and its lessors, although it has previously made that conclusion when it approved the unit. In ruling out testimony regarding the history, development, and effect of the Bell Lake Unit, we submit, the Commission committed error.

Rather that being a collateral attack on spacing, Continental's proffered testimony is for the purpose of showing the Bell Lake Unit Agreement is a proper conservation measure, designed to prevent waste and to protect correlative rights of all interest owners within the unit boundaries, including the interests of the 7/32nds undivided mineral interest in the E/2 of Section 5 involved in this hearing.

At hearing on October 23, the Commission ruled inadmissable any testimony or evidence regarding the Bell Lake Unit and Unit Agreement as being immaterial to any issue before the Commission. This, we again submit, was error. The ruling effectivley denied to Continental the opportunity for a fair and impartial hearing as required by law. Continental's position was that no waste was occuring and that waste would occur if the Texas West were drilled, and that the present situation fully protects correlative rights. We were denied the opportunity to fully develop this testimony but despite this, the record amply established that waste will occur if the Texas West well is drilled.

We were further denied the right to direct our testimony to the remaining issues -- the question of a collateral attack on the Commission's spacing order, and the protection

of correlative rights. We again note our objections to the Commission's ruling.

Fortunately the Commission still has the opportunity to correct this error. The entire record, including the record of the two previous hearings where this pertinent testimony was offered, both before the Commission examiner and before the Commission is available, and the Commission can, if it so chooses, review this record on the points we complain of.

Sec. 65-3-22 (b), N.M.S.A., 1953, provides that on appeal the trial shall be without a jury, "and the transcript of proceedings before the Commission, including the evidence taken in hearings before the Commission, shall be received in evidence by the court, in whole or in part upon offer by either party * * *." (Emphasis added). The entire record of this case, which is and has been a single case before the Commission, is available for appeal. It is equally available to the Commission at this time to correct the error of its ruling at the hearing on October 23.

In light of the ruling made by the Commission, we will not discuss the evidence proffered, but will confine our discussion to the legal questions involved, and evidence that is in the Commission files, other than the prior hearing transcripts, and readily abailable to it.

UNITIZATION

We cannot help but feel that the Commission, in this case, has misconceived the role of unitization as a conservation measure, and the Commission's role in connection with unitization.

As foundationary matters, it must be pointed out that the Bell Lake Unit was formed, and approved by the Commission by Order No. R-355 on August 28, 1953. The Commission's

DRAFT

dr/

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. 5493

Order No. R- 5039-A

APPLICATION OF TEXAS WEST OIL &
GAS CORPORATION FOR COMPULSORY
POOLING, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on July 25, 1975 at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this _____ day of August, 1975, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Texas West Oil & Gas Corporat[illegible], seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the E/2 of Section [illegible], Township 24 South, Range 34 East, NMPM, Bell Lake Field, Lea County, New Mexico.

(3) That the spacing for this proposed well in the Bell Lake Pool is governed by the statewide spacing rules for wells of Pennsylvanian age as promulgated by the Commission, after notice and hearing, on September 6, 1972, by its Order No. R-4383.

(3) That by Commission Order No. R-2707, dated May 25, 1964, Rule 104 of the Commission Rules and Regulations was amended to provide that all gas pools of Pennsylvanian age or older in Southeast New Mexico which were created and defined June 1, 1964, or later shall have 320-acre spacing and proration units, inasmuch as it was found that in Southeast New Mexico ",...a gas well completed in the Pennsylvanian formation or a deeper formation will efficiently and economically drain and develop a 320-acre tract."

(4) That by Commission Order No. R-~~5202~~ 4918, dated November 19, 1974, the South Bell Lake-Morrow Gas Pool, ~~and the Morrow formation within one-mile thereof,~~ which includes the acreage involved in the subject application, was made "...subject to the provisions of Rule 104 of the Commission Rules and Regulations notwithstanding the fact said pool was created and defined prior to June 1, 1964."

(5) That no question was properly raised before the Commission in this proceeding challenging the spacing rules for the South Bell Lake-Morrow Gas Pool.

(6) That Section 65-3-14(c) NMSA, 1953 Compilation, sets out those factors the Commission must consider when an application for compulsory pooling comes before it.

(7) That to obtain a compulsory pooling order from the Commission, an applicant must show, as required by statute, that the following factors exist:

a. multiple ownership, either working interest or royalty interest, within a single spacing or proration unit,

b. interest owners in the proposed unit who have not agreed to pool their interests, and

c. one owner who has the right to drill, has drilled or proposes to drill a well.

(8) That the applicant, Texas West Oil and Gas Corporation has the operating rights to a 7/32 undivided working interest in the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, NMPM, not committed to the Bell Lake Unit Agreement, and by virtue thereof has the right to drill and proposes to drill a well at an orthodox location for the development of said 320-acre spacing unit.

(9) That the protestant in this case, ~~Continental~~ Continental Oil Company, as operator of the Bell Lake ~~Unit~~ Unit, has the operating rights to a 25/32 undivided working interest in said 320-acre spacing unit, as well as to the working interest in all acreage offsetting the proposed unit to the north, south, and west.

(10) That there are interest owners in the proposed proration unit who have not agreed to pool their interests.

(11) That Continental has objected to the proposed ~~force~~ compulsory pooling on two grounds:

a) That the marrow zone of the Pennsylvanian formation underlying the proposed spacing unit is being adequately drained by offsetting wells in its Bell Lake Unit; and

b) That the applicant can protect its correlative rights by committing its interest in the E/2 of Section 5, Township 24 South, Range 34 East, NMPM, to the Bell Lake

Unit and sharing in unit production.

(12) That Continental's objections summarized in Finding No. 11(a) above constitute a collateral attack upon the spacing established for the South Bell Lake-Morrow Gas Pool by Order No. R-4918, which issue is not properly before the Commission in this case.

(13) That the Commission in Order No. R-4918 found that waste will not result from developing the South Bell Lake-Morrow Gas Pool and the Morrow formation within one mile thereof by drilling one well on each 320-acre spacing unit.

(14) That Continental's objections summarized in Finding No. 11(b) above are tantamount to an attempt to compulsorily include applicant's interest in the E/2 of the aforesaid Section 5 in the Bell Lake Unit.

(15) That the State of New Mexico has no statute permitting compulsory unitization for ~~the~~ natural gas exploration or development.

(16) That the drilling of the proposed well will enable the mineral interest owners in the E/2 of said Section 5 to produce their just and fair share of the hydrocarbons underlying their tract from the ~~South Bell Lake~~ Morrow ~~Gas Pool~~ formation.

(17) That to protect correlative rights, and to afford to the owner of each interest in said unit the opportunity to recover or receive without unnecessary expense his just and fair share of the gas in said pool, the subject application should be approved by pooling all mineral interests, whatever they may be, within said unit.

(18) That the applicant should be designated the operator of the subject well and unit.

be afforded the opportunity to pay his share of estimated well costs to the operator in lieu of paying his share of reasonable well costs out of production.

20 ~~(18)~~ That any non-consenting working interest owner that does not pay his share of estimated well costs should have withheld from production his share of the reasonable well costs plus an additional ~~one hundred~~ percent thereof as a reasonable charge for the risk involved in the drilling of the well.

21 ~~(19)~~ That any non-consenting interest owner should be afforded the opportunity to object to the actual well costs but that actual well costs should be adopted as the reasonable well costs in the absence of such objection.

22 ~~(20)~~ That following determination of reasonable well costs, any non-consenting working interest owner that has paid his share of estimated costs should pay to the operator any amount that reasonable well costs exceed estimated well costs and should receive from the operator any amount that paid estimated well costs exceed reasonable well costs.

23 ~~(21)~~ That $1600.00 per month should be fixed as a reasonable charge for supervision (combined fixed rates) while drilling, and that $250.00 per month should be fixed as a reasonable charge for supervision while producing; that the operator should be authorized to withhold from production the proportionate share of such supervision charge attributable to each non-consenting working interest, and in addition thereto, the operator should be authorized to withhold from production the proportionate share of actual expenditures required for operating the subject well, not in excess of what are reasonable, attributable to each non-consenting working interest.

24 ~~(22)~~ That all proceeds from production from the subject well which are not disbursed for any reason should be placed in escrow to be paid to the true owner thereof upon demand and proof of ownership.

25 ~~(23)~~ That upon the failure of the operator of said pooled unit to commence drilling of the well to which said unit is dedicated on or before ~~September~~ November 15, 1975, the order pooling said unit should become null and void and of no effect whatsoever.

IT IS THEREFORE ORDERED:

(1) That all mineral interests, whatever they may be, in the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, NMPM, Bell Lake Field, Lea County, New Mexico, are hereby pooled to form a standard 320-acre gas spacing and proration unit to be dedicated to a well to be drilled at an orthodox location for said unit.

PROVIDED HOWEVER, that the operator of said unit shall commence the drilling of said well on or before the 15th day of ~~September~~ November, 1975, and shall thereafter continue the drilling of said well with due diligence to a depth sufficient to test the Pennsylvanian formation;

PROVIDED FURTHER, that in the event said operator does not commence the drilling of said well on or before the 15th day of ~~September~~ November, 1975, Order (1) of this order shall be null and void and of no effect whatsoever;

PROVIDED FURTHER, that should said well not be drilled to completion, or abandonment, within 120 days after commencement thereof, said operator shall appear before the Commission and show cause why Order (1) of this order should not be rescinded.

(2) That Texas West Oil & Gas Corporation is hereby designated the operator of the subject well and unit.

(3) That after the effective date of this order and within 30 days prior to commencing said well, the operator shall furnish the Commission and each known working interest owner in the subject unit an itemized schedule of estimated well costs.

(4) That within 30 days from the date the schedule of estimated well costs is furnished to him, any non-consenting working interest owner shall have the right to pay his share of estimated well costs to the operator in lieu of paying his share of reasonable well costs out of production, and that any such owner who pays his share of estimated well costs as provided above shall remain liable for operating costs but shall not be liable for risk charges.

(5) That the operator shall furnish the Commission and each known working interest owner an itemized schedule of actual well costs within 90 days following completion of the well; that if no objection to the actual well costs is received by the Commission and the Commission has not objected within 45 days following receipt of said schedule, the actual well costs shall be the reasonable well costs; provided however, that if there is an objection to actual well costs within said 45-day period the Commission will determine reasonable well costs after public notice and hearing.

(6) That within 60 days following determination of reasonable well costs, any non-consenting working interest owner that has paid his share of estimated costs in advance as provided above shall pay to the operator his pro rata share of the amount that reasonable well costs exceed estimated well costs and shall receive from the operator his pro rata share of the amount that estimated well costs exceed reasonable well costs.

TEO&G Form 106

TEXAS WEST OIL & GAS CORPORATION
609 Midland National Bank Building
Midland, Texas 79701

AUTHORITY FOR EXPENDITURE

Date: September 3, 1975

AFE # 108-b

Wildcat	Development
( ) Drilling	(X) Drilling
( ) Completion	(X) Completion
	( ) Drill Deeper
	( ) Workover

Lease Name: Madera | Well No.: 1 | Proposed Depth: 14,200'

County: Lea | State: New Mexico | Well Location: 1980' FN & EL Sec. 5, T-24-S, R-34-E

Spud Date: Est. 10/15/75 | Estimated Days to Drill: 100 | To Complete: 12

Field: Bell Lake South (Morrow)

INTANGIBLE WELL COST	DRY HOLE	COMPLETED WELL
Access, Location & Roads	$ 17,000.	$ 17,000.
Rig Move	35,000.	35,000.
Footage Cost	-0-	-0-
Day Work Cost (100 days @ $2700.; 12 days @ $2600.)	270,000.	301,200.
Bits & Reamers	65,600.	65,600.
Fuel	-0-	-0-
Water	8,000.	8,000.
Mud & Chemicals	72,000.	72,000.
Cementing & Services	48,000.	55,000.
Coring	-0-	-0-
Surveying & Testing	23,000.	23,000.
Mud Logging	9,900.	9,900.
Perforating	-0-	5,500.
Stimulation	-0-	7,500.
Transportation	10,000.	12,000.
Drilling Overhead Cost	5,265.	5,895.
Other Drilling Expense	25,000.	25,000.
Contingencies	20,000.	25,000.
Total Intangible Well Cost	$ 608,765.	$ 667,595.

TANGIBLE WELL COSTS					
30	' of 30	" Conductor Csg.	$ 450.	$ 450.
500	' of 16	" Surface Casing	9,200.	9,200.
5,200	' of 10-3/4	" Intermediate Csg.	98,342.	98,342.
12,000	' of 7-5/8	" Intermediate Csg.	136,296.	136,296.
	' of	" Production Casing	-0-	-0-
2,600	' of 5	" Liner	-0-	30,079
13,800	' of 2-7/8	" Tubing	-0-	42,842
Liner Equipment			-0-	3,000.
Wellhead Equipment			7,500.	24,000.
Producing Facilities, Tank Batteries, Flowlines			-0-	35,000.
Packers & Other Subsurface Tools			1,500.	7,500.
Contingencies			10,000.	15,000.
Total Tangible Well Costs			$ 263,288.	$ 401,709.
TOTAL WELL COST			$ 872,053.	$ 1,069,304.

Acreage Cost	$ -0-
Geological (Acquisition) Cost	-0-
TOTAL WELL COST + ACREAGE & GEOLOGICAL COSTS	$ 872,053. / $ 1,069,304.

APPROVED BY: _____

COMPANY: _____

DATE: _____

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
Texas West Oil & Gas Corporation	Madera	1

Unit Letter	Section	Township	Range	County
G	5	24 South	34 East	Lea

Actual Footage Location of Well:
1980 feet from the North line and 1980 feet from the East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
3586.4'	Morrow	Bell Lake South	320 ± Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

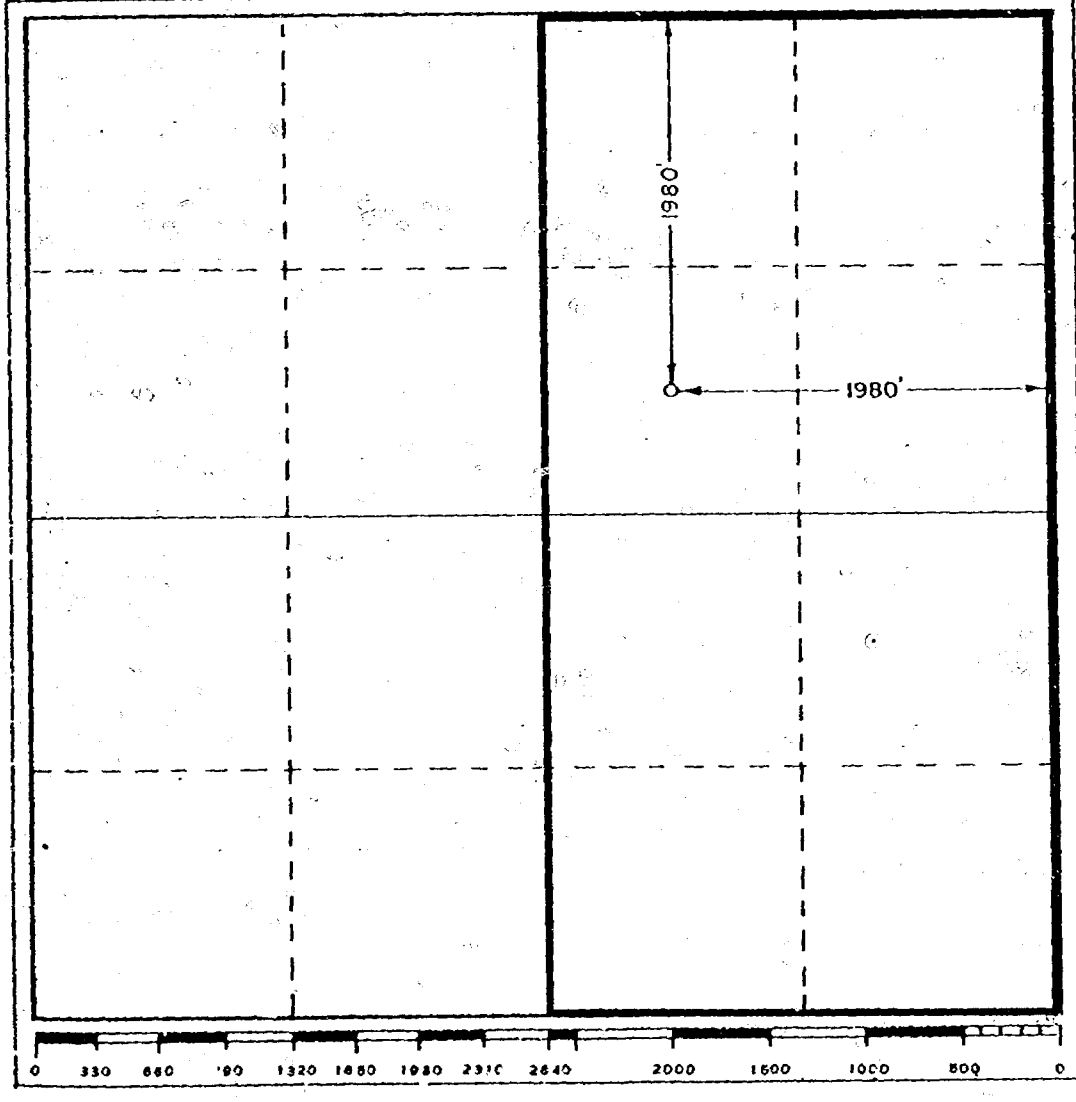
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling. etc?

☒ Yes ☐ No If answer is "yes," type of consolidation Force Pooled

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: L. N. Dunnavant

Position: President

Company: Texas West Oil & Gas Corporation

Date: 8 August 1975

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: August 7, 1975

Registered Professional Engineer and/or Land Surveyor: 676

Certificate No. JOHN W. WEST 676

REGISTERED PROFESSIONAL ENGINEER & LAND SURVEYOR STATE OF NEW MEXICO

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. 5493
Order No. R-5039-A

APPLICATION OF TEXAS WEST OIL &
GAS CORPORATION FOR COMPULSORY
POOLING, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on July 25, 1975, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 2nd day of September, 1975, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Texas West Oil & Gas Corporation, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, NMPM, Bell Lake Field, Lea County, New Mexico.

(3) That by Commission Order No. R-2707, dated May 25, 1964, Rule 104 of the Commission Rules and Regulations was amended to provide that all gas pools of Pennsylvanian age or older in Southeast New Mexico which were created and defined June 1, 1964, or later shall have 320-acre spacing and proration units, inasmuch as it was found that in Southeast New Mexico ",...a gas well completed in the Pennsylvanian formation or a deeper formation will efficiently and economically drain and develop a 320-acre tract."

(4) That by Commission Order No. R-4918, dated November 19, 1974, the South Bell Lake-Morrow Gas Pool and the Morrow formation within one mile thereof, which includes the acreage involved in the subject application, was made "...subject to the provisions of Rule 104 of the Commission Rules and Regulations

notwithstanding the fact said pool was created and defined prior to June 1, 1964."

(5) That no question was properly raised before the Commission in this proceeding challenging the spacing rules for the South Bell Lake-Morrow Gas Pool.

(6) That Section 65-3-14(c) NMSA, 1953 Compilation, sets out those factors the Commission must consider when an application for compulsory pooling comes before it.

(7) That to obtain a compulsory pooling order from the Commission, an applicant must show, as required by statute, that the following factors exist:

a. multiple ownership, either working interest or royalty interest, within a single spacing or proration unit,

b. interest owners in the proposed unit who have not agreed to pool their interests, and

c. one owner who has the right to drill, has drilled or proposes to drill a well.

(8) That the applicant, Texas West Oil and Gas Corporation, has the operating rights to a 7/32 undivided working interest in the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, NMPM, not committed to the Bell Lake Unit Agreement, and by virtue thereof has the right to drill and proposes to drill a well at an orthodox location for the development of said 320-acre spacing unit.

(9) That the protestant in this case, Continental Oil Company, as operator of the Bell Lake Unit, has the operating rights to a 25/32 undivided working interest in said 320-acre spacing unit, as well as to the working interest in all acreage off-setting the proposed unit to the north, south, and west.

(10) That there are interest owners in the proposed proration unit who have not agreed to pool their interests.

(11) That Continental has objected to the proposed compulsory pooling on two grounds:

a. That the Morrow zone of the Pennsylvanian formation underlying the proposed spacing unit is being adequately drained by offsetting wells in its Bell Lake Unit; and

b. That the applicant can protect its correlative rights by committing its interest in the E/2 of Section 5, Township 24 South, Range 34 East, NMPM, to the Bell Lake Unit and sharing in unit production.

(12) That Continental's objections summarized in Finding No. (11)a above constitute a collateral attack upon the spacing established for the South Bell Lake-Morrow Gas Pool by Order No. R-4918, which issue is not properly before the Commission in this case.

(13) That the Commission in Order No. R-4918 found that waste will not result from developing the South Bell Lake-Morrow Gas Pool and the Morrow formation within one mile thereof by drilling one well on each 320-acre spacing unit.

(14) That Continental's objections summarized in Finding No. (11)b above are tantamount to an attempt to compulsorily include applicant's interest in the E/2 of the aforesaid Section 5 in the Bell Lake Unit.

(15) That the State of New Mexico has no statute permitting compulsory unitization for natural gas exploration or development.

(16) That the drilling of the proposed well will enable the mineral interest owners in the E/2 of said Section 5 to produce their just and fair share of the hydrocarbons underlying their tract from the Morrow formation.

(17) That to protect correlative rights, and to afford to the owner of each interest in said unit the opportunity to recover or receive without unnecessary expense his just and fair share of the gas in said pool, the subject application should be approved by pooling all mineral interests, whatever they may be, within said unit.

(18) That the applicant should be designated the operator of the subject well and unit.

(19) That any non-consenting working interest owner should be afforded the opportunity to pay his share of estimated well costs to the operator in lieu of paying his share of reasonable well costs out of production.

(20) That any non-consenting working interest owner that does not pay his share of estimated well costs should have withheld from production his share of the reasonable well costs plus an additional 150 percent thereof as a reasonable charge for the risk involved in the drilling of the well.

(21) That any non-consenting interest owner should be afforded the opportunity to object to the actual well costs but that actual well costs should be adopted as the reasonable well costs in the absence of such objection.

(22) That following determination of reasonable well costs, any non-consenting working interest owner that has paid his share of estimated costs should pay to the operator any amount that reasonable well costs exceed estimated well costs and should receive from the operator any amount that paid estimated well costs exceed reasonable well costs.

(23) That $1600.00 per month should be fixed as a reasonable charge for supervision (combined fixed rates) while drilling, and that $250.00 per month should be fixed as a reasonable charge for supervision while producing; that the operator should be authorized to withhold from production the proportionate share of such supervision charge attributable to each non-consenting working interest, and in addition thereto, the operator should be authorized to withhold from production the proportionate share of actual expenditures required for operating the subject well, not in excess of what are reasonable, attributable to each non-consenting working interest.

(24) That all proceeds from production from the subject well which are not disbursed for any reason should be placed in escrow to be paid to the true owner thereof upon demand and proof of ownership.

(25) That upon the failure of the operator of said pooled unit to commence drilling of the well to which said unit is dedicated on or before November 15, 1975, the order pooling said unit should become null and void and of no effect whatsoever.

IT IS THEREFORE ORDERED:

(1) That all mineral interests, whatever they may be, in the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, NMPM, Bell Lake Field, Lea County, New Mexico, are hereby pooled to form a standard 320-acre gas spacing and proration unit to be dedicated to a well to be drilled at an orthodox location for said unit.

PROVIDED HOWEVER, that the operator of said unit shall commence the drilling of said well on or before the 15th day of November, 1975, and shall thereafter continue the drilling of said well with due diligence to a depth sufficient to test the Pennsylvanian formation;

PROVIDED FURTHER, that in the event said operator does not commence the drilling of said well on or before the 15th day of November, 1975, Order (1) of this order shall be null and void and of no effect whatsoever;

PROVIDED FURTHER, that should said well not be drilled to completion, or abandonment, within 120 days after commencement thereof, said operator shall appear before the Commission and show cause why Order (1) of this order should not be rescinded.

(2) That Texas West Oil & Gas Corporation is hereby designated the operator of the subject well and unit.

(3) That after the effective date of this order and within 30 days prior to commencing said well, the operator shall furnish the Commission and each known working interest owner in the subject unit an itemized schedule of estimated well costs.

(4) That within 30 days from the date the schedule of estimated well costs is furnished to him, any non-consenting working interest owner shall have the right to pay his share of estimated well costs to the operator in lieu of paying his share of reasonable well costs out of production, and that any such owner who pays his share of estimated well costs as provided above shall remain liable for operating costs but shall not be liable for risk charges.

(5) That the operator shall furnish the Commission and each known working interest owner an itemized schedule of actual well costs within 90 days following completion of the well; that if no objection to the actual well costs is received by the Commission and the Commission has not objected within 45 days following receipt of said schedule, the actual well costs shall be the reasonable well costs; provided however, that if there is an objection to actual well costs within said 45-day period the Commission will determine reasonable well costs after public notice and hearing.

(6) That within 60 days following determination of reasonable well costs, any non-consenting working interest owner that has paid his share of estimated costs in advance as provided above shall pay to the operator his pro rata share of the amount that reasonable well costs exceed estimated well costs and shall receive from the operator his pro rata share of the amount that estimated well costs exceed reasonable well costs.

(7) That the operator is hereby authorized to withhold the following costs and charges from production:

(a) The pro rata share of reasonable well costs attributable to each non-consenting working interest owner who has not paid his share of estimated well costs within 30 days from the date the schedule of estimated well costs is furnished to him.

(b) As a charge for the risk involved in the drilling of the well, 150 percent of the pro rata share of reasonable well costs attributable to each non-consenting working interest owner who has not paid his share of estimated well costs within 30 days from the date the schedule of estimated well costs is furnished to him.

(8) That the operator shall distribute said costs and charges withheld from production to the parties who advanced the well costs.

(9) That $1600.00 per month is hereby fixed as a reasonable charge for supervision (combined fixed rates) while drilling, and that $250.00 per month is hereby fixed as a reasonable charge for supervision while producing; that the operator is hereby authorized to withhold from production the proportionate share of such supervision charge attributable to each non-consenting working interest, and in addition thereto, the operator is hereby authorized to withhold from production the proportionate share of actual expenditures required for operating such well, not in excess of what are reasonable, attributable to each non-consenting working interest.

(10) That any unsevered mineral interest shall be considered a seven-eighths (7/8) working interest and a one-eighth (1/8) royalty interest for the purpose of allocating costs and charges under the terms of this order.

(11) That any well costs or charges which are to be paid out of production shall be withheld only from the working interests share of production, and no costs or charges shall be withheld from production attributable to royalty interests.

(12) That all proceeds from production from the subject well which are not disbursed for any reason shall be placed in escrow in Lea County, New Mexico, to be paid to the true owner thereof upon demand and proof of ownership; that the operator shall notify the Commission of the name and address of said escrow agent within 90 days from the date of this order.

(13) 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

PHIL R. LUCERO, Member

JOE D. RAMEY, Member & Secretary

S E A L

dr/

OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

September 3, 1975

Re: CASE NO. 5493
ORDER NO. R-5039-A

Mr. Clarence Hinkle
Hinkle, Bondurant, Cox & Eaton
Attorneys at Law
Post Office Box 10
Roswell, New Mexico 88201

Applicant:

Texas West Oil & Gas Corp.

Dear Sir:

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

Yours very truly,

JOE D. RAMEY
Secretary-Director

JDR/fd

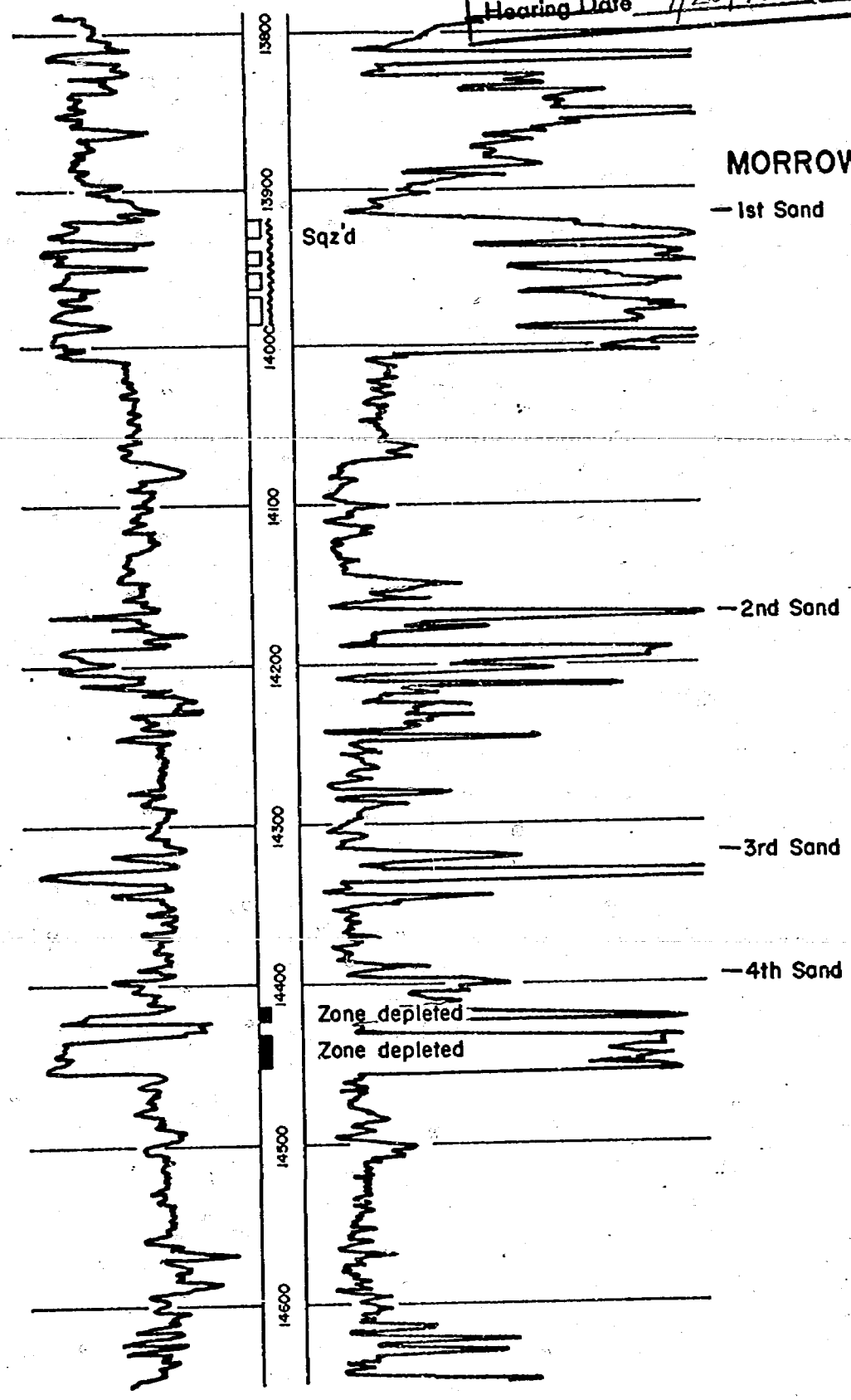
Copy of order also sent to:

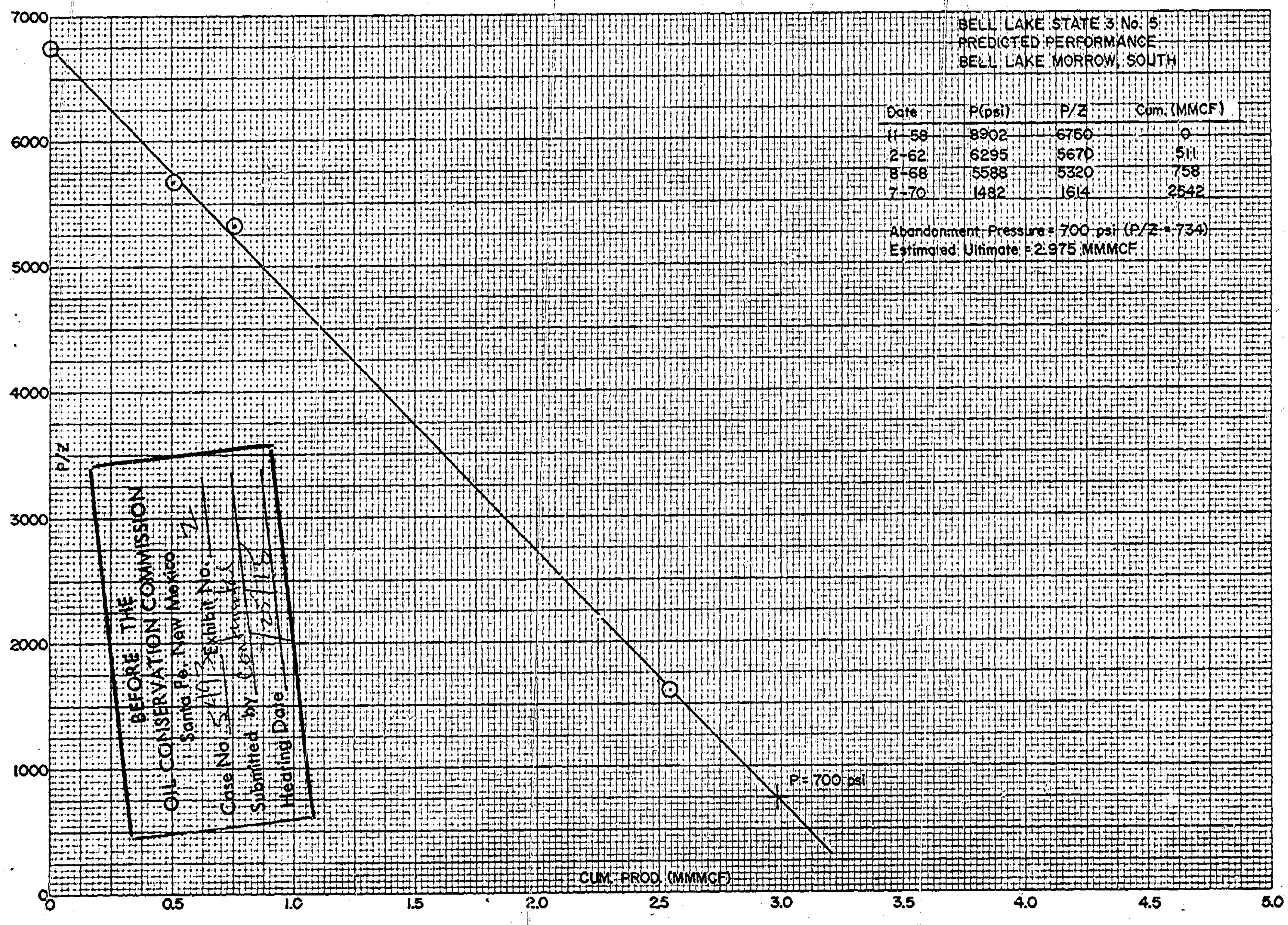
Hobbs OCC x
Artesia OCC
Aztec OCC

Other Mr. Jason Kellahin

Continental Oil
Bell Lake Unit No. 5
Unit G - Sec. 1 - 24S - 33E

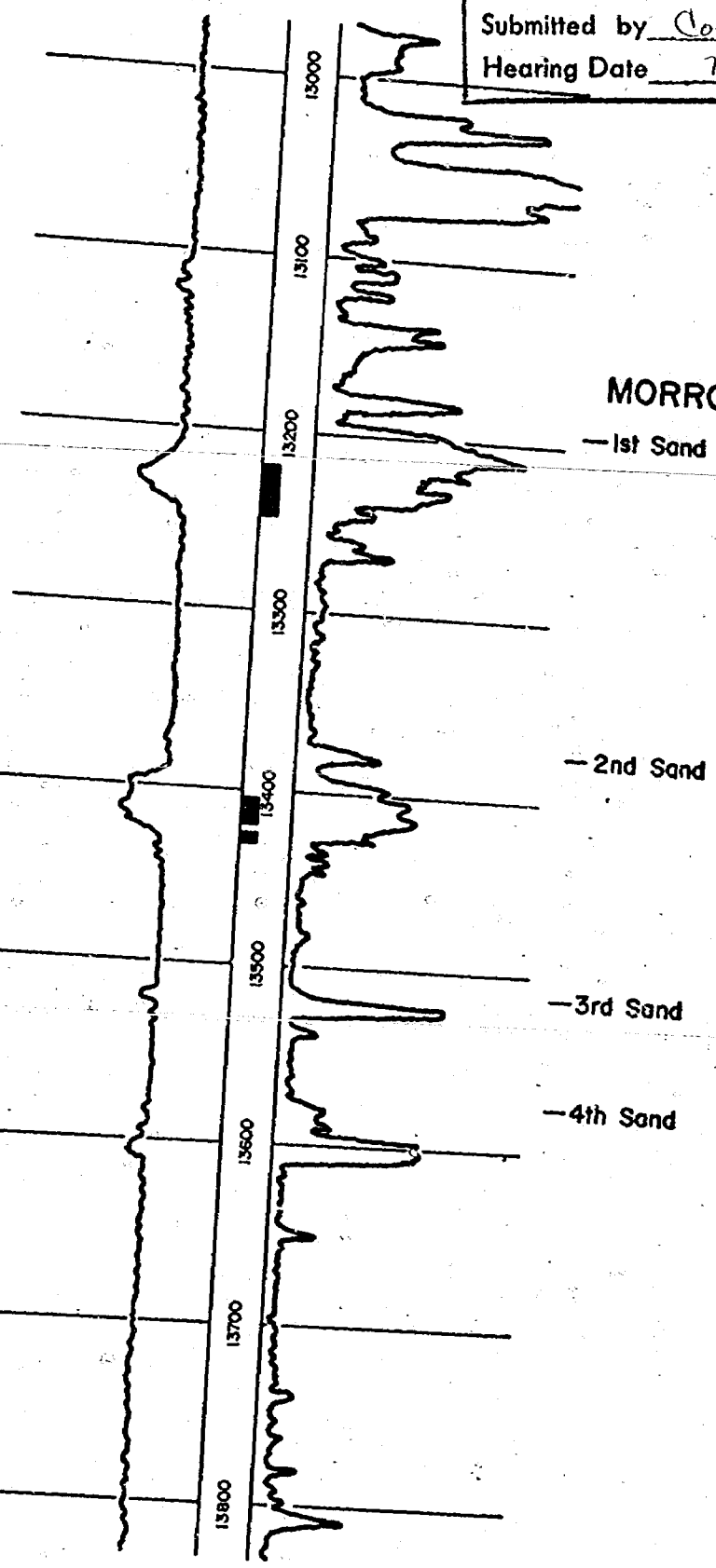
BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 6
Submitted by Continental Oil Co.
Hearing Date 7/25/75

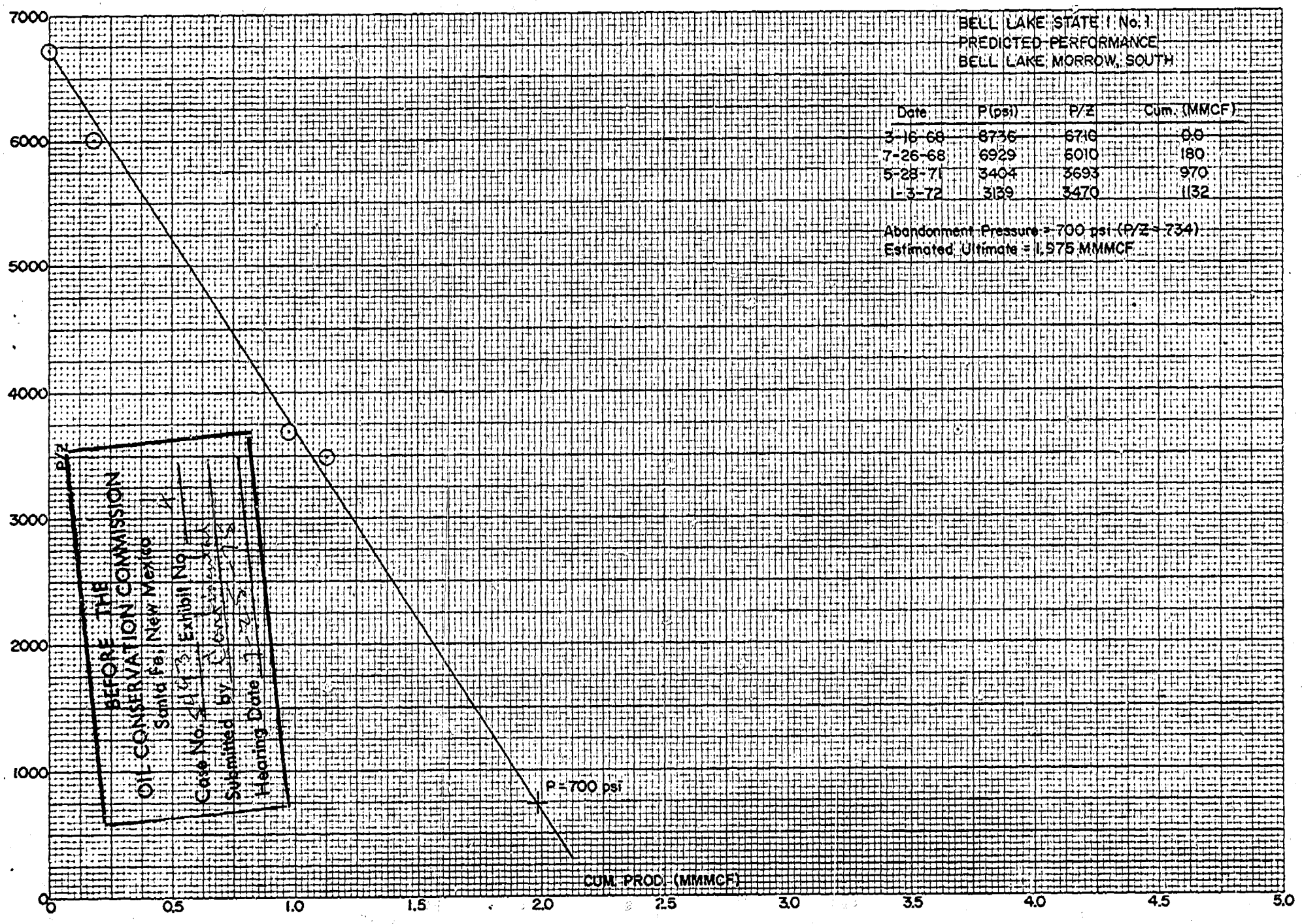




Continental Oil
Bell Lake State 1 No. 1
(formerly Bell Lake No. 1-A)
Unit O - Sec. 31-23S-34E

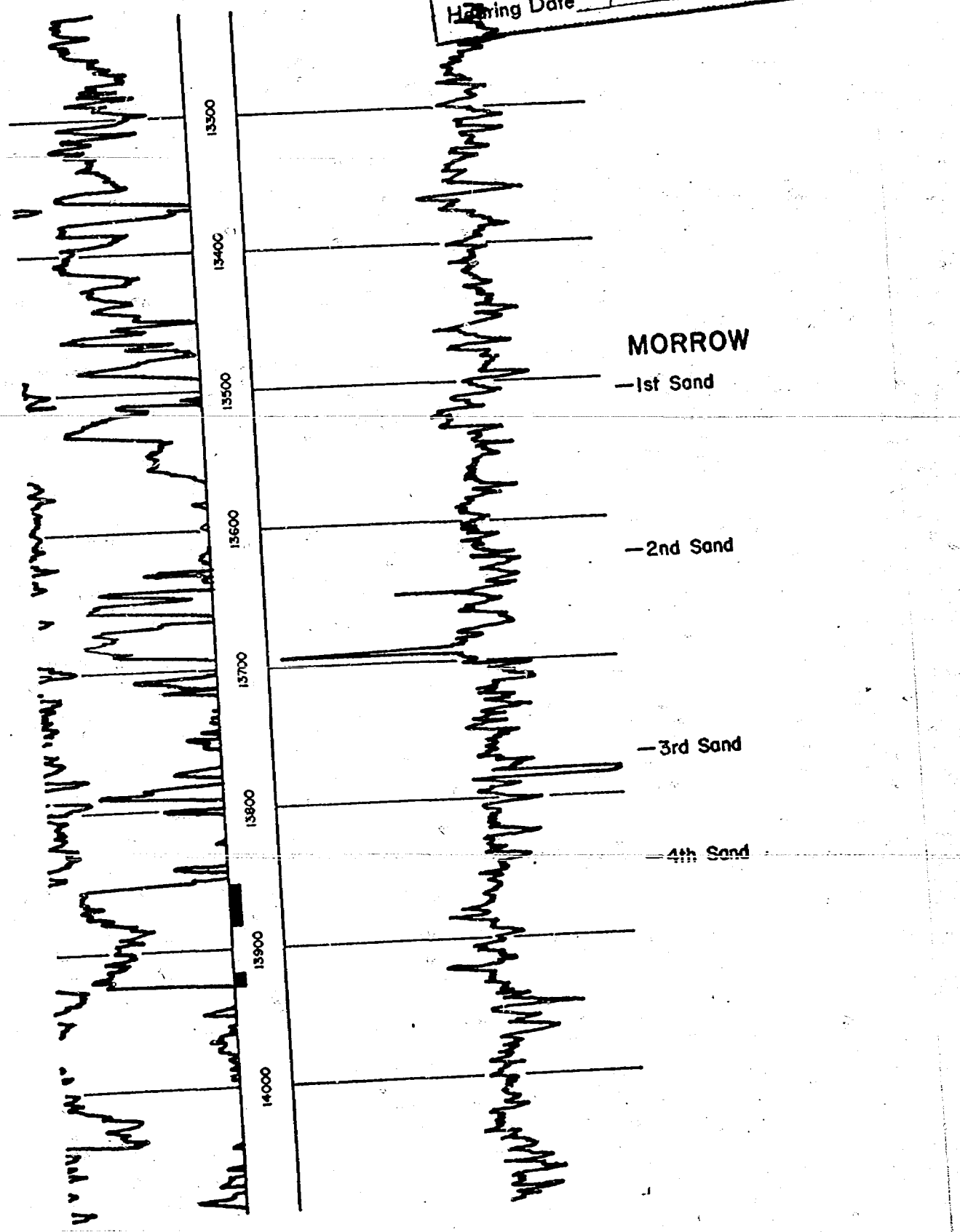
BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 3
Submitted by Continental
Hearing Date 7/25/75




BELL LAKE STATE I No. 1
PREDICTED PERFORMANCE
BELL LAKE MORROW, SOUTH
Date P(psi) P/Z Cum. (MMCF)
3-16-68 8736 6710 0.0
7-26-68 6929 6010 180
5-28-71 3404 3693 970
1-3-72 3139 3470 1132
Abandonment Pressure = 700 psi (P/Z = 734)
Estimated Ultimate = 1,975 MMMCF
P/Z
CUM. PROD. (MMMCF)
P = 700 psi
7000
6000
5000
4000
3000
2000
1000
0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 4417 Exhibit No. 3
Submitted by
Hearing Date

Continental Oil
Bell Lake Unit No. 14
Unit F - Sec. 5 - 24S - 34E

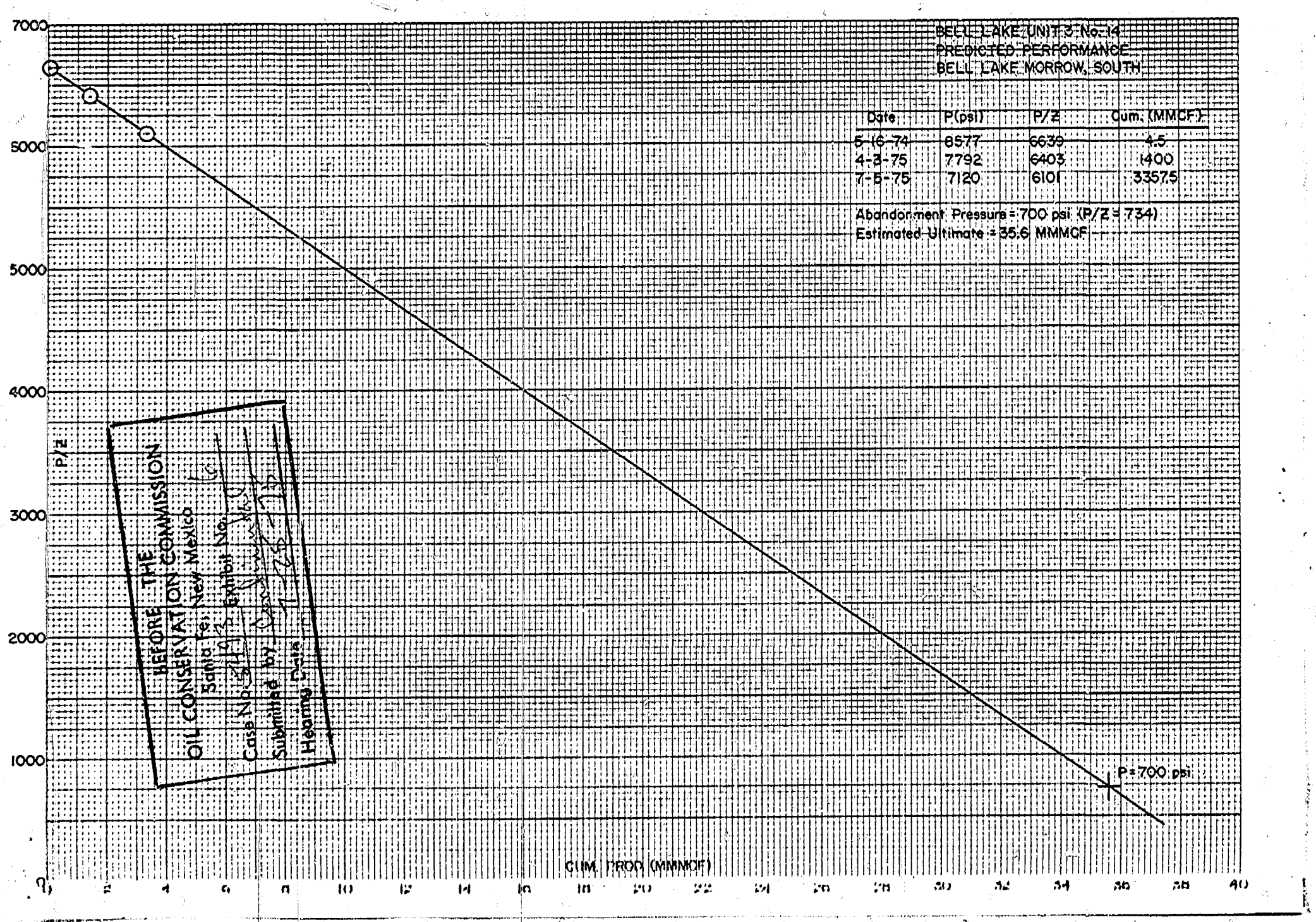
BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 5
Submitted by Continental
Hearing Date 7-25-75



BELL LAKE UNIT 3 No. 14
PREDICTED PERFORMANCE
BELL LAKE MORROW, SOUTH

Date	P(psi)	P/Z	Cum. (MMCF)
5-16-74	8577	6639	4.5
4-3-75	7792	6403	1400
7-5-75	7120	6101	3357.5

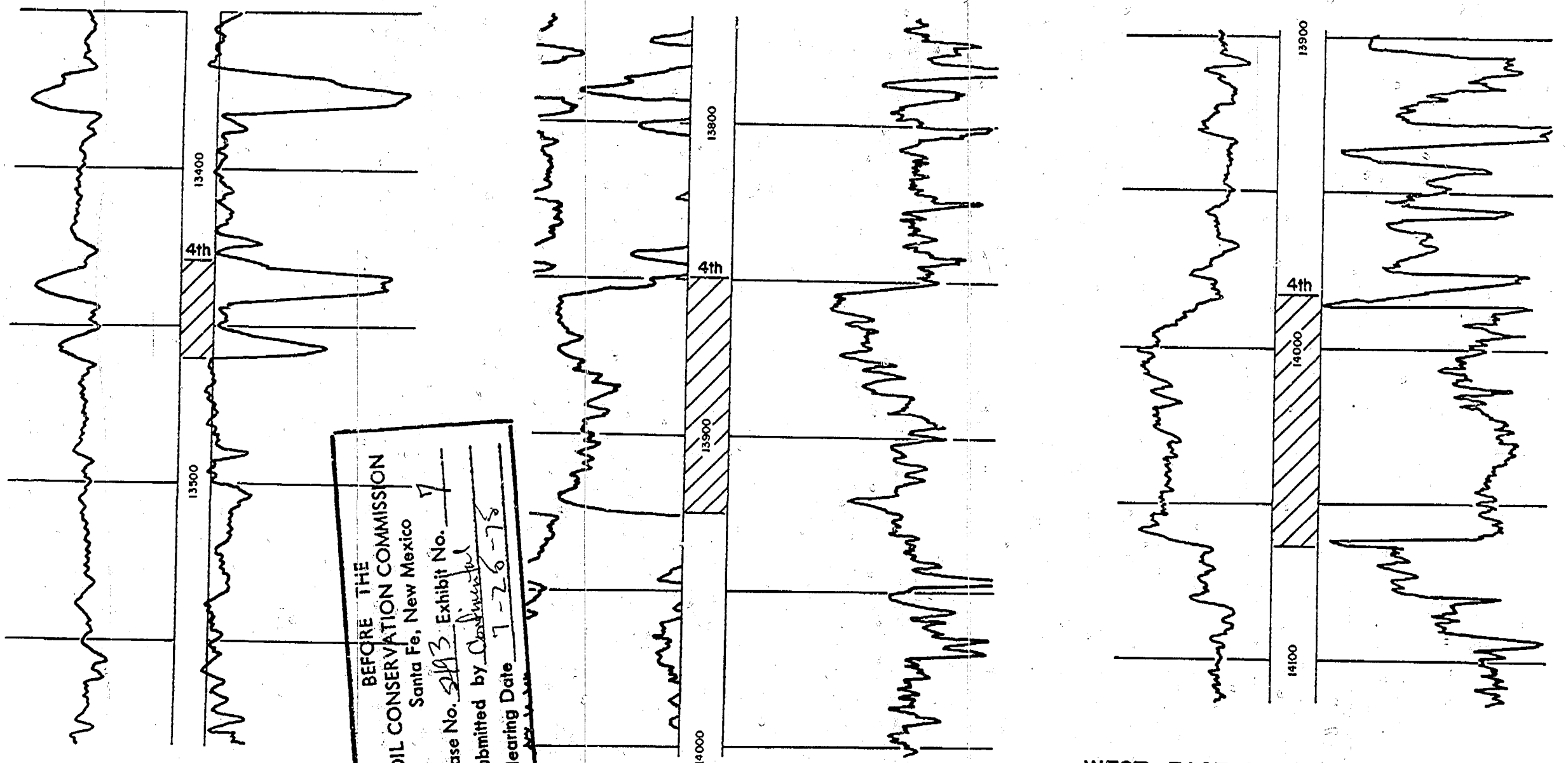
Abandonment Pressure = 700 psi (P/Z = 734)
Estimated Ultimate = 35.6 MMMCF



Continental Oil
Bell Lake Unit No. 4
F-6-24S-34E
DF 3626

Continental Oil
Bell Lake Unit No. 14
F-5-24S-34E
DF 3619

Shell Oil
Antelope Ridge Unit No. 5
L-33-23S-34E
DF 3541



WEST-EAST STRATIGRAPHIC SECTION

BELL LAKE-ANTELOPE RIDGE

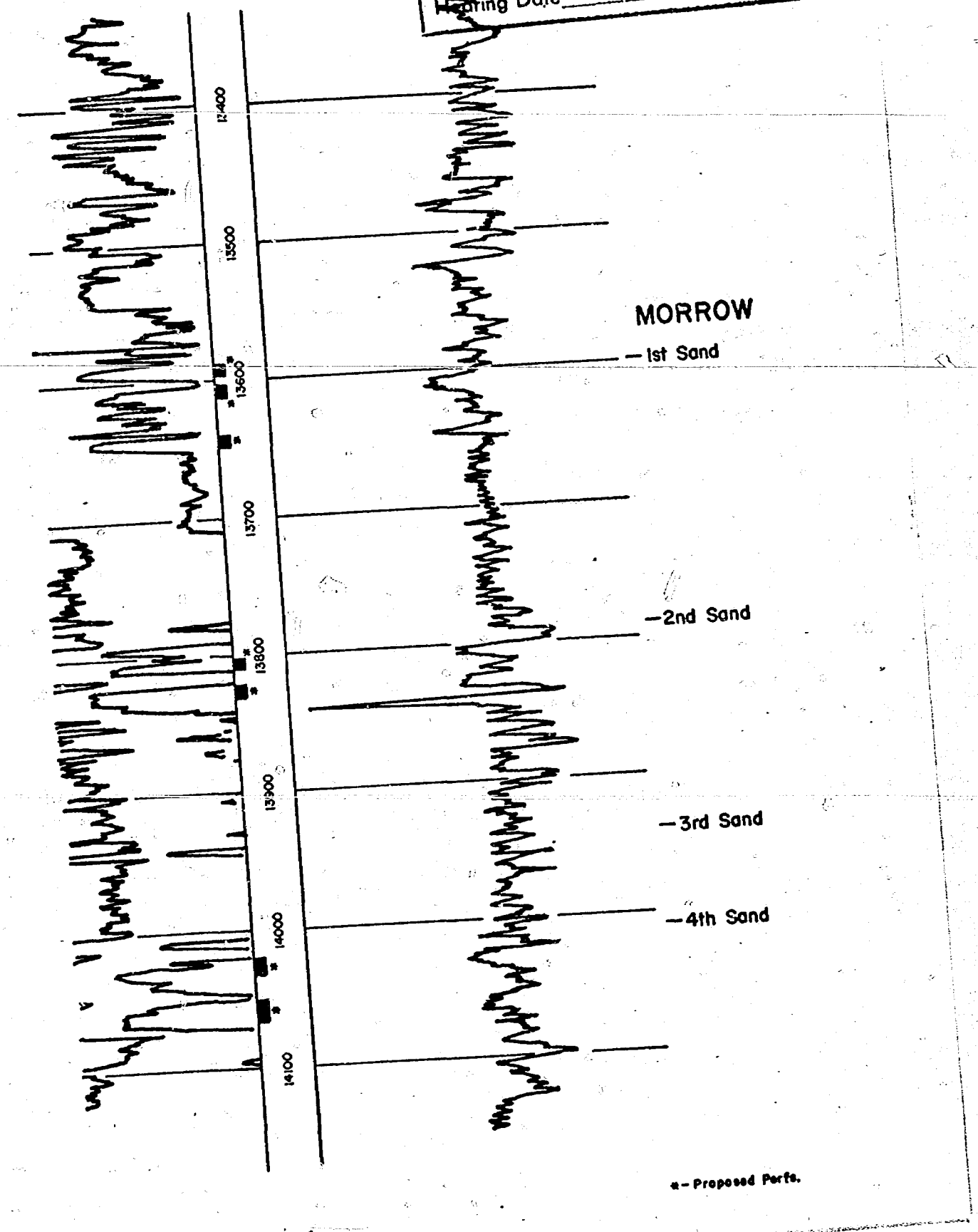
MORROW 4th SAND

JULY '75

KLT

Continental Oil
Bell Lake Unit No. 16
Unit A - Sec. 7 - 24S - 34E

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 8
Submitted by Continental
Hearing Date 7-25-75



% of Reservoir Production Allocated to Uncommitted
Interests in E/2 Sec 5 Under Forced Pooling - 1440 Acre Case

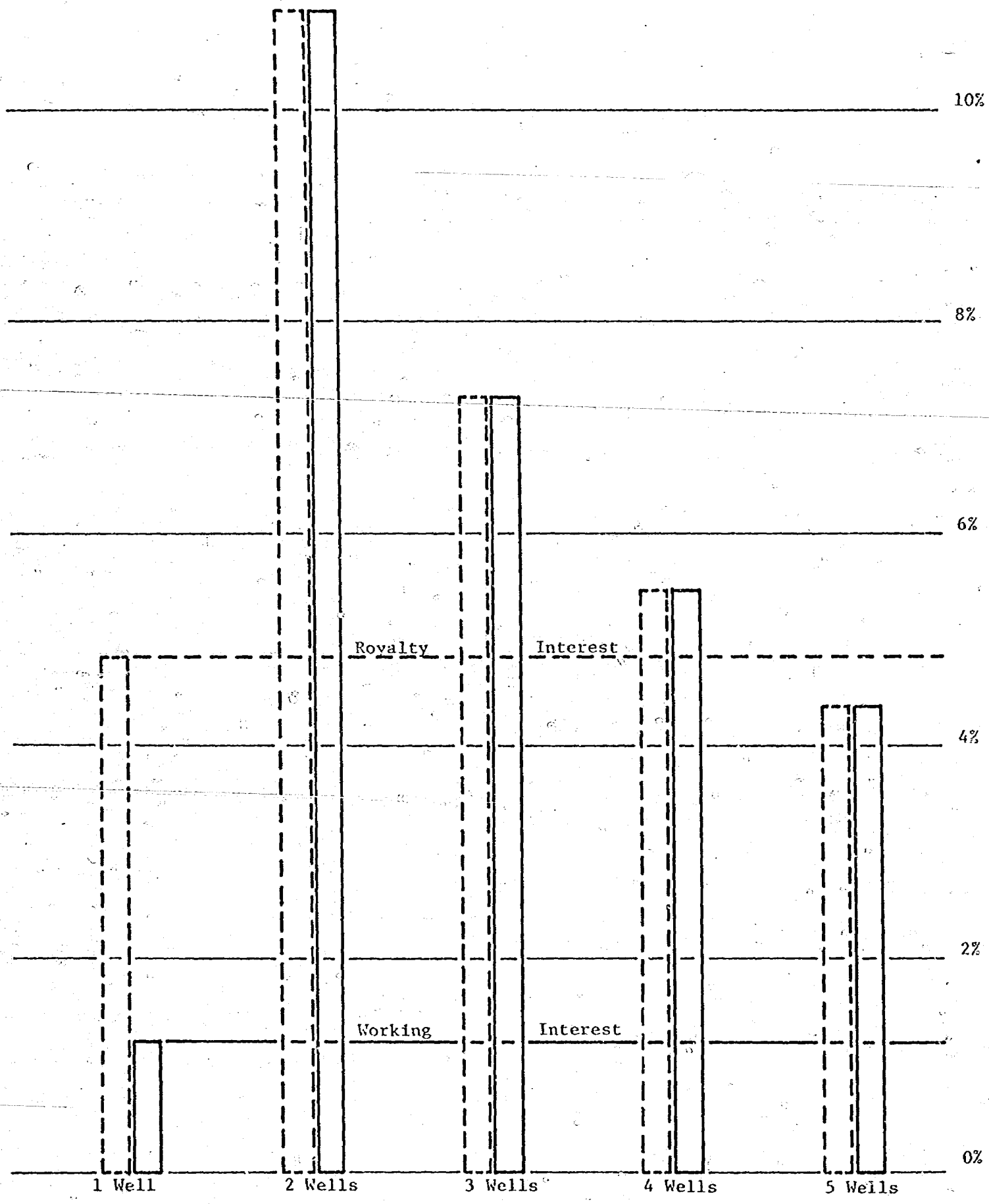


Exhibit #13
Case 5493
Continued
7-25-75

% of Reservoir Production Allocated to Uncommitted
Interests in E/2 Sec 5 Under Forced Pooling - 2560 Acre Case

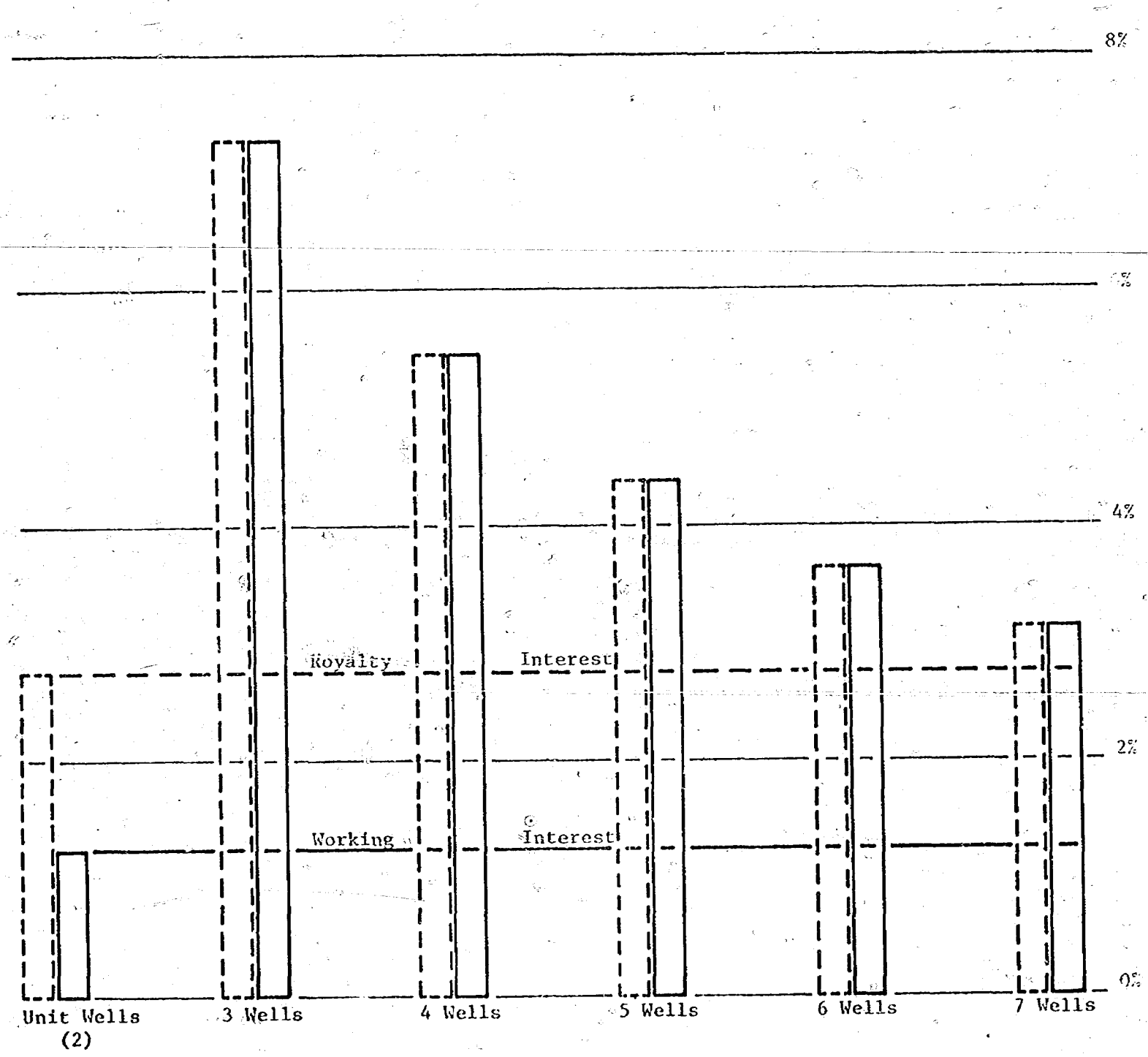
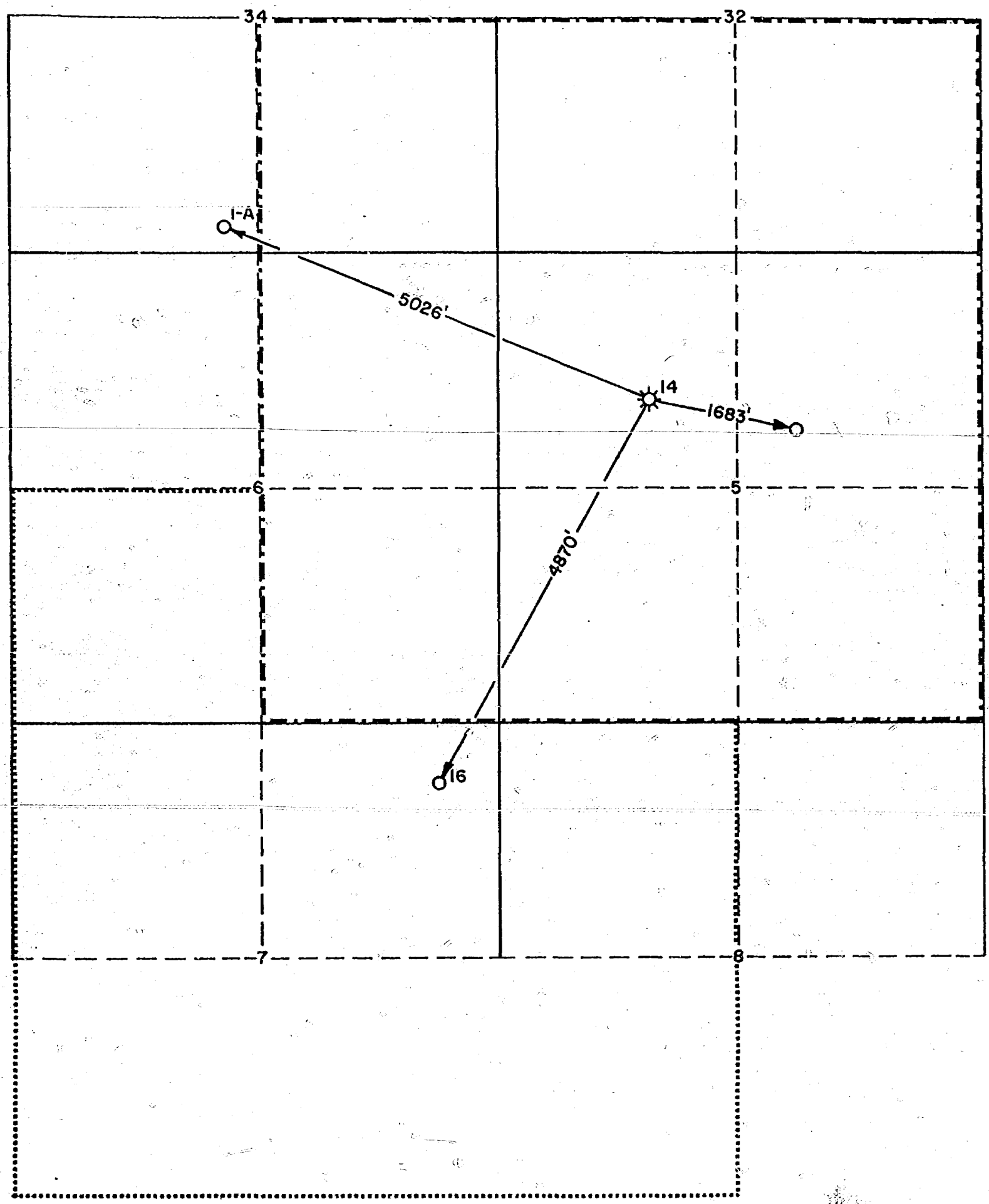


Exhibit #14
Case 54/93
Continental
7-25-75

BELL LAKE UNIT MORROW PARTICIPATING AREA



PRESENT PARTICIPATING AREA

PROBABLE EXPANSION OF P.A.

Exhibit #15
Case 5493
Continental
7-25-75

Comparison of Risk
Distance From Nearest Well

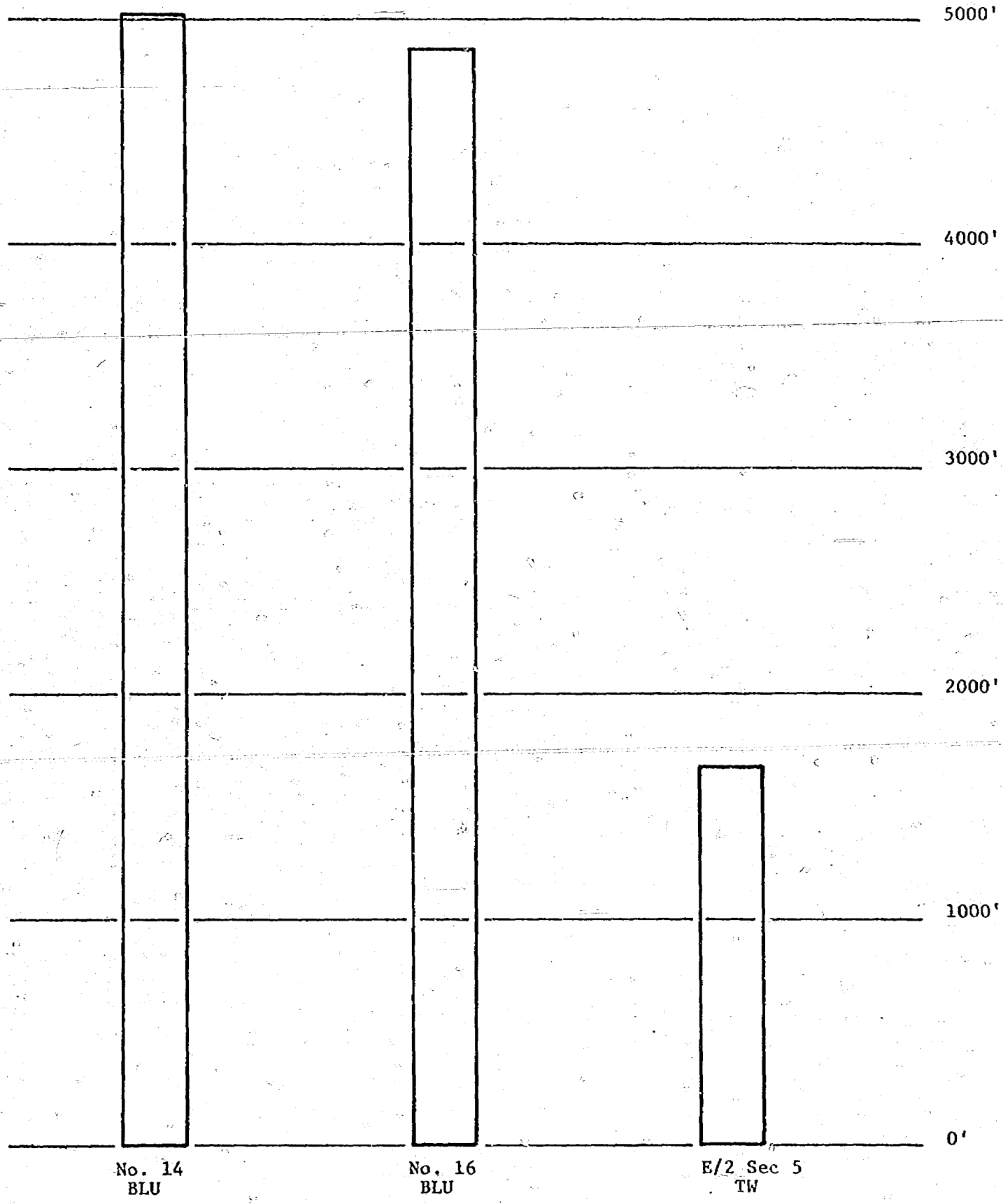


Exhibit H-16
Case 5793
Continental
7-25-75

R33E R34E

T 23 S

T 24 S

Exxon
Conoco
Conoco
Phillips
55
36
58
31
50
32
52
State
State
State
Conoco
Conoco
Tripor
Conoco 25/32
Texas West 7/32
8
Conoco
72
5
Conoco
Conoco
47
59
59
56
18
State
State
US
Buckeye, et al
Rich. & Bass
Conoco
Conoco
18
18
Conoco
21
19
25
25
US
7
8
12
Conoco
68
Madero, et al
Tripor
69
Tripor
37
Conoco
73
Carter et al
Lowe
70
Conoco
68
Madero et al
US
Ada & Phillips et al
US
Phillips et al

LEGEND

FEDERAL ACREAGE

STATE ACREAGE

FEE ACREAGE

(7) TRACT NUMBERS

Conoco

PRODUCTION DEPARTMENT HOBBS DIVISION

BELL LAKE UNIT
LEA COUNTY, NEW MEXICO
SOUTH AREA
PARTICIPATING AREA A

SCALE 0' 1000' 2000'

VTL 7-75 ERW

Exhibit #11
5293
Continental
7-25-75

PAYOUT STATUS
BELL LAKE UNIT - SOUTH AREA
AS OF MARCH 31, 1975

Conoco 100%	Well No. 1-A .6184005	Well No. 4 .6184005	Well No. 5 .6184005	Well No. 14 .7719611	Well No. 16 .7719611	South Area	Texas West Share
Revenue	76,788	2,834,246	238,974	630,189		3,780,197	
Expense Intan.	7	1,165,065	465,705	469,203		2,099,930	
Deprec. Addns.	58,142	170,276	155,821	157,202		541,441	
Retirements	(13)	239,729	1,554,666	-		1,794,382	
Operating Exp.	13,688	388,630	48,868	55,200		506,386	
Bonus Cost	-	(3,454)	10,688	-		7,234	
Payout	4,964	874,000	(1,996,774) (99,756)	(51,416)	(849,157)	(2,018,382) (99,756)	
W. I. Owners							
Revenue	124,172	4,583,188	386,439	816,348		5,910,147	72,051
Exp. Intan.	11	1,883,997	753,080	607,807		3,244,895	39,559
Depr. Addns.	94,020	275,349	251,974	203,640		824,983	10,057
Operating Exp.	22,135	628,444	79,023	71,506		801,108	9,766
Payout	8,006	1,795,398	(697,638)	(66,605)	(1,100,000) est.	(60,839)	(742)
Non-consent penalty	58,083	1,393,895	541,106	441,476	550,000 est.	2,984,560	36,385
Payout status of Non-consenting WIO	(50,077)	401,503	(1,238,744)	(508,081)	(1,650,000)	(3,045,399)	(37,127)
Estimated Income							
2nd Quarter 1975	16,000	325,000	-0-	450,000		791,000	9,643
3rd Quarter 1975	16,000	325,000	-0-	450,000		791,000	9,643
4th Quarter 1975	16,000	375,000	-0-	450,000	300,000	1,141,000	13,910

EXHIBIT #12
CASE 5493
CONTINENTAL
7-25-75

TWO&G Form 106

TEXAS WEST OIL & GAS CORPORATION
609 Midland National Bank Building
Midland, Texas 79701

AUTHORITY FOR EXPENDITURE

Date: April 23, 1975

AFE # 108

Wildcat	Development
( ) Drilling	(X) Drilling
( ) Completion	(X) Completion
	( ) Drill Deeper
	( ) Workover

Lease Name Madera | Well No. 1 | Proposed Depth 14,200'

County Lea | State New Mexico | Well Location 1980' FN & EL- Sec. 5, T-24-S, R-34-E

Spud Date _____ | Estimated Days to Drill 100 | To Complete 12

INTANGIBLE WELL COST	DRY HOLE	COMPLETED WELL
Access, Location & Roads	$	$ 15,000
Rig Move		20,000
Footage Cost		
Day Work Cost (100 days @ $2500; 12 days		278,800
Bits & Reamers @ $2400)		55,500
Fuel		
Water		8,000
Mud & Chemicals		62,000
Cementing & Services		45,000
Coring		
Surveying & Testing		20,000
Mud Logging		5,000
Perforating		5,500
Stimulation		7,500
Transportation		10,000
Drilling Overhead Cost		5,500
Other Drilling Expense		15,000
Contingencies		15,000
_____		
Total Intangible Well Cost	$	$ 567,800

TANGIBLE WELL COSTS				
30 ' of 30 " Conductor Csg.	$	$ 450
500 ' of 16 " Surface Casing		9,200
5,200 ' of 10-3/4 " Intermediate Csg.		69,000
12,000 ' of 7-5/8 " Intermediate Csg.		144,000
' of " Production Casing		
2,600 ' of 5 " Liner		18,500
13,800 ' of 2-7/8 " Tubing		55,200
Liner Equipment		2,500
Wellhead Equipment		24,000
Producing Facilities, Tank Batteries, Flowlines		35,000
Packers & Other Subsurface Tools		7,500
Contingencies		10,000
_____		
Total Tangible Well Costs	$	$ 375,350
TOTAL WELL COST	$	$ 943,150

Acreage Cost $ _____

Geological (Acquisition) Cost _____

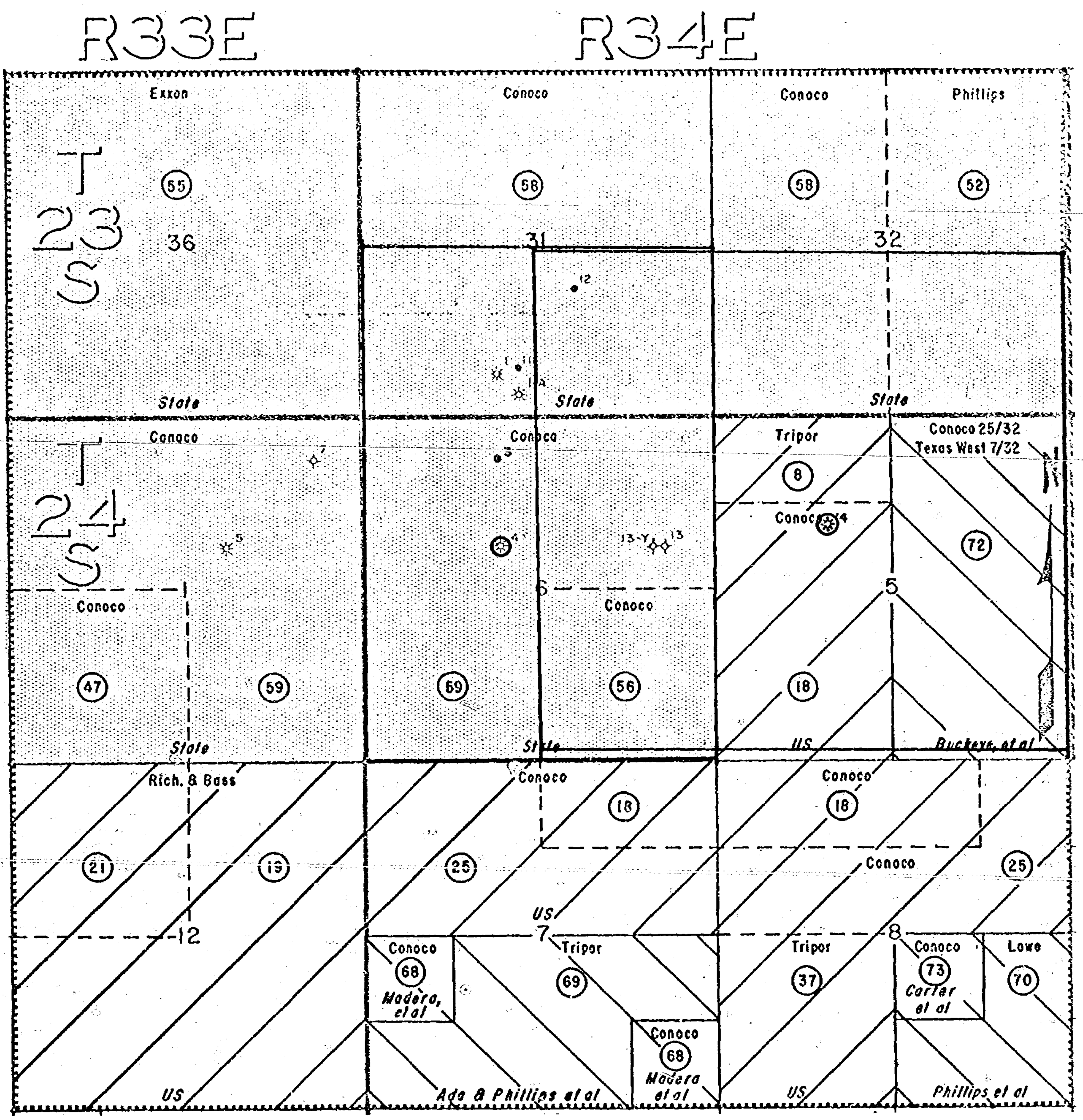
TOTAL WELL COST + ACREAGE & GEOLOGICAL COSTS $ _____ | $ 943,150.

APPROVED BY: _____

COMPANY: _____

DATE: _____

Exh #4



LEGEND

- FEDERAL ACREAGE
- STATE ACREAGE
- FEE ACREAGE
- (7) TRACT NUMBERS

#12

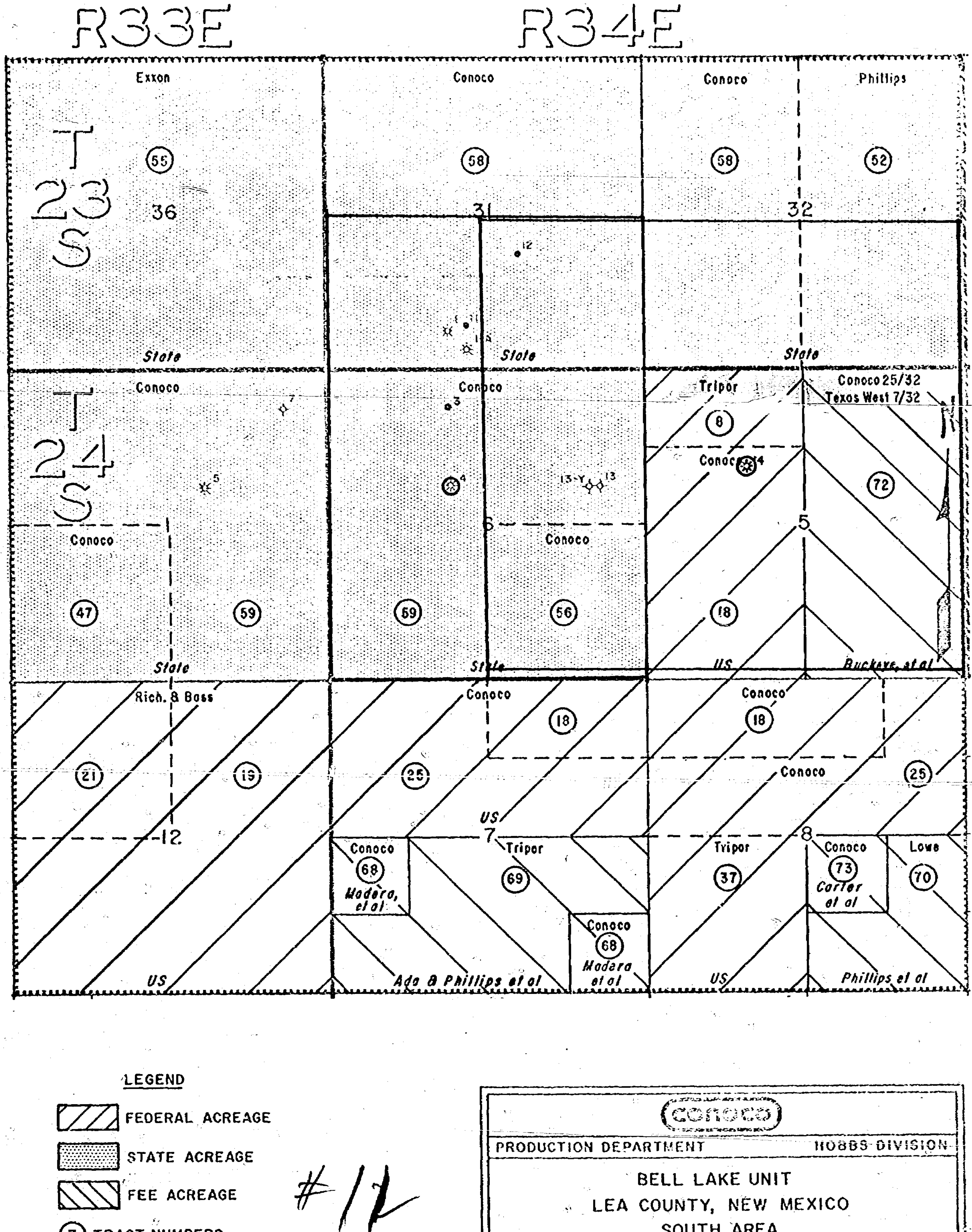
CONOCO

PRODUCTION DEPARTMENT — HOBBS DIVISION

BELL LAKE UNIT
LEA COUNTY, NEW MEXICO
SOUTH AREA
PARTICIPATING AREA A

SCALE 0' 1000' 2000'

VTL 7-75 ERW



LEGEND

FEDERAL ACREAGE

STATE ACREAGE

FEE ACREAGE

(7) TRACT NUMBERS

#12

CONOCO

PRODUCTION DEPARTMENT — HOBBS DIVISION

BELL LAKE UNIT
LEA COUNTY, NEW MEXICO
SOUTH AREA
PARTICIPATING AREA A

SCALE
0' 1000' 2000'

VTL 7-75 — ERW

TEXAS WEST OIL & GAS CORPORATION

609 C & K PETROLEUM BUILDING
MIDLAND, TEXAS 79701

L. N. DUNNAVANT, *President*

(915) 684-5836

DISTRICT OFFICE:
Lafayette, Louisiana 70501
F. L. Dischler, Manager
Oil Center Station, Box 52332
(318) 232-8387

Case 5493

4 May 1976

New Mexico Oil Conservation Commission
P.O. Box 2088
Santa Fe, New Mexico 87501

Re: Texas West Oil & Gas Corporation's
MADERA #1
Bell Lake South (Morrow) Field
Section 5, T-24-S, R-34-E,
Lea County, New Mexico

Attention: Joe D. Ramey
Member and Secretary

Gentlemen:

Relevant to completion of subject well and NMOCC Order No. 5039-B, transmitted herewith are copies of the following:

1. Form C-104
2. Form C-105
3. Form C-122
4. Form C-122-E
5. Back Pressure Curve
6. Form W-12 Inclination Report

Yours very truly,

TEXAS WEST OIL & GAS CORPORATION

Alice Sandell
Office Manager

AS:kw

Attachments

DISTRIBUTION		
SANTA FE		
FILE		
U.S.G.S.		
LAND OFFICE		
TRANSPORTER	OIL	
	GAS	
OPERATOR		
PRORATION OFFICE		

NEW MEXICO OIL CONSERVATION COMMISSION
REQUEST FOR ALLOWABLE
AND
AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

Form C-104
Supersedes Old C-104 and C-1
Effective 1-1-65

MAY - 6 1976
OIL CONSERVATION COMM.
Santa Fe

I.

Operator
Texas West Oil & Gas Corporation

Address
609 C&K Petroleum Building — Midland, Texas 79701

Reason(s) for filing *(Check proper box)*

New Well	X	Change in Transporter of:			
Recompletion		Oil		Dry Gas	
Change in Ownership		Casinghead Gas		Condensate	

Other *(Please explain)*

If change of ownership give name and address of previous owner —

II. DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease	Lease No.
Madera	1	Bell Lake South (Morrow)	State, Federal or Fee Fee	

Location
Unit Letter G ; 1980 Feet From The North Line and 1980 Feet From The East

Line of Section 5 Township 24S Range 34E , NMPM, Lea County

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil ☐ or Condensate ☒	Address *(Give address to which approved copy of this form is to be sent)*
The Permian Corporation	P.O. Box 1183, Houston, Texas 77001
Name of Authorized Transporter of Casinghead Gas ☐ or Dry Gas ☒	Address *(Give address to which approved copy of this form is to be sent)*
Transwestern Pipeline Company	P.O. Box 2521, Houston, Texas 77001

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When
	G	5	24S	34E	Yes	4/19/76

If this production is commingled with that from any other lease or pool, give commingling order number: N/A

IV. COMPLETION DATA

Designate Type of Completion – (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Res'v.	Diff. Res'v.
		X	X					

Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
10-16-75	4-20-76	14,296'	14,249'
Elevations *(DF, RKB, RT, GR, etc.)*	**Name of Producing Formation**	**Top Oil/Gas Pay**	**Tubing Depth**
3586.4' GR	Morrow	13,963'	11,596'
Perforations			**Depth Casing Shoe**
13,963-982'			

2-7/8" tbg @ 11,596'

TUBING, CASING, AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT
20"	16"	515'	900
14-3/4"	10-3/4"	5,200'	4825
9-1/2"	7-5/8"	11,990'	1600
6-1/2"	5"	14,294'	550

V. TEST DATA AND REQUEST FOR ALLOWABLE *(Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours)*

OIL WELL

Date First New Oil Run To Tanks	Date of Test	Producing Method *(Flow, pump, gas lift, etc.)*	
Length of Test	**Tubing Pressure**	**Casing Pressure**	**Choke Size**
Actual Prod. During Test	**Oil-Bbls.**	**Water-Bbls.**	**Gas-MCF**

GAS WELL

Actual Prod. Test-MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
7916	24 hours	trace	-
Testing Method *(pitot, back pr.)*	**Tubing Pressure (Shut-in)**	**Casing Pressure (Shut-in)**	**Choke Size**
Back Pressure	4500#	Pkr.	20/64"

VI. CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Commission have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

W. D. Drummond
(Signature)

President
(Title)

30 April 1976
(Date)

OIL CONSERVATION COMMISSION

APPROVED _____, 19____

BY _____

TITLE _____

This form is to be filed in compliance with RULE 1104.

If this is a request for allowable for a newly drilled or deepened well, this form must be accompanied by a tabulation of the deviation tests taken on the well in accordance with RULE 111.

All sections of this form must be filled out completely for allowable on new and recompleted wells.

Fill out only Sections I, II, III, and VI for changes of owner, well name or number, or transporter, or other such change of condition.

Separate Forms C-104 must be filed for each pool in multiply completed wells.

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Commission not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 30 through 34 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico				Northwestern New Mexico			
T. Anhy		T. Canyon		T. Ojo Alamo		T. Penn. "B"	
T. Salt		T. Strawn	12,490'	T. Kirtland-Fruitland		T. Penn. "C"	
B. Salt		T. Atoka	Lime: 12,720'	T. Pictured Cliffs		T. Penn. "D"	
T. Yates		T. Miss	11,982'	T. Cliff House		T. Leadville	
T. 7 Rivers		T. Devonian		T. Menefee		T. Madison	
T. Queen		T. Silurian		T. Point Lookout		T. Elbert	
T. Grayburg		T. Montoya		T. Mancos		T. McCracken	
T. San Andres		T. Simpson		T. Gallup		T. Ignacio Qtzte	
T. Glorieta		T. McKee		Base Greenhorn		T. Granite	
T. Paddock		T. Ellenburger		T. Dakota		T.	
T. Blinebry		T. Gr. Wash		T. Morrison		T.	
T. Tubb		T. Granite		T. Todilto		T.	
T. Drinkard		T. Delaware Sand		T. Entrada		T.	
T. Abo		T. Bone Springs		T. Wingate		T.	
T. Wolfcamp		T.	Morrow: 13,425'	T. Chinle		T.	
T. Penn.		T.		T. Permian		T.	
T Cisco (Bough C)		T.		T. Penn. "A"		T.	

FORMATION RECORD (Attach additional sheets if necessary)

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation
0	1475	1475	Red Bed & Anhydrite	13,810	13,964	154	Shale, Lime & Sand
1475	2246	771	Anhydrite, Red Bed & Salt	13,964	13,980	16	Shale
2246	4370	2124	Anhydrite & Salt	13,980	13,990	10	Sand & Shale
4370	5147	777	Anhydrite	13,990	14,135	145	Sand
5147	5200	53	Anhydrite & Lime	14,135	14,217	82	Shale & Lime
5200	6160	960	Lime	14,217	14,296	79	Sand & Shale
6160	11,410	5250	Lime & Shale				
11,410	12,041	631	Lime				
12,041	12,185	144	Shale				
12,185	12,286	101	Lime & Shale				
12,286	12,346	60	Lime				
12,346	12,572	226	Lime & Shale				
12,572	12,951	379	Lime				
12,951	13,430	479	Lime & Shale				
13,430	13,752	322	Sand, Lime & Shale				
13,752	13,810	58	Shale & Lime				

NO. OF COPIES RECEIVED		
DISTRIBUTION		
SANTA FE		
FILE		
U.S.G.S.		
LAND OFFICE		
OPERATOR		

Form C-105
Revised 1-1-65

NEW MEXICO OIL CONSERVATION COMMISSION
WELL COMPLETION OR RECOMPLETION REPORT AND LOG

RECEIVED
MAY - 6 1976
OIL CONSERVATION COMM.
Santa Fe

5a. Indicate Type of Lease: State ☐ Fee ☒
5. State Oil & Gas Lease No.

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☒ DRY ☐ OTHER
b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEPEN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ OTHER

7. Unit Agreement Name

8. Farm or Lease Name: Madera

2. Name of Operator: Texas West Oil & Gas Corporation

9. Well No.: 1

3. Address of Operator: 609 C&K Petroleum Building

10. Field and Pool, or Wildcat: Bell Lake South, (Morrow)

4. Location of Well

UNIT LETTER G LOCATED 1980 FEET FROM THE North LINE AND 1980 FEET FROM THE East LINE OF SEC. 5 TWP. 24S RGE. 34E NMPM

12. County: Lea

15. Date Spudded	16. Date T.D. Reached	17. Date Compl. (Ready to Prod.)	18. Elevations (DF, RKB, RT, GR, etc.)	19. Elev. Cashinghead
10-16-75	2-07-76	4-27-76	3586.4' GR	

20. Total Depth	21. Plug Back T.D.	22. If Multiple Compl., How Many	23. Intervals Drilled By	Rotary Tools	Cable Tools
14,296'	14,249'	--	→	0-TD	

24. Producing Interval(s), of this completion — Top, Bottom, Name: 13,963-982' (Morrow)

25. Was Directional Survey Made: No

26. Type Electric and Other Logs Run: Compensated Neutron, Formation Density, Dual Induction Lateralog

27. Was Well Cored: No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
16"	65#	515'	20"	900 sx - circ surf.	
10-3/4"	51#	5200'	14-3/4"	4825 sx.	
7-5/8"	26.40,29.70#	11,990'	9-1/2"	1600 sx	

29. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN
5"	11,592'	14,294'	550	

30. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2-7/8"	11,596'	11,588'

31. Perforation Record (Interval, size and number)
13,963-982' w/2 (.32") jet shots/ft.

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
13,963-982'	200 gals Morrow Acid

33. PRODUCTION

Date First Production	Production Method (Flowing, gas lift, pumping — Size and type pump)	Well Status (Prod. or Shut-in)
4-27-76	Flow	Prod.

Date of Test	Hours Tested	Choke Size	Prod'n. For Test Period →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Gas — Oil Ratio
4-26-76	24	20/64"		Trace	7916	66	-

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Oil Gravity — API (Corr.)
2415#	Pkr		Trace	7916	66	

34. Disposition of Gas (Sold, used for fuel, vented, etc.): Sold

Test Witnessed By

35. List of Attachments

36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.

SIGNED [signature] TITLE President DATE 4/30/76

NEW MEXICO OIL CONSERVATION COMMSSION

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

RECEIVED
MAY - 6 1976
OIL CONSERVATION COMM.
Santa Fe

Type Test: [X] Initial [ ] Annual [ ] Special				Test Date: 4-26-76	
Company: Texas West Oil & Gas Corporation			Connection: Transwestern Pipeline Company		Unit
Pool: Bell Lake South, (Morrow)			Formation: Morrow		
Completion Date: 4-27-76	Total Depth: 14,296'		Plug Back TD: 14,249'	Elevation: 3612.4	Farm or Lease Name: Madera
Csg. Size: 5.00" / Wt.: 18.00# / d: 4.276" / Set At: 14,294'			Perforations: From 13,963 To 13,982		Well No.: 1
Tbg. Size: 2.875 EUE / Wt.: 6.50# / d: 2.441" / Set At: 11,596'			Perforations: From Open Ended To		Unit: G / Sec.: 5 / Twp.: 24S / Rge.: 34E
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single Completion			Packer Set At: 11,596'		County: Lea
Producing Thru: Tubing 2-7/8	Reservoir Temp. °F: 180 @ 13,973	Mean Annual Temp. °F: 60	Baro. Press. – P_a: 13.2		State: New Mexico

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
13973	13973	0.572	0.49	0.23	0.00		X	Flange

NO.	FLOW DATA: Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	TUBING DATA: Press. p.s.i.g.	Temp. °F	CASING DATA: Press. p.s.i.g.	Temp. °F	Duration of Flow
SI							4455	72			
1.	4.00		2.00	570	70.00"	48	1695	70			1.00 hr
2.	4.00		2.00	570	75.00"	66	1700	75			1.00 hr
3.	4.00		2.00	585	78.00"	72	1815	78			2.50 hr
4.	4.00		2.00	600	80.00"	72	1950	80			2.00 hr
5.	4.00		2.00	420	69.00"	72	2415	69			1.50 hr

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	23.18	202.049	583.20	1.0117	1.3222	1.0500	6579
2.	23.18	209.141	583.20	0.9943	1.3222	1.0440	6654
3.	23.18	216.008	598.20	0.9887	1.3222	1.0430	6827
4.	23.18	221.486	613.20	0.9887	1.3222	1.0040	6738
5.	23.18	172.890	433.20	0.9887	1.3222	1.0310	5401

NO.	P_t	Temp. °R	T_r	Z
1.	0.87	508	1.47	0.903
2.	0.87	526	1.52	0.914
3.	0.89	532	1.54	0.912
4.	0.91	532	1.54	0.910
5.	0.64	532	1.54	0.935

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons None Produced Deg.
Specific Gravity Separator Gas 0.572 XXXXXXXXX
Specific Gravity Flowing Fluid XXXXX 0.572
Critical Pressure 672 P.S.I.A. 672 P.S.I.A.
Critical Temperature 346 R 346 R

P_c 4468.2 P_c^2 19965

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		1841.3	3390	16575
2		1853.2	3434	16530
3		1964.9	3861	16104
4		2084.4	4345	15620
5		2518.4	6342	13622

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.46558$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.4656$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 7916$

Absolute Open Flow 7916 Mcfd @ 15.025 Angle of Slope θ 45.00 Slope, n 1.000

Remarks: _____

Approved By Commission:	Conducted By:	Calculated By:	Checked By:
	Tom Hansen Company	Whitey Harrington	L. N. Dunnavant

(SUBSURFACE) (P_f & P_s)

WORK SHEET FOR STEPWISE CALCULATION PRESSURE

XXXXXXXXX (P_c & P_w)

Form C-122-E

(Page 1 of 10)

RATE NO.1

COMPANY Texas West Oil & Gas Company LEASE Madera WELL NO. 1 DATE 4-26-76

LOCATION: UNIT SECTION 5 TOWNSHIP 24-S RANGE 34-E

L 13973 H 13973 L/H 1.00 G 0.572 % CO_2 0.49 % N_2 0.23 % H_2S 0.00

d 2.441 F_r 0.010763 Q_m 6.579 M^2cfd (L/H) $(F_rQ_M)^2$ 0.005014 P_{cr} 672 T_{cr} 346

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		0	6987		13973						
2	GH		0	3996		7993						
3	37.5GH		0	149860		299721						
4	P_c or P_n		1708.2	2101.2	2106.2	2504.2	2513.2					
5	P_r		2.54	3.13	3.13	3.73	3.74					
6	T		530	585	585	640	640					
7	T_r		1.53	1.69	1.69	1.85	1.85					
8	Z		0.808	0.858	0.858	0.903	0.903					
9	P/Z P/Z	$\overline{4} \div \overline{8}$	2115.42	2448.95	2454.78	2773.20	2783.17					
10	P/TZ	$\overline{9} \div \overline{5}$	3.9914	4.1862	4.1962	4.3331	4.3487					
11	$(P/TZ)^2/1000$	$(10^2/1000$	0.015931	0.017525	0.017608	0.018776	0.018911					
12	$L/H(F_rQ_m)^2$		0.005014	0.005014	0.005014	0.005014	0.005014					
13		$\overline{11} + \overline{12}$	0.020945	0.022539	0.022622	0.023790	0.023925					
14	I_n	$\overline{10} \div \overline{13}$	190.564	185.736	185.491	182.141	181.762					
15	$M=P_n - P_{n-1}$			393	398	398	407	408				
16	$N=I_n + I_{n-1}$			376.300	376.055	367.632	367.253					
17	M x N	$\overline{15} \times \overline{16}$			149670		149472					
18	$\sum$(M x N)	$\sum \overline{17}$			149670		299142					

$$\text{Delta P} = \frac{3[299721]}{190.564 + 4[185.491] + 181.762} = \frac{899163}{1114.290} = 806.9$$

P = 1708.2 + 806.9 = 2515.1

WORK SHEET FOR STEPWISE CALCULATION (SURFACE) PRESSURE (P_f & P_s) (P_c & P_w)

Form C-122-E

(PAGE 2)

RATE NO. 1

COMPANY Texas West Oil & Gas Company LEASE Madera WELL NO. 1 DATE 4-26-76

LOCATION: UNIT SECTION 5 TOWNSHIP 24-S RANGE 34-E

L 13973 H 13973 L/H 1.00 G 0.572 % CO_2 0.49 % N_2 0.23 % H_2S 0.00

d F_r Q_m M^2cfd (L/H) $(F_rQ_M)^2$ P_{cr} 672 T_{cr} 346

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		13973	6987								
2	GH		7993	3996	0							
3	37.5GH		299721	149860	0							
					0							
4	P_c or P_n		2515.1	2189.0	2230.4	2196.6	2199.3					
5	P_r		3.74	3.26	3.32	3.27	3.27					
6	T		640	585	530	530	530					
7	T_r		1.85	1.69	1.53	1.53	1.53					
8	Z		0.903	0.856	0.786	0.787	0.787					
9	P/Z P/Z	$\overline{4} \div \overline{8}$	2785.27	2557.25	2837.33	2790.78	2794.19					
10	P/TZ	$\overline{9} \div \overline{6}$	4.3520	4.3714	5.3535	5.2656	5.2721					
11	$(P/TZ)^2/1000$	$(10^2/1000$										
12	$L/H(F_rQ_m)^2$											
13		$\overline{11} + \overline{12}$										
14	I_n	$\overline{10} \div \overline{13}$	229.780	228.761	186.795	189.911	189.679					
15	$M=P_n - P_n - 1$			326	327	361	358	358				
16	$N=1_n + 1_{n-1}$			458.542	415.557	418.673	418.441					
17	M x N	$\overline{15} \times \overline{16}$		149811			149802					
18	$\sum$ (M x N)	$\sum \overline{17}$		149811			299613					

$$\text{Delta P} = \frac{3[\ 299721\ ]}{229.780 + 4[\ 228.761\ ] + 189.679} = \frac{899163}{1334.503} = 673.8$$

P = 2515.1 − 673.8 = 1841.3

WORK SHEET FOR STEPWISE CALCULATION (SUBSURFACE) PRESSURE (P_f & P_s) Form C-122-E

(XXXXXXXX) (P_c & P_w) (PAGE 3)

RATE NO. 2

COMPANY Texas West Oil & Gas Company LEASE Madera WELL NO. 1 DATE 4-26-76

LOCATION: UNIT SECTION 5 TOWNSHIP 24-S RANGE 34-E

L 13973 H 13973 L/H 1.00 G 0.572 % CO_2 0.49 % N_2 0.23 % H_2S 0.00

d 2.441 P_r 0.010763 Q_m 6.674 M^2cfd (L/H) $(F_rQ_M)^2$ 0.005160 P_{cr} 672 T_{cr} 346

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		0	6987		13973						
2	GH		0	3996		7993						
3	37.5GH		0	149860		299721						
4	P_c or P_n		1713.2	2105.2	2111.2	2509.2	2520.2					
5	P_r		2.55	3.13	3.14	3.73	3.75					
6	T		535	588	588	640	640					
7	T_r		1.55	1.70	1.70	1.85	1.85					
8	Z		0.816	0.862	0.862	0.903	0.903					
9	P/Z P/Z	$\overline{4} \div \overline{8}$	2099.51	2442.23	2449.19	2778.74	2790.92					
10	P/TZ	$\overline{9} \div \overline{6}$	3.9243	4.1570	4.1688	4.3418	4.3608					
11	$(P/TZ)^2/1000$	$(10^2/1000$	0.015400	0.017281	0.017379	0.018851	0.019017					
12	$L/H(F_rQ_m)^2$		0.005160	0.005160	0.005160	0.005160	0.005160					
13		$\overline{11} + \overline{12}$	0.020560	0.022440	0.022539	0.024011	0.024177					
14	I_n	$\overline{10} \div \overline{13}$	190.870	185.246	184.961	180.825	180.374					
15	$M=P_n - P_{n-1}$			392	398	398	409	410				
16	$N=I_n + I_{n-1}$			376.116	375.831	365.786	365.334					
17	M x N	$\overline{15} \times \overline{16}$			149581		149422					
18	$\sum$(M x N)	$\sum \overline{17}$			149581	299002	299002					

Delta P = $\dfrac{3[299721]}{190.870 + 4[184.961] + 180.374} = \dfrac{899163}{1111.088} = 809.3$

P = 1713.2 + 809.3 = 2522.5

Form C-122-E

(PAGE 4)

WORK SHEET FOR STEPWISE CALCULATION (SURFACE) PRESSURE (P_f & P_s)

RATE NO. 2 (P_c & P_w)

COMPANY Texas West Oil & Gas Company LEASE Madera WELL NO. 1 DATE 4-26-76

LOCATION: UNIT SECTION 5 TOWNSHIP 24-S RANGE 34-E

L 13973 H 13973 L/H 1.00 G 0.572 % CO_2 0.49 % N_2 0.23 % H_2S 0.00

d F_r Q_m M^2cfd (L/H) $(F_r Q_M)^2$ P_{cr} 672 T_{cr} 346

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		13973	6987	0							
2	GH		7993	3996	0							
3	37.5GH		299721	149860	0							
4	P_c or P_n		2522.5	2195.4	2226.5	2197.1	2199.5					
5	P_r		3.75	3.27	3.31	3.27	3.27					
6	T		640	588	535	535	535					
7	T_r		1.85	1.70	1.55	1.55	1.55					
8	Z		0.903	0.860	0.796	0.797	0.797					
9	P/Z P/Z	$\overline{4} \div \overline{8}$	2793.47	2552.84	2798.90	2758.47	2761.42					
10	P/TZ	$\overline{9} \div \overline{6}$	4.3648	4.3453	5.2316	5.1560	5.1615					
11	$(P/TZ)^2/1000$	$(10^2/1000$										
12	$L/H(F_r Q_m)^2$											
13		$\overline{11} + \overline{12}$										
14	I_n	$\overline{10} \div \overline{13}$	229.106	230.136	191.147	193.948	193.741					
15	$M=P_n - P_n - 1$			327	326	356	353	354				
16	$N=1_n + 1_{n-1}$			459.242	421.282	424.084	423.877					
17	M x N	$\overline{15} \times \overline{16}$		150172			149629					
18	$\sum$(M x N)	$\sum \overline{17}$		150172			299801					

$$\text{Delta P} = \frac{3[\ 299721\ ]}{229.106 + 4[\ 230.136\ ] + 193.741} = \frac{899163}{1343.391} = 669.3$$

P = 2522.5 - 669.3 = 1853.2

WORK SHEET FOR STEPWISE CALCULATION (SUBSURFACE) PRESSURE (P_f & P_s) Form C-122-E

(~~SURFACE~~) (P_c & P_w) (PAGE 5)

RATE NO..3

COMPANY Texas West Oil & Gas Company LEASE Madera WELL NO. 1 DATE 4-26-76

LOCATION: UNIT SECTION 5 TOWNSHIP 24-S RANGE 34-E

L 13973 H 13973 L/H 1.00 G 0.572 % CO_2 0.49 % N_2 0.23 % H_2S 0.00

d 2.441 F_r 0.010763 Q_m 6.827 M^2cfd (L/H) $(F_r Q_M)^2$ 0.005399 P_{cr} 672 T_{cr} 346

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		0	6987		13973						
2	GH		0	3996		7993						
3	37.5GH		0	149860		299721						
4	P_c or P_n		1828.2	2238.2	2244.2	2661.2	2672.2					
5	P_r		2.72	3.33	3.34	3.96	3.98					
6	T		538	589	589	640	640					
7	T_r		1.55	1.70	1.70	1.85	1.85					
8	Z		0.810	0.859	0.859	0.904	0.905					
9	P/Z P/Z	$\overline{4} \div \overline{8}$	2258.43	2605.59	2612.57	2943.81	2954.34					
10	P/TZ	$\overline{9} \div \overline{6}$	4.1978	4.4237	4.4356	4.5997	4.6162					
11	$(P/TZ)^2/1000$	$(10^2/1000$	0.017622	0.019570	0.019675	0.021157	0.021309					
12	$L/H(F_r Q_m)^2$		0.005399	0.005399	0.005399	0.005399	0.005399					
13		$\overline{11} + \overline{12}$	0.023021	0.024969	0.025074	0.026556	0.026708					
14	I_n	$\overline{10} \div \overline{13}$	182.348	177.172	176.902	173.205	172.838					
15	$M=P_n - P_n - 1$			410	416	417	428	428				
16	$N=1_n + 1_{n-1}$			359.520	359.251	350.107	349.740					
17	M x N	$\overline{15} \times \overline{16}$			149448		149689					
18	$\sum$(M x N)	$\sum$ $\overline{17}$			149448		299137					

$$\text{Delta P} = \frac{3[299721]}{182.348 + 4[176.902] + 172.838} = \frac{899163}{1062.794} = 846.0$$

P = 1828.2 + 846.0 = 2674.2

Form C-122-E

(PAGE 6).

WORK SHEET FOR STEPWISE CALCULATION (SURFACE) PRESSURE (P_f & P_s) (P_c & P_w)

RATE NO. 3

COMPANY Texas West Oil & Gas Company LEASE Madera WELL NO. 1 DATE 4-26-76

LOCATION: UNIT SECTION 5 TOWNSHIP 24-S RANGE 34-E

L 13973 H 13973 L/H 1.00 G 0.572 % CO_2 0.49 % N_2 0.23 % H_2S 0.00

d F_r Q_m M^2cfd (L/H) $(F_r Q_M)^2$ P_{cr} 672 T_{cr} 346

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		13973	6987	0							
2	GH		7993	3996	0							
3	37.5GH		299721	149860	0							
4	P_c or P_n		2674.2	2328.1	2367.7	2336.3						
5	P_r		3.98	3.46	3.52	3.48						
6	T		640	589	538	538						
7	T_r		1.85	1.70	1.55	1.55						
8	Z		0.905	0.858	0.794	0.794						
9	P/Z P/Z	$\overline{4} \div \overline{8}$	2956.55	2713.35	2981.97	2942.48						
10	P/TZ	$\overline{9} \div \overline{6}$	4.6196	4.6067	5.5427	5.4693						
11	$(P/TZ)^2/1000$	$(10^2/1000$										
12	$L/H(F_r Q_m)^2$											
13		$\overline{11} + \overline{12}$										
14	I_n	$\overline{10} \div \overline{13}$	216.468	217.075	180.418	182.839						
15	$M=P_n - P_{n-1}$			346	346	377	375					
16	$N=1_n + 1_{n-1}$			433.544	397.493	399.914						
17	M x N	$\overline{15} \times \overline{16}$		150006		150423						
18	$\sum$(M x N)	$\sum$ $\overline{17}$		150006		300429						

$$\text{Delta P} = \frac{3\left[299721\right]}{216.468 + 4\left[217.075\right] + 182.839} = \frac{899163}{1267.607} = 709.3$$

P = 2674.2 - 709.3 = 1964.9

WORK SHEET FOR STEPWISE CALCULATION (SUBSURFACE) PRESSURE (P_f & P_s) XXXXXXXXXX (P_c & P_w)

Form C-122-E

(PAGE 7)

RATE NO. 4

COMPANY Texas West Oil & Gas Company LEASE Madera WELL NO. 1 DATE 4-26-76

LOCATION: UNIT SECTION 5 TOWNSHIP 24-S RANGE 34-E

L 13973 H 13973 L/H 1.00 G 0.572 % CO_2 0.49 % N_2 0.23 % H_2S 0.00

d 2.441 F_r 0.010763 Q_m 6.738 M^2cfd (L/H) $(F_rQ_M)^2$ 0.005259 P_{cr} 672 T_{cr} 346

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		0	6987		13973						
2	GH		0	3996		7993						
3	37.5GH		0	149860		299721						
4	P_c or P_n		1963.2	2387.2	2393.2	2823.2	2833.2	2839.2	2834.2			
5	P_r		2.92	3.55	3.56	4.20	4.22	4.23	4.22			
6	T		540	590	590	640	640	640	640			
7	T_r		1.56	1.71	1.71	1.85	1.85	1.85	1.85			
8	Z		0.808	0.861	0.861	0.907	0.877	0.908	0.907			
9	P/Z P/Z	$\overline{4} \div \overline{8}$	2428.50	2771.62	2778.59	3112.68	3230.56	3128.60	3124.81			
10	P/TZ	$\overline{9} \div \overline{6}$	4.4972	4.6977	4.7095	4.8636	5.0477	4.8884	4.8825			
11	$(P/TZ)^2/1000$	$(10^2/1000$	0.020225	0.022068	0.022179	0.023654	0.025480	0.023897	0.023839			
12	$L/H(F_rQ_m)^2$		0.005259	0.005259	0.005259	0.005259	0.005259	0.005259	0.005259			
13		$\overline{11} + \overline{12}$	0.025484	0.027327	0.027438	0.028914	0.030739	0.029156	0.029098			
14	I_n	$\overline{10} \div \overline{13}$	176.470	171.903	171.638	168.211	164.213	167.664	167.794			
15	$M=P_n - P_n - 1$			424	430	430	440	446	441	441		
16	$N=1_n + i_{n-1}$			348.373	348.108	339.848	335.850	339.302	339.432			
17	M x N	$\overline{15} \times \overline{16}$			149686				149690			
18	$\sum$(M x N)	$\sum$ $\overline{17}$			149686				299376			

$$\text{Delta P} = \frac{3[299721]}{176.470 + 4[171.638] + 167.794} = \frac{899163}{1030.816} = 872.3$$

P = 1963.2 + 872.3 = 2835.5

WORK SHEET FOR STEPWISE CALCULATION ~~XXXXXXXXXXXX~~ PRESSURE (P_f & P_s) (SURFACE) (P_c & P_w)

Form C-122-E

(PAGE 8)

RATE NO. 4

COMPANY Texas West Oil & Gas Company LEASE Madera WELL NO. 1 DATE 4-26-76

LOCATION: UNIT SECTION 5 TOWNSHIP 24-S RANGE 34-E

L 13973 H 13973 L/H 1.00 G 0.572 % CO_2 0.49 % N_2 0.23 % H_2S 0.00

d F_r Q_m M^2cfd (L/H) $(F_rQ_M)^2$ P_{cr} 672 T_{cr} 346

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		13973	6987	0							
2	GH		7993	3996	0							
3	37.5GH		299721	149860	0							
4	P_c or P_n		2835.5	2469.5	2505.2	2473.7						
5	P_r		4.22	3.67	3.73	3.68						
6	T		640	590	540	540						
7	T_r		1.85	1.71	1.56	1.56						
8	Z		0.907	0.860	0.798	0.798						
9	P/Z P/Z	$\overline{4} \div \overline{8}$	3126.24	2870.49	3137.79	3098.26						
10	P/TZ	$\overline{9} \div \overline{6}$	4.8848	4.8652	5.8107	5.7375						
11	$(P/TZ)^2/1000$	$(10^2/1000$										
12	$L/H(F_rQ_m)^2$											
13		$\overline{11} + \overline{12}$										
14	I_n	$\overline{10} \div \overline{13}$	204.719	205.540	172.096	174.291						
15	$M=P_n - P_{n-1}$			366	365	397	395					
16	$N=1_n + 1_{n-1}$			410.258	377.635	379.783						
17	M x N	$\overline{15} \times \overline{16}$		150154		150774						
18	$\sum$ (M x N)	$\sum \overline{17}$		150154		300928						

$$\text{Delta } P = \frac{3[\ 299721\ ]}{204.719 + 4[\ 204.540\ ] + 174.291} = \frac{899163}{1197.170} = 751.1$$

P = 2835.5 - 751.1 = 2084.4

WORK SHEET FOR STEPWISE CALCULATION (SUBSURFACE) PRESSURE (P_f & P_s) XXXXXXXXX (P_c & P_w)

Form C-122-E

(PAGE 9)

RATE NO. 5

COMPANY Texas West Oil & Gas Company LEASE Madera WELL NO. 1 DATE 4-26-76

LOCATION: UNIT SECTION 5 TOWNSHIP 24-S RANGE 34-E

L 13973 H 13973 L/H 1.00 G 0.572 % CO_2 0.49 % N_2 0.23 % H_2S 0.00

d 2.441 F_r 0.011763 Q_m 5.401 M^2cfd (L/H) $(F_rQ_M)^2$ 0.004036 P_{cr} 672 T_{cr} 346

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		0	6987	13973							
2	GH		0	3996	7993							
3	37.5GH		0	149860	299721							
4	P_c or P_n		2428.2	2918.2	3408.2	3403.2						
5	P_r		3.61	4.34	5.07	5.06						
6	T		529	585	640	640						
7	T_r		1.53	1.69	1.85	1.85						
8	Z		0.785	0.857	0.926	0.925						
9	P/Z P/Z	$\overline{4} \div \overline{8}$	3095.22	3403.55	3682.55	3681.12						
10	P/TZ	$\overline{9} \div \overline{6}$	5.8511	5.8230	5.7540	5.7518						
11	$(P/TZ)^2/1000$	$(10^2/1000$	0.034235	0.033907	0.033108	0.033083						
12	$L/H(F_rQ_m)^2$		0.004036	0.004036	0.004036	0.004036						
13		$\overline{11} + \overline{12}$	0.038271	0.037944	0.037145	0.037119						
14	I_n	$\overline{10} \div \overline{13}$	152.884	153.464	154.908	154.954						
15	$M=P_n - P_{n-1}$			490	489	485	485					
16	$N=I_n + I_{n-1}$			306.348	308.372	308.419						
17	M x N	$\overline{15} \times \overline{16}$		150111		149583						
18	$\sum$(M x N)	$\sum$ $\overline{17}$		150111		299694						

$$\text{Delta P} = \frac{3[\ 299721]}{152.884 + 4[\ 153.464] + 154.954} = \frac{899163}{921.694} = 975.6$$

P = 2428.2 + 975.6 = 3403.8

WORK SHEET FOR STEPWISE CALCULATION (SURFACE) PRESSURE (P_f & P_s) (P_c & P_w)

Form C-122-E (PAGE 10)

RATE NO. 5

COMPANY Texas West Oil & Gas Company LEASE Madera WELL NO. 1 DATE 4-26-76

LOCATION: UNIT SECTION 5 TOWNSHIP 24-S RANGE 34-E

L 13973 H 13973 L/H 1.00 G 0.572 % CO_2 0.49 % N_2 0.23 % H_2S 0.00

d F_r Q_m M^2cfd (L/H) $(F_rQ_M)^2$ P_{cr} 672 T_{cr} 346

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		13973	6987		0						
2	GH		7993	3996		0						
3	3..5GH		299721	149860		0						
4	P_c or P_n		3403.8	2973.2	2966.6	2529.9	2517.0					
5	P_r		5.07	4.42	4.41	3.76	3.75					
6	T		640	585	585	529	529					
7	T_r		1.85	1.69	1.69	1.53	1.53					
8	Z		0.926	0.858	0.858	0.785	0.785					
9	P/Z P/Z	$\overline{4} \div \overline{8}$	3677.80	3463.66	3455.96	3221.94	3205.54					
10	P/TZ	$\overline{9} \div \overline{6}$	5.7466	5.9259	5.9127	6.0906	6.0595					
11	$(P/TZ)^2/1000$	$(10^2/1000$										
12	$L/H(F_rQ_m)^2$											
13		$\overline{11} + \overline{12}$										
14	I_n	$\overline{10} \div \overline{13}$	174.017	168.752	169.128	164.187	165.027					
15	$M=P_n - P_n - 1$			431	437	437	450	448				
16	$N=1_n + 1_{n-1}$			342.769	343.145	333.315	334.155					
17	M x N	$\overline{15} \times \overline{16}$		147733			150370					
18	$\sum$(M x N)	$\sum$ $\overline{17}$		147733			298103					

$$\text{Delta P} = \frac{3[\ 299721\ ]}{174.017 + 4[\ 169.128\ ] + 165.027} = \frac{899163}{1015.556} = 885.4$$

P = 3403.8 − 885.4 = 2518.4

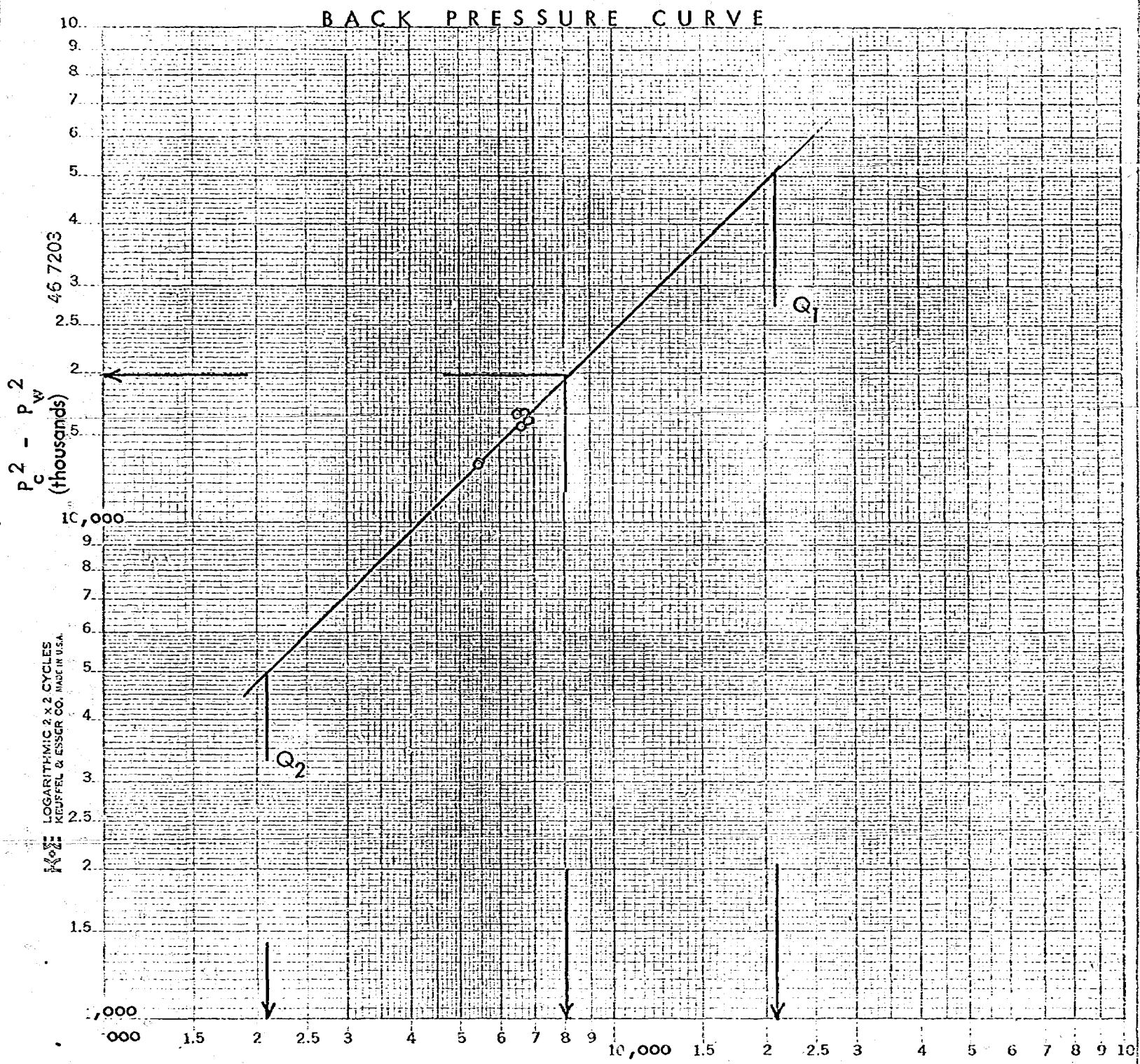
COMPANY Texas West Oil & Gas Company

FIELD Bell Lake, So. Morrow

LEASE Madera WELL 1

COUNTY Lea STATE New Mexico

DATE 4-26-76



Q_1 = 21,000 MCFD

Q_2 = 2,100 MCFD

Log Q_1 = 4.32222

Log Q_2 = 3.32222

n = 1.00000

NEW MEXICO OIL CONSERVATION COMMISSION
OIL AND GAS DIVISION

Form W-12
(1-1-71)

RECEIVED
MAY - 6 1976
OIL CONSERVATION COMM.
Santa Fe

INCLINATION REPORT

(One Copy Must Be Filed With Each Completion Report.)

District

Lease Number (Oil completions only)

1. FIELD NAME (as per RRC Records or Wildcat): Bell Lake (South) Morrow
2. LEASE NAME: Madera
8. Well Number: 1
3. OPERATOR: Texas West Oil & Gas Corporation
9. Identification Number (Gas completions only)
4. ADDRESS: 609 Midland Nat'l Bank Bldg., Midland, Texas 79701
10. County: Lea
5. LOCATION (Section, Block, and Survey): Section 5, T24S, R34E, Lea County, New Mexico

RECORD OF INCLINATION

*11. Measured Depth (feet)	12. Course Length (Hundreds of feet)	*13. Angle of Inclination (Degrees)	14. Displacement per Hundred Feet (Sine of Angle X100)	15. Course Displacement (feet)	16. Accumulative Displacement (feet)
100	100	3/4	1.31	1.31	1.31
161	61	1	1.75	1.07	2.38
220	59	1/2	0.87	0.51	2.89
276	56	3/4	1.31	0.73	3.62
337	61	3/4	1.31	0.80	4.42
393	56	3/4	1.31	0.73	5.15
515	122	3/4	1.31	1.60	6.75
600	85	1/2	0.87	0.74	7.49
846	246	1/4	0.44	1.08	8.57
1096	250	1/2	0.87	2.18	10.75
1351	255	1/4	0.44	1.12	11.87
1582	231	3/4	1.31	3.03	14.90
1730	148	3/4	1.31	1.94	16.84
1921	191	1/2	0.87	1.66	18.50
2188	267	3/4	1.31	3.50	22.00
2370	182	3/4	1.31	2.38	24.38

If additional space is needed, use the reverse side of this form.

17. Is any information shown on the reverse side of this form? [X] yes [ ] no
18. Accumulative total displacement of well bore at total depth of _____ feet = _____ feet.
*19. Inclination measurements were made in - [ ] Tubing [ ] Casing [ ] Open hole [ ] Drill Pipe
20. Distance from surface location of well to the nearest lease line _____ feet.
21. Minimum distance to lease line as prescribed by field rules _____ feet.
22. Was the subject well at any time intentionally deviated from the vertical in any manner whatsoever? _____
(If the answer to the above question is "yes", attach written explanation of the circumstances.)

INCLINATION DATA CERTIFICATION

I declare under penalties prescribed in Article 6036c, R.C.S., that I am authorized to make this certification, that I have personal knowledge of the inclination data and facts placed on both sides of this form and that such data and facts are true, correct, and complete to the best of my knowledge. This certification covers all data as indicated by asterisks (*) by the item numbers on this form.

Signature of Authorized Representative

John L. Fox, Office Mgr.
Name of Person and Title (type or print)

A. W. Thompson, Inc.
Name of Company

Telephone: 915 (Area Code) 366-4461

OPERATOR CERTIFICATION

I declare under penalties prescribed in Article 6036c, R.C.S., that I am authorized to make this certification, that I have personal knowledge of all information presented in this report, and that all data presented on both sides of this form are true, correct, and complete to the best of my knowledge. This certification covers all data and information presented herein except inclination data as indicated by asterisks (*) by the item numbers on this form.

Signature of Authorized Representative

L. N. Dunnavant; President
Name of Person and Title (type or print)

Texas West Oil & Gas Corporation
Operator

Telephone: 915 (Area Code) 684-5835

Railroad Commission Use Only:

Approved By: _____ Title: _____ Date: _____

* Designates items certified by company that conducted the inclination surveys.

NEW MEXICO OIL CONSERVATION COMMISSION
OIL AND GAS DIVISION

RECEIVED
MAY - 6 1976
OIL CONSERVATION COMM.
Santa Fe

Form W-12
(1-1-71)

District

INCLINATION REPORT
(One Copy Must Be Filed With Each Completion Report.)

7. Lease Number. (Oil completions only)

1. FIELD NAME (as per RRC Records or Wildcat): Bell Lake (South)
2. LEASE NAME: Madera
8. Well Number: 1
3. OPERATOR: Texas West Oil & Gas Corporation
9. Identification Number (Gas completions only)
4. ADDRESS: 609 Midland Nat'l Bank Bldg., Midland, Tx. 79701
10. County
5. LOCATION (Section, Block, and Survey): Section 5, T24S, R34E, Lea County, New Mexico

RECORD OF INCLINATION

*11. Measured Depth (feet)	12. Course Length (Hundreds of feet)	*13. Angle of Inclination (Degrees)	14. Displacement per Hundred Feet (Sine of Angle X100)	15. Course Displacement (feet)	16. Accumulative Displacement (feet)
13,167	185	1-1/2	2.62	4.85	207.70
13,666	499	1-1/4	2.18	10.88	218.58
13,980	314	3-3/4	6.54	20.54	239.12
14,247	267	1-3/4	3.05	8.14	247.26

If additional space is needed, use the reverse side of this form.

17. Is any information shown on the reverse side of this form? ☐ yes ☒ no
18. Accumulative total displacement of well bore at total depth of 14,247 feet = 247.26 feet.
*19. Inclination measurements were made in – ☐ Tubing ☐ Casing ☐ Open hole ☒ Drill Pipe
20. Distance from surface location of well to the nearest lease line _____ feet.
21. Minimum distance to lease line as prescribed by field rules _____ feet.
22. Was the subject well at any time intentionally deviated from the vertical in any manner whatsoever? _____
(If the answer to the above question is "yes", attach written explanation of the circumstances.)

INCLINATION DATA CERTIFICATION

I declare under penalties prescribed in Article 6036c, R.C.S., that I am authorized to make this certification, that I have personal knowledge of the inclination data and facts placed on both sides of this form and that such data and facts are true, correct, and complete to the best of my knowledge. This certification covers all data as indicated by asterisks (*) by the item numbers on this fc

Signature of Authorized Representative

John L. Fox, Office Mgr.
Name of Person and Title (type or print)

A. W. Thompson, Inc.
Name of Company

Telephone: 915 (Area Code) 366-4461

OPERATOR CERTIFICATION

I declare under penalties prescribed in Article 6036c, R.C.S., that I am authorized to make this certification, that I have personal knowledge of all information presented in this report, and that all data presented on both sides of this form are true, correct, and complete to the best of my knowledge. This certification covers all data and information presented herein except inclination data as indicated by asterisks (*) by the item numbers on this form.

Signature of Authorized Representative

Name of Person and Title (type or print)

Operator

Telephone: _____ (Area Code) _____

Railroad Commission Use Only:

Approved By: _____ Title: _____ Date: _____

* Designates items certified by company that conducted the inclination surveys.

TEXAS WEST OIL & GAS CORPORATION

609 MIDLAND NATIONAL BANK BUILDING
MIDLAND, TEXAS 79701

L. N. DUNNAVANT, President

DISTRICT OFFICE:
Lafayette, Louisiana 70501
F. L. Dischler, Manager
Oil Center Station, Box 52332
(318) 232-8387

(915) 684-5836

CASE 5493

8 September 1975

State of New Mexico
Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501
Attention: Mr. Joe D. Ramey, Member & Secretary

All Working Interest Owners
Bell Lake Unit
c/o Continental Oil Company, Operator
P. O. Box 460
Hobbs, New Mexico 88240

Re: Texas West Oil & Gas Corporation's
"MADERA" #1
Proposed (Morrow) Development Well
1980' FN&EL's of Section 5, T-24-S,
R-34-E, NMPM, South Bell Lake
(Morrow) Field, Lea County, New Mexico.
Pursuant to NMOCC Order #R-5039-A
with Reference to Case #5493.

Gentlemen:

Pursuant to the instructions contained in subject order regarding subject well, Texas West Oil & Gas Corporation hereby submits an AFE reflecting the estimated drilling and completion and related expenses pertaining to subject well. The total updated Intangible Costs are estimated to be $667,595.00; the total updated Tangible Costs are estimated to be $401,709.00; and the total Intangible and Tangible Costs are $1,069,304.00. Please be advised that the original AFE submitted to the NMOCC was dated April 23, 1975 and reflected a total Tangible and Intangible Drilling and Completion Cost of $943,150.00; the difference in that and the updated or current estimated total cost ($126,154.00) is, of course, due to the price increases that have been realized during this extended period of time affecting nearly all equipment and service costs related to the drilling and completion of subject well.

Also, attached, is a copy of NMOCC Form C-102 reflecting the well location and pooled area which encompasses all of the east half (E/2) of Section 5, T-24-S, R-34-E.

As you know, by subject NMOCC Order #R-5039-A (copy attached), Texas West Oil & Gas Corporation has been designated Operator of subject pooled area with said Order containing, among others, the following provisions:

1) Texas West Oil & Gas Corporation will be allowed to recover from production 150% of the pro rata share of reasonable well costs attributable to each non-consenting working interest owner who has not paid his share of estimated well costs within thirty (30) days from the date the schedule of estimated well costs is furnished to him.

2) Any unsevered mineral interest shall be considered a seven-eighths (7/8) working interest and a one-eighth (1/8) royalty interest for the purpose of allocating costs and charges under the terms of the Order.

3) Within thirty (30) days from the date the schedule of estimated well costs is furnished to him, any non-consenting working interest owner shall have the right to pay his share of estimated well costs to the Operator in lieu of paying his share of reasonable well costs out of production, and that any such owner who pays his share of estimated well costs as provided above shall remain liable for operating costs, but shall not be liable for risk charges.

Texas West Oil & Gas Corporation owns a lease covering an undivided 7/32 of the total interest in subject tract (21.875% Working Interest). Texas West Oil & Gas Corporation's proportionate share of the estimated total well costs per attached AFE is $233,910.25. The Bell Lake Unit Participant's total proportionate share is $835,393.75 if they participate in the drilling and completion of subject well.

Since Continental Oil Company is the Operator of the Bell Lake Unit and, further, since Texas West Oil & Gas Corporation does not have nor does it have access to a detailed list of the participants and their mailing address, and since Continental Oil Company has been the spokesman at all hearings and on all matters for the

Unit participants, Texas West Oil & Gas Corporation considers this notice to Continental Oil Company as Operator of the Bell Lake Unit the same as if it were direct notification to all participants, individually. This consideration by Texas West Oil & Gas Corporation is further substantiated by a statement in the form of a question contained in that particular letter from Texas West Oil & Gas Corporation to Continental Oil Company, Attention: Mr. L. P. Thompson, dated February 28, 1975, quote, "Texas West Oil & Gas Corporation assumes that Conoco, as Operator of the Bell Lake Unit, has the authority to commit the interests of the other unit participants. If Conoco does not have this authority and if it is necessary that Texas West Oil & Gas Corporation contact the other unit participants, direct, we would appreciate it if you would so advise and provide us with a list of the names of the other participants and their addresses as soon as possible"; and by Continental Oil Company's letter dated March 26, 1975, in answer to the aforementioned letter which is self-explanatory in that Conoco did not provide names and addresses of unit participants and, further, Conoco dictated the Bell Lake Unit's position in subject matter along with the Unit's refusal to approve Texas West's request.

Texas West Oil & Gas Corporation is submitting this notification and information by registered mail. We would appreciate an early reply from Conoco, however, no later than thirty (30) days from the date of receipt of this letter.

This will advise all concerned that Texas West Oil & Gas Corporation will do everything in its power to carry out the orders set down in this case by the NMOCC in a prudent and workmanlike manner.

Yours very truly,

TEXAS WEST OIL & GAS CORPORATION

L. N. Dunnavant
President

LND:as
xc: Hinkle, Bondurant, Cox & Eaton - Roswell, New Mexico

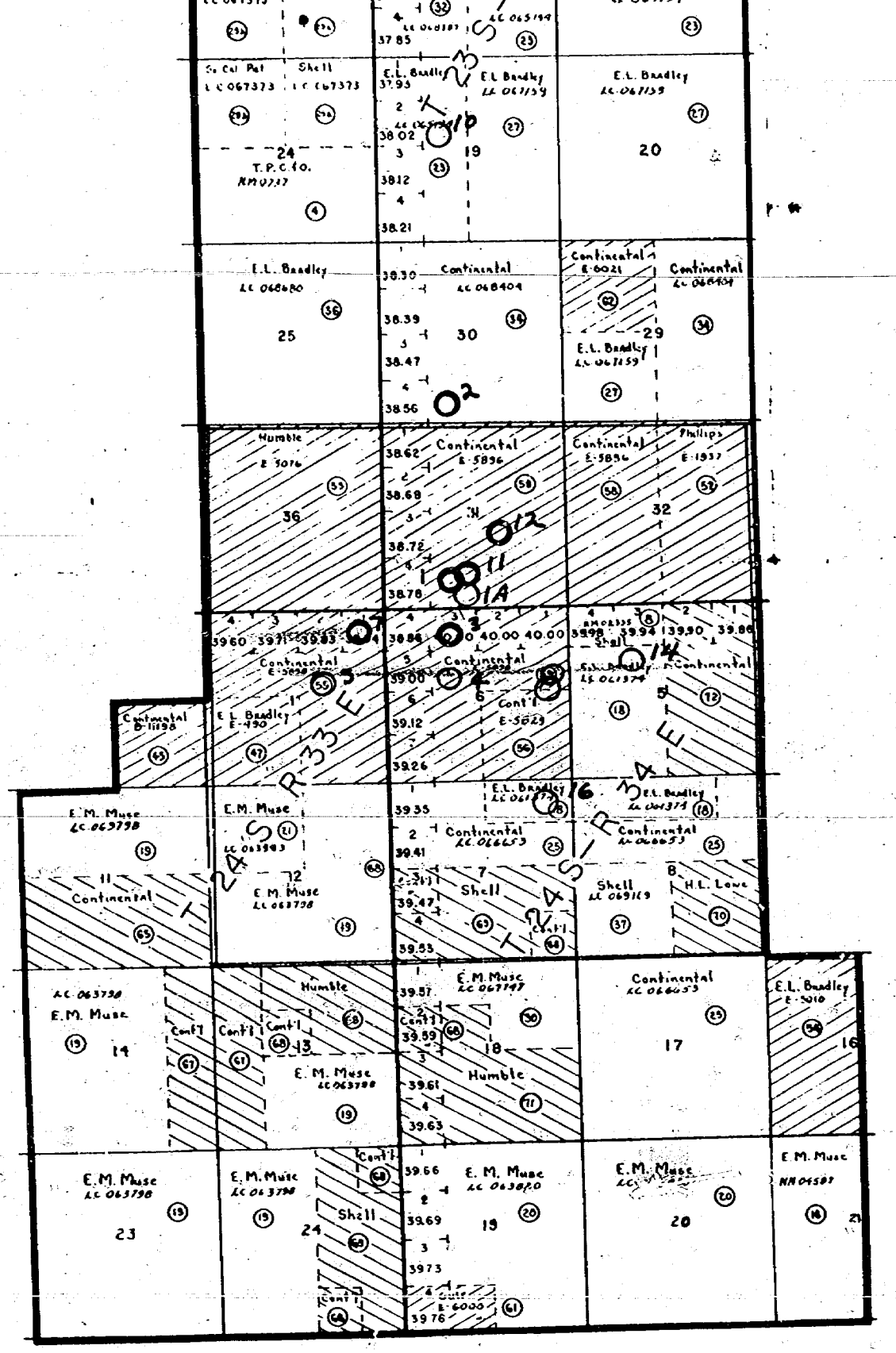
Attachments

T 22 S - R 33 E

T 22 S - R 34 E

T 23 S - R 33 E

T 23 S - R 34 E



OWNERSHIP PLAT

BELL LAKE UNIT AREA

LEA COUNTY, NEW MEXICO

#10

FEDERAL LANDS- 27,041.54 ACRES

STATE LANDS- 7,423.59 ACRES

FEE LANDS- 2,712.93 ACRES

TOTAL NO. OF ACRES 37,177.86

UNIT OUTLINE

TRACT NUMBERS

EXHIBIT "A"

T.O&G 104 (Rev. 8/12/75)

TEXAS WEST OIL & GAS CORPORATION

STATEMENT OF PAYOUT

Lease No. : 24060
Well Name & No. : Madera #1
Location : Section 5, T-24-S, R-34-E
County/Parish & State : Lea County, New Mexico
Period Covered : July thru September, 1976

Date: 11 March 1977

Amended Statement
Supersedes Statement
Dated 11-08-76

PRIOR BALANCE TO BE RECOVERED $ 3,562,187.18

CURRENT EXPENDITURES

Intangible:					
Drilling & Completion	$ -0-	×	250 %	* $	-0-
Equipment	$ -0-	×	250 %	* $	-0-
Lease Operating Expense	$ 6,796.88	×	100 %	* $	6,796.88
Total Current Expenditures				$	6,796.88

CURRENT REVENUE

347	Bbls. Gross Value	$	4,265.52
1,074,244	MCFs Gross Value	$	1,346,475.52
	Total Gross Value	$	1,350,741.04
Less:	Production Taxes	$	100,023.25
	Royalty Interest	$	178,083.93
	Transportation, Etc.	$	-0-
	Total Current Revenue		($ 1,072,633.86)

CURRENT MONTH BALANCE $ 3,568,984.06

CURRENT BALANCE TO BE RECOVERED $ 2,496,350.20

*Percent Recovery per NMOCC Order #R-5039-B

DISTRIBUTION:
Payout File
* Reversionary Interest (x) Conoco, et al
Working Interest (x) Exxon, et al
NMOCC-Santa Fe: Attn: Mr. Joe Ramey

Lease No.	:	24060
Well Name & No.	:	Madera #1
Location	:	Section 5-24S-34E
County/Parish & State	:	Lea County, New Mexico
Date	:	July thru September, 1976

LEASE OPERATING EXPENSES

Pumper/Operator Wages	$ 405.00	
Waste Water Disposal Costs	3,192.97	
General Lease Labor	1,190.83	
Electric Costs	-0-	
Equipment Repairs & Maintenance	370.24	
Overhead	750.00	
Tools & Equipment	60.07	
Surface Rentals	-0-	
Gas Compression	-0-	
Well Stimulation	-0-	
Supervision	-0-	
General Lease Supplies	16.18	
Miscellaneous Expense	811.59	$ 6,796.88
TOTAL		$ 6,796.88

TWO&G 104 (Rev. 8/12/75)

TEXAS WEST OIL & GAS CORPORATION

STATEMENT OF PAYOUT

Lease No. : 24060
Well Name & No. : Madera #1
Location : Section 5, T-24-S, R-34-E
County/Parish & State : Lea County, New Mexico
Period Covered : October thru December, 1976

Date: 11 March 1977

Amended Statement
Supersedes Statement
Dated 2-04-77

PRIOR BALANCE TO BE RECOVERED $ 2,496,350.20

CURRENT EXPENDITURES

Intangible:					
Drilling & Completion	$ -0-	×	250 %	*	$ -0-
Equipment	$ -0-	×	250 %	*	$ -0-
Lease Operating Expense	$ 4,554.45	×	100 %	*	$ 4,554.45
Total Current Expenditures					$ 4,554.45

CURRENT REVENUE

366	Bbls. Gross Value	$ 4,133.04
791,266	MCFs Gross Value	$ 1,180,075.02
	Total Gross Value	$ 1,184,208.06
Less:	Production Taxes	$ 89,774.82
	Royalty Interest	$ 159,536.30
	Transportation, Etc.	$ -0-
	Total Current Revenue	($ 934,896.94)

CURRENT MONTH BALANCE $ 2,500,904.65

CURRENT BALANCE TO BE RECOVERED $ 1,566,007.71

*Percent Recovery per NMOCC Order #R-5039B

DISTRIBUTION:
Payout File
* Reversionary Interest (x) Conoco, et al
Working Interest (x) Exxon, et al
NMOCC-Santa Fe: Attn: Mr. Joe Ramey

TWO&G 104b

Lease No.	:	24060
Well Name & No.	:	Madera #1
Location	:	Section 5, T-24-S,R-34-E
County/Parish & State	:	Lea County, New Mexico
Date	:	October thru December, 1976

LEASE OPERATING EXPENSES

Pumper/Operator Wages	$ 405.00	
Waste Water Disposal Costs	2932.59	
General Lease Labor	67.55	
Electric Costs	-0-	
Equipment Repairs & Maintenance	-0-	
Overhead	750.00	
Tools & Equipment	-0-	
Surface Rentals	-0-	
Gas Compression	-0-	
Well Stimulation	399.31	
Supervision	-0-	
General Lease Supplies	-0-	
Miscellaneous Expense	-0-	$ 4,554.45
TOTAL		$ 4,554.45

PHILLIPS PETROLEUM COMPANY
ODESSA, TEXAS 79761
PHILLIPS BUILDING

NATURAL RESOURCES GROUP
Exploration and Production

September 7, 1976

Texas West Oil and Gas Corporation's
Madera Well No. 1, South Bell Lake
Morrow Gas Field, Lea County, N. M.

File: W4-Ta-447-76

File Case 5493

Continental Oil Company
P. O. Box 460
Hobbs, New Mexico 88240

Attention: Mr. L. P. Thompson,
Division Manager

Gentlemen:

Reference is made to your letter of August 26, 1976, to Texas West Oil and Gas Corporation indicating a difference of opinion regarding the method used in calculating the subject well's payout status during the 250 percent penalty period provided for by the New Mexico Oil Conservation Commission's Order No. R-5039-B.

This is to advise that Phillips Petroleum Company, as a 4.42655 percent consenting working interest owner, concurs with the method currently being used by Texas West Oil and Gas Corporation; i.e., 250 percent times the drilling, completion, and equipment costs less the total net revenue after taxes, royalty, and operating expenses. If Continental Oil Company's method of utilizing only the non-consenting working interest ownership of 64.8453 percent times 250 percent times the drilling, completion, and equipment costs is used, then only 64.8453 percent of the net revenue after taxes, royalty, and operating expenses should be used to calculate the payout. Both of these methods should thus yield the same total production volume and income to payout.

Should the New Mexico Oil Conservation Commission schedule a conference to resolve this matter, then Phillips Petroleum Company desires to be notified so that we may be represented at the conference.

Very truly yours,

PHILLIPS PETROLEUM COMPANY

F. F. Lovering, Manager
Southwestern Region

WJM:dva

Texas West Oil and Gas Corporation
609 C&K Petroleum Building
Midland, Texas 79701

Bell Lake Working Interest Owners

New Mexico Oil Conservation Commission
Attention: Mr. Joe D. Ramey
P. O. Box 2088
Santa Fe, New Mexico 87501

L. P. Thompson
Division Manager
Production Department
Hobbs Division

Continental Oil Company
P.O. Box 460
1001 North Turner
Hobbs, New Mexico 88240
(505) 393-4141

Case 5493

August 26, 1976

Texas West Oil and Gas Corporation
609 C&K Petroleum Building
Midland, Texas 79701

Gentlemen:

Madera No. 1, Bell Lake Unit Area, Lea County, New Mexico

Your letter dated August 6, 1976, and attachments, have been received and duly noted. We misunderstood the purpose of your interim cost statement transmitted May 13. Thinking this was the statement called for in the Comission's order we hastened to review the information which you graciously furnished us so that we would meet the 45-day deadline, also placed on us by the order.

Our confusion is understandable in view of the language of your transmittal letter which states "in compliance with the Commission's order entered in Case No. 5493 Order No. R-5039-B... transmitted herewith is the tangible and intangible cost analysis reflecting the actual well costs relevent to subject well".

We now understand the statement of July 21, is the statement required under the order. Considering the fact the statement was revised by your August 6, statement, we would assume the 45-day period in which to object to these charges will commence on August 6. We have no reason at this time to object to these charges, but still have the matter under study.

There is an apparent difference of opinion as to the meaning of Order No. R-5039-B in regard to recoupment of costs and charges from production. There are several standard operating agreements which describe the manner in which non-consent penalties can be recouped. The Commission did not choose to use this language and we therefore must interpret the actual language which was used in the order. Paraphrasing the language of the order it provides that Texas West is authorized to withhold from production 250% of the "prorata share of reasonable well costs attributable to each non-consenting working interest owner who has not paid his share of estimated well costs within 15 days from the date the schedule of estimated well costs is furnished to him". The non-consenting working interest owners in Bell Lake Unit constitute 64.84536% of the ownership under the well. Two Hundred Fifty percent of this figure is 162.1134%. Applying this percentage to the well costs furnished by your statement, we calculate the cost to be recouped by operator and other consenting owners is $2,572,721.72 plus operating costs. This is in conformance with paragraphs 7 and 8, page 7 of Order R-5039-B and Sec. 65-3-14 C NMSA.

Hold - one of these is requested

It may be helpful for the Commission to furnish the intent of their order, but we believe that the actual language used in the order must govern the parties in this matter. If a satisfactory interpretation cannot be agreed upon with the assistance of the Commission, it may be necessary to have the matter resolved in a court of law.

If there is objection to the costs as submitted by your August 6, statement, Continental Oil Company and the other non-consenting Bell Lake Unit owners will notify you and the Commission within the 45-day period following August 6.

Yours very truly,

VTL:reh
CC:
Working Interest Owners
Bell Lake Unit
(Address List Attached)

CFE: LCL: FOH: JWK

NMOCC-Santa Fe

Bell Lake Unit
Participating Area A
Working Interest Owners

Bass Enterprises Production Company
C/O Perry R. Bass
3100 Fort Worth National Bank Building
Fort Worth, Texas 76102

Exxon Company, U.S.A
P. O. Box 1600
Midland, Texas 79701

Brady M. Lowe
1500 Broadway, Suite 1230
Lubbock, Texas 79400

Phillips Petroleum Company
Phillips Building
Odessa, Texas 79760

Tripor Resources Oil and Gas Fund
305 United Gas Building
Houston, Texas 77002

TEXAS WEST OIL & GAS CORPORATION
600 C&K PETROLEUM BUILDING
MIDLAND, TEXAS 79701

(915) 683-5838

L. N. DUNNAVANT, President

DISTRICT OFFICES:
Lafayette, Louisiana 70501
F. L. Bischke, Manager
Oil Center Station, Box 52332
(318) 232-0737

6 August 1976

Continental Oil Company
P.O. Box 460
Hobbs, New Mexico 88240

Re: Madera #1
Bell Lake Unit Area
Lea County, New Mexico

Attention: Mr. L. P. Thompson

Gentlemen:

Your letter of August 3 relevant to the initial Statement of Payout rendered July 21, subject lease, is acknowledged and Conoco's exception to same is duly noted and hereby replied to, categorically:

1) The Tangible & Intangible Drilling Costs transmitted May 13 specified the period covered "From Spud Date thru Billing Date 5-10-76" which Texas West assumed would indicate that all vendor invoices had not yet been received and that Conoco could expect a supplemental analysis. A further indication should have been the fact that subject well was only completed approximately two weeks prior to transmittal of said analysis making it virtually impossible for Texas West to have had possession of all well costs.

2) According to NMOCC Order No. R-5039-B, Page 6, Paragraph (5), Texas West was required, only, to furnish an itemized schedule of actual well costs within ninety (90) days following completion of the well; not only, did we comply with the foregoing Order, we took it a step further and re-capitulated each invoice by date, invoice no., vendor and categorized the tangibles and intangibles, and as an additional courtesy, we supplied copies of each invoice reflected on the re-cap, grouped by page number and in the order listed on said re-cap. We did error in breaking out the tangibles and intangibles on the May 11 submittal; however, this in no way altered the cost of the well and corrections have been reflected on the Supplemental Analysis attached hereto, and are self-explanatory. Said Supplemental Analysis also

reflects the additional $73,589.95 well costs which appeared on subject Statement of Payout. The well costs reflected in the Intangible Drilling & Completion and Tangible Lease and Well Equipment sections remain the same with the exception of allowed discounts.

3) The $41,464.49 cost reflected in the Lease Operating Expense section was a duplicate entry and, as you will note, has been deleted from the revised Statement of Payout attached hereto. You were correct in advising that lease operating expenses should be reflected at 100% rather than 250% as shown on the initial statement; this too has been corrected on the revised statement.

By copy of this letter, Texas West submits to the Commission that a schedule of reasonable well costs has been rendered in a timely manner and that Texas West has fulfilled the requirements set forth in the NMOCC Order No. R-5039-B; further, Texas West has and will continue to cooperate with Conoco and the other non-consent working interests owners of the Bell Lake Unit in every possible way.

Yours very truly,

TEXAS WEST OIL & GAS CORPORATION

Alice Sandell

Alice Sandell
Office Manager

AS:kw

Attachments

xc: NMOCC
✔ Attn: Joe D. Ramey (w/attachments)

Exxon Corporation
Midland, Texas 79701

Phillips Petroleum Company
Odessa, Texas 79761

TWO&G Form 111 (Rev. 5-76)

NMOCC
9D Hearing

TEXAS WEST OIL & GAS CORPORATION

600 C & K PETROLEUM BUILDING
MIDLAND, TEXAS 79701

SUPPLEMENTAL

Tangible & Intangible Drilling Costs Analysis

Lease No.: 24060

Well Name: Madera #1

Location: Section 5, T-24-S, R-34-E

County/Parish: Lea County, New Mexico

Period Covered: May billing dated 5-14-76 thru June, 1976 billing dated 7-10-76

Date: 6 August 1976

Date	Invoice No.	Vendor	Drilling & Completion Costs Tangibles	Drilling & Completion Costs Intangibles
		Balance forward (Initial Cost Analysis date 5-11-76)	$424,002.60	$1,092,063.71
CORRECTIONS RELEVANT TO ANALYSIS DATED 5-11-76:				
Ref:	Page #2 (3rd & 4th entry from top):			
10-18-75	600703	Halliburton	5,965.85	(5,965.85)
11-01-75	902804	Halliburton	33,200.30	(33,200.30)
Ref:	Page #4 (10th entry from bottom):			
1-25-76	4-1876	Schlumberger Well Service		(388.00)
1-25-76	4-1876	Schlumberger Well Service		338.00
Ref:	Page #7 (12th entry from bottom):			
4-01-76	65430-N	Ruthco, Inc.	986.95	(986.95)
		Corrected Sub - Totals	$464,155.70	$1,051,860.61
SUPPLEMENTAL WELL COSTS :				
11-12-75	18598	Houston Truck Lines		87.42
11-12-75	18599	Houston Truck Lines		58.28
4-01-76	4-1	General Communications Service		263.75
11-13-75	75-3561R	Thrasher Trucking Company		262.01
4-29-76	43263	Chapparral Service, Inc.		281.99
5-10-76	8049	Allstate Construction, Inc.		1,186.12
4-21-76	69162	Cameron Iron Works, Inc.		49.76
		Discount		(1.00)
5-10-76	70467	Cameron Iron Works, Inc.		93.60
5-18-76	30617	Champion Chemicals, Inc.		312.00
10-31-75	50971	Drilprodco, Inc.		491.56
5-14-76	052866	Halliburton		457.39
3-17-76	141272	National Tank Company		3,280.35
3-17-76	141643	National Tank Company		7,253.16
4-03-76	141730	National Tank Company		111.80
4-30-76	13730	Kenworthy Tank Rental, Inc.		262.50
5-20-76	76-1620-R	Thrasher Trucking Company		281.61
5-20-76	76-1619-R	Thrasher Trucking Company		281.61
5-17-76	OC-5131	Vinson Supply Company	527.40	
		Discount	(9.03)	
5-27-76	OD-5-28SF	Vinson Supply Company	1,313.79	
6-03-76	8885	Wildman Machine & Welding		29.67
5-13-76	141825	National Tank Company		107.37
5-19-76	776	Permian Pipe Fabrication, Inc.	1,079.00	
5-13-76	OD-5-129F	Vinson Supply Company	170.63	
6-09-76	OD-6-103-F	Vinson Supply Company	52,350.52	
12-30-75	1231232	Communication Engineering Company		346.71
5-4-76	5-476-B	Lovington Abstract Company		42.64
		Sub - Total	55,432.31	15,540.30
		Total	$519,588.01	$1,067,400.91

OG&G 104 (Rev. 8/12/75)

TEXAS WEST OIL & GAS CORPORATION

STATEMENT OF PAYOUT

Lease No. : 24060
Well Name & No. : Madera #1
Location : Section 5, T-24-S, R-34-E
County/Parish & State : Lea County, New Mexico
Period Covered : Spud Date thru June, 1976

DATE: 6 August 1976

REVISED STATEMENT - Supersedes initial Statement dated 7-21-76

PRIOR BALANCE TO BE RECOVERED — $ Revised Intial Report

CURRENT EXPENDITURES

Intangible:					
Drilling & Completion	$ 1,067,400.91	× 250	% *	$	2,668,502.28
Equipment	$ 519,588.01	× 250	% *	$	1,298,970.03
Lease Operating Expense	$ 3,712.95	× 100	% *	$	3,712.95
Total Current Expenditures				$	3,971,185.26

CURRENT REVENUE

176	Bbls. Gross Value	$ 2,161.48	
724,323	MCFs Gross Value	$ 503,506.23	
	Total Gross Value	$ 505,667.71	
Less:	Production Taxes	$ 29,969.25	
	ROYALTY INTEREST	$ 45,947.53	
	Transportation, Etc.	$ -0-	
	Total Current Revenue		($ 429,750.93)

CURRENT MONTH BALANCE — $ 3,971,185.26

CURRENT BALANCE TO BE RECOVERED — $ 3,541.434.33

*Percent Recovery NMOCC order #R-5039-B

DISTRIBUTION:
Payout File
* Reversionary Interest (x) Conoco, et al
Working Interest (x) Exxon et al
NMOCC - Santa Fe - Attn: Mr. Joe Ramey

)&G 104a (Rev. 8/12/75)

Lease No. : 24060
Well Name & No. : Madera #1
Location : Section 5, T-24-S, R-34-E
County/Parish & State : Lea County, New Mexico
Date : Spud Date thru June, 1976

INTANGIBLE DRILLING & COMPLETION

Access, Location & Roads	$ 17,879.88	
Drilling Cost - Footage	-0-	
- Day Work	488,411.95	
- Other Expense	2,998.01	
Bits, Reamers, Stabilizers, etc.	58,005.62	
Water	4,192.65	
Fuel & Utilities	1,127.69	
Mud, Chemicals & Brine	198,031.60	
Cementing & Cementing Services	32,754.22	
Equipment Rentals	65,760.01	
Logging & Perforating	67,002.62	
Construction Material	4,544.92	
Transportation	8,641.17	
Other Logs & Surveys	974.42	
Supervision & Professional Services	26,273.49	
Wireline Service & Pulling Unit	12,632.66	
Coring & Testing	4,968.52	
Acidizing and Treating	-0-	
Roustabouting & Contract Labor	10,009.29	
Engineering & Geological	-0-	
Special Services	50,649.71	
Supplies	2,534.79	
Formation & Drill Stem Testing	347.17	
Contingencies	9,692.94	$ 1,067,433.33
Discounts Allowed	(32.42)	$ 1,067,400.91

TANGIBLE LEASE AND WELL EQUIPMENT

Casing	$ 326.491.68	
Tubing	84,933.72	
Well Head Equipment		
Tanks, Separators, Flowlines, etc.		
Artificial Lift Equipment	110,797.53	
Packers, Subsurface Equipment, etc.		
Tangible Contingencies	-0-	$ 522,222.93
Discounts Allowed	(2,634.92)	$ 519,588.01

TWO&G 104b

Lease No.	: 24060
Well Name & No.	: Madera #1
Location	: Section 5, T-24-S, R-34-E
County/Parish & State	: Lea County, New Mexico
Date	: May & June, 1976

LEASE OPERATING EXPENSES

Pumper/Operator Wages	$ 270.00	
Waste Water Disposal Costs	1,395.27	
General Lease Labor	215.85	
Electric Costs	14.91	
Equipment Repairs & Maintenance	560.17	
Overhead	500.00	
Tools & Equipment	-0-	
Surface Rentals	-0-	
Gas Compression	-0-	
Well Stimulation	-0-	
Supervision	388.10	
General Lease Supplies	-0-	
Miscellaneous Expense	368.65	$ 3,712.95
TOTAL		$ 1,590,701.87

CONOCO

L. P. Thompson
Division Manager
Production Department
Hobbs Division

Continental Oil Company
P.O. Box 460
1001 North Turner
Hobbs, New Mexico 88240
(505) 393-4141

August 3, 1976

Texas West Oil & Gas Corporation
609 C & K Petroleum Building
Midland, Texas 79701

Gentlemen:

Madera No. 1 - Bell Lake Unit Area, Lea County, New Mexico

We have received your statement of payout dated July 21, 1976. We must take exception to this representation of payout status. Texas West furnished, by letter dated May 13, 1976, a statement of the actual well cost relevant to the subject well amounting to $1,516,066.31. This cost was broken down $1,092,063.71 intangibles and $424,002.60 tangibles. Your statement now gives a breakdown of $1,067,433.33 intangible and $522,222.93 equipment which totals $1,589,656.26, or an increase of $73,589.95. We believe, under the terms of the commission's order, the amount upon which you can recoup cost and penalty is limited to the amount which was shown on your May 11th statement.

We further note that you have multiplied the lease/operating expense by 250% and we believe that this should be 100%. For example, the $250.00 per month operating charge authorized by the order is included in this total so that you are actually charging as operating charge $625.00 per month. There is also included in this operating expense an item of $41,464.49 for lease equipment. We cannot accept this item in the charge without identification and justification for the charge.

We also have serious reservations about the amount of monies to be recouped and in what manner. This question is currently under study by our Legal Department and we will advise at a later date our exceptions or acceptance of these charges.

Yours very truly,

L. P. Thompson
Division Manager

VTL:dlh
CC: NMOCC - Santa Fe: Working Interest Owners - Bell Lake Unit:
C. F. Ellis: F. O. Hull: J. W. Kellahin

MORG 104 (Rev. 8/12/75)

"First Statement"

TEXAS WEST OIL & GAS CORPORATION

STATEMENT OF PAYOUT

Lease No. : 24060 DATE: 21 July 1976
Well Name & No. : Madera #1
Location : Section 5, T-24-S, R-34-E
County/Parish & State : Lea County, New Mexico
Period Covered : Spud Date thru June, 1976

				$ Initial Report
PRIOR BALANCE TO BE RECOVERED				
CURRENT EXPENDITURES				
Intangible:				
Drilling & Completion	$ 1,067,433.33	× 250 %	*	$ 2,668,583.33
Equipment	$ 522,222.93	× 250 %	*	$ 1,305,557.32
Lease Operating Expense	$ 45,177.44	× 250 %	*	$ 112,943.60
Total Current Expenditures				$ 4,087,084.25
CURRENT REVENUE				
176 Bbls	Gross Value	$ 2,161.48		
724,323 MCFs	Gross Value	$ 503,506.23		
	Total Gross Value	$ 505,667.71		
Less:	Production Taxes	$ 29,969.25		
	Royalty Interest	$ 45,947.53		
	Transportation, Etc.	$ -0-		
Total Current Revenue				($ 429,750.93)
CURRENT MONTH BALANCE				$ 4,087,084.25
CURRENT BALANCE TO BE RECOVERED				$ 3,657,333.32

*Percent Recovery per NMOCC Order #R-5039-B

DISTRIBUTION:
Payout File
* Reversionary Interest (X) Conoco, et al
Working Interest (X) Exxon, et al
NMOCC - Santa Fe - Attn: Joe Ramey

T.O.&G. 104a (Rev. 8/12/75)

Lease No.	:	24060
Well Name & No.	:	Madera #1
Location	:	Sec. 5, T-24-S, R-34-E
County/Parish & State	:	Lea County, New Mexico
Date	:	Spud Date thru June, 1976

INTANGIBLE DRILLING & COMPLETION

Access, Location & Roads	$ 17,879.88	
Drilling Cost - Footage	-0-	
- Day Work	488,411.95	
- Other Expense	2,998.01	
Bits, Reamers, Stabilizers, etc.	58,005.62	
Water	4,192.65	
Fuel & Utilities	1,127.69	
Mud, Chemicals & Brine	198,031.60	
Cementing & Cementing Services	32,754.22	
Equipment Rentals	65,760.01	
Logging & Perforating	67,002.62	
Construction Material	4,544.92	
Transportation	8,641.17	
Other Logs & Surveys	974.42	
Supervision & Professional Services	26,273.49	
Wireline Service & Pulling Unit	12,632.66	
Coring & Testing	4,968.52	
Acidizing and Treating	-0-	
Roustabouting & Contract Labor	10,009.29	
Engineering & Geological	-0-	
Special Services	50,649.71	
Supplies	2,534.79	
Formation & Drill Stem Testing	347.17	
Contingencies	9,692.94	$ 1,067,433.33

TANGIBLE LEASE AND WELL EQUIPMENT

Casing	$ 326,491.68	
Tubing	84,933.72	
Well Head Equipment		
Tanks, Separators, Flowlines, etc.		
Artificial Lift Equipment	110,797.53	
Packers, Subsurface Equipment, etc.		
Tangible Contingencies		$ 522,222.93

Lease No. : 24060
Well Name & No. : Madera #1
Location : Section 5, T-24-S, R-34-E
County/Parish & State : Lea County, New Mexico
Date : May & June, 1976

LEASE OPERATING EXPENSES

Pumper/Operator Wages	$ 270.00	
Waste Water Disposal Costs	1,395.27	
General Lease Labor	215.85	
Electric Costs	14.91	
Equipment Repairs & Maintenance	560.17	
Overhead	500.00	
Tools & Equipment	41,464.49	
Surface Rentals	-0-	
Gas Compression	-0-	
Well Stimulation	-0-	
Supervision	388.10	
General Lease Supplies	-0-	
Miscellaneous Expense	368.65	$ 45,177.44
TOTAL		$1,634,833.70

Feature Summary - Texas West's, Madera No. 1.

Feature	1	2	3	4	5	6	7		Total	7-21-76 Statement	Difference
403	165.52	14,701.87	116.19	299.42	290.27	2,975.91	2,236.91		21,293.09	5,320.34 ✓	
407	16,937.61	217.40				953.22	96.20		18,106.50	17,879.28 ✓	
412		56,097.30	110,196.60		229,744.97	63,241.32	11,336.21		470,616.30	501,014.61 ✓	
413		18,950.75	26,211.72	13,332.99		5,291.49			63,776.95	52,005.62 ✓	
414	54,176.59	17,392.70	22,790.77	19,557.33	2,513.09	(4,007.50)			184,423.97	198,031.61 ✓	
417		55,083.27				16,837.10			71,920.37	52,754.22 ✓	
419	720.59	1,591.80	545.36		663.75	1,353.93	952.24		5,620.56	7,079.71 ✓	
421	4,499.24	2,411.24	5,150.14	6,706.18	21,231.81	23,269.07	5,052.00		68,300.28	65,760.01 ✓	
427											
429					4,275.43		2,252.46		6,927.89		
429		4,776.99	6,297.20	7,999.80	40,027.24		4,117.36		63,217.63	67,977.04 ✓	
431	124.50	29,865.31	1,903.2	403.77	1,947.46	2,400.55	1,972.42		36,794.33	8,641.17 ✓	
439	5,967.25	8,352.72	9,437.26	11,020.04	6,193.42	7,261.24	3,945.15		52,119.59	36,282.74 ✓	
445	4,331.99	6,913.26	356.07	1,419.12	4,278.30	1,522.00			18,657.74	53,607.72 ✓	
436							9,600.00		9,600.00	9,692.94 ✓	
425										4,968.52 ✓	
426										317.17 ✓	
							Intg. Totals		1,090,972.49	1,067,433.33	(23,539.16)
9	1,027.19					326,606.17	78,119.47		405,751.83	522,222.93	
117	722.80						17,376.13		18,108.93		
131							861.14		861.14		
139							7,082.26		7,082.86		
145							170.00		170.00		
							Grand Total		1,523,947.25	1,589,656.26	65,709.01
						Total per	Texas West		- 1,516,006.31	1,589,656.26	73,589.95
									7,940.94		
							Tang. Total		431,974.76	522,222.93	90,248.17

Prepared By

Approved By

TMOBC 104 (Rev. 8/12/75)

TEXAS WEST OIL & GAS CORPORATION

STATEMENT OF PAYOUT

Lease No. : 24060 DATE: 21 July 1976
Well Name & No. : Madera #1
Location : Section 5, T-24-S, R-34-E
County/Parish & State : Lea County, New Mexico
Period Covered : Spud Date thru June, 1976

PRIOR BALANCE TO BE RECOVERED $ Initial Report

CURRENT EXPENDITURES

Intangible:				
Drilling & Completion	$ 1,067,433.33	× 250 %	*	$ 2,668,583.33
Equipment	$ 522,222.93	× 250 %	*	$ 1,305,557.32
Lease Operating Expense	$ 45,177.44	× 250 %	*	$ 112,943.60
Total Current Expenditures	1,634,833.70			$ 4,087,084.25

CURRENT REVENUE

176	Bbls. Gross Value	$ 2,161.48	
724,323	MCFs Gross Value	$ 503,506.23	
	Total Gross Value	$ 505,667.71	
Less:	Production Taxes	$ 29,969.25	
	Royalty Interest	$ 45,947.53	
	Transportation, Etc.	$ -0-	
	Total Current Revenue		($ 429,750.93)

CURRENT MONTH BALANCE $ 4,087,084.25

CURRENT BALANCE TO BE RECOVERED $ 3,657,333.32

*Percent Recovery per NMOCC Order #R-5039-B

DISTRIBUTION:
Payout File
* Reversionary Interest (x) Conoco, et al
Working Interest (X) Exxon, et al
NMOCC - Santa Fe - Attn: Joe Ramey

Texas West 1st statement

TWOSG 104a (Rev. 8/12/75)

Lease No. : 24060
Well Name & No. : Madera #1
Location : Sec. 5, T-24-S, R-34-E
County/Parish & State : Lea County, New Mexico
Date : Spud Date thru June, 1976

INTANGIBLE DRILLING & COMPLETION

Access, Location & Roads	$ 17,879.88	
Drilling Cost - Footage	-0-	
- Day Work	488,411.95	
- Other Expense	2,998.01	
Bits, Reamers, Stabilizers, etc.	58,005.62	
Water	4,192.65	
Fuel & Utilities	1,127.69	
Mud, Chemicals & Brine	198,031.60	
Cementing & Cementing Services	32,754.22	
Equipment Rentals	65,760.01	
Logging & Perforating	67,002.62	
Construction Material	4,544.92	
Transportation	8,641.17	
Other Logs & Surveys	974.42	
Supervision & Professional Services	26,273.49	
Wireline Service & Pulling Unit	12,632.66	
Coring & Testing	4,968.52	
Acidizing and Treating	-0-	
Roustabouting & Contract Labor	10,009.29	
Engineering & Geological	-0-	
Special Services	50,649.71	
Supplies	2,534.79	
Formation & Drill Stem Testing	347.17	
Contingencies	9,692.94	$ 1,067,433.33

TANGIBLE LEASE AND WELL EQUIPMENT

Casing	$ 326,491.68	
Tubing	84,933.72	
Well Head Equipment		
Tanks, Separators, Flowlines, etc.		
Artificial Lift Equipment	110,797.53	
Packers, Subsurface Equipment, etc.		
Tangible Contingencies		$ 522,222.93

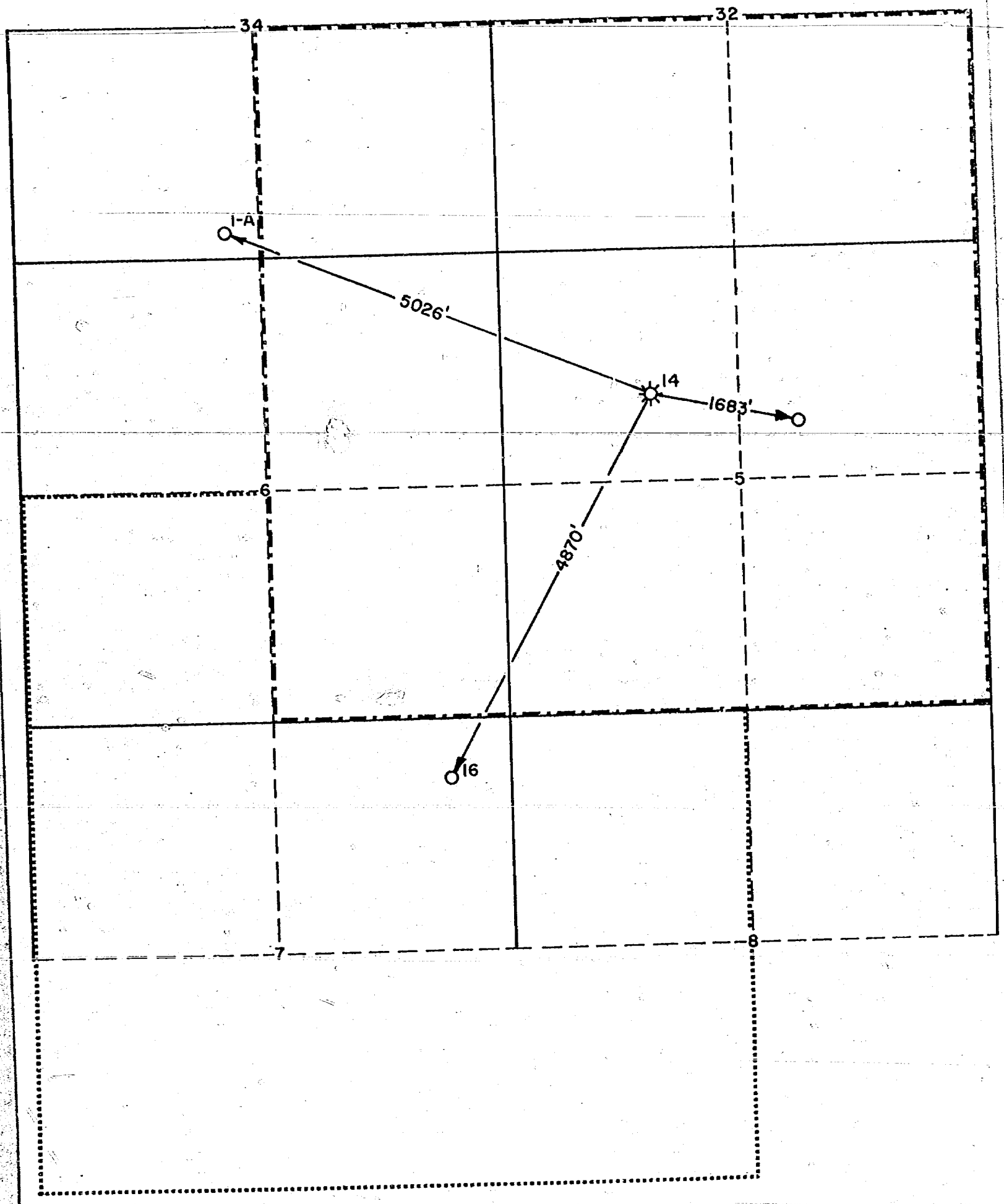
Form 104b

Lease No.	: 24060
Well Name & No.	: Madera #1
Location	: Section 5, T-24-S, R-34-E
County/Parish & State	: Lea County, New Mexico
Date	: May & June, 1976

LEASE OPERATING EXPENSES

Pumper/Operator Wages	$ 270.00	
Waste Water Disposal Costs	1,395.27	
General Lease Labor	215.85	
Electric Costs	14.91	
Equipment Repairs & Maintenance	560.17	
Overhead	500.00	
Tools & Equipment	41,464.49	
Surface Rentals	-0-	
Gas Compression	-0-	
Well Stimulation	-0-	
Supervision	388.10	
General Lease Supplies	-0-	
Miscellaneous Expense	368.65	$ 45,177.44
TOTAL		$1,634,833.70

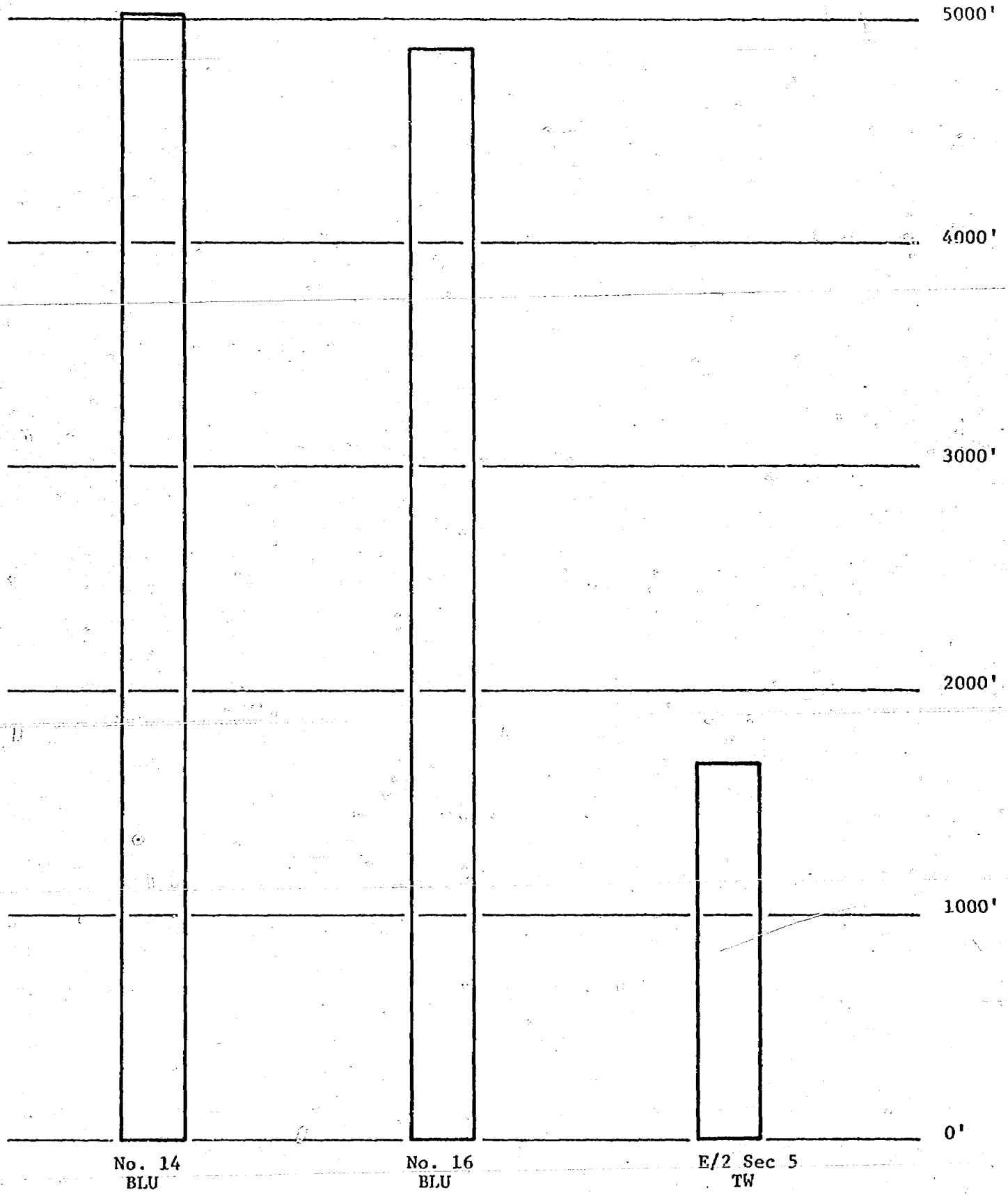
BELL LAKE UNIT MORROW PARTICIPATING AREA



PRESENT PARTICIPATING AREA

PROBABLE EXPANSION OF P.A.

Comparison of Risk
Distance From Nearest Well



#12

PAYOUT STATUS
BELL LAKE UNIT - SOUTH AREA
AS OF MARCH 31, 1975

Conoco 100%	Well No. 1-A .6184005	Well No. 4 .6184005	Well No. 5 .6184005	Well No. 14 .7719611	Well No. 16 .7719611	South Area	Texas West Share
Revenue	76,788	2,834,246	238,974	630,189		3,780,197	
Expense Intan.	7	1,165,065	465,705	469,203		2,099,980	
Deprec. Addns.	58,142	170,276	155,821	157,202		541,441	
Retirements	(13)	239,729	1,554,666	-		1,794,382	
Operating Exp.	13,688	388,630	48,868	55,200		506,386	
Bonus Cost	-	(3,454)	10,688	-		7,234	
Payout	4,964	874,000	(1,996,774) (99,756)	(51,416)	(849,157)	(2,018,382) (99,756)	
W. I. Owners							
Revenue	124,172	4,583,188	386,439	816,348		5,910,147	72,051
Exp. Intan.	11	1,883,997	753,080	607,807		3,244,895	39,559
Depr. Addns.	94,020	275,349	251,974	203,640		824,983	10,057
Operating Exp.	22,135	628,444	79,023	71,506		801,108	9,766
Payout	8,006	1,795,398	(697,638)	(66,605)	(1,100,000) est.	(60,839)	(742)
Non-consent penalty	58,083	1,393,895	541,106	441,476	550,000 est.	2,984,560	36,385
Payout status of Non-consenting WIO	(50,077)	401,503	(1,238,744)	(508,081)	(1,650,000)	(3,045,399)	(37,127)
Estimated Income							
2nd Quarter 1975	16,000	325,000	-0-	450,000		791,000	9,643
3rd Quarter 1975	16,000	325,000	-0-	450,000		791,000	9,643
4th Quarter 1975	16,000	375,000	-0-	450,000	300,000	1,141,000	13,910

TEXAS WEST OIL & GAS CORPORATION
AMENDED Gas Settlement Statement DATE: 13 October 1977

Lease: Madera #1 Activity Month: 09-76
County & State: Lea County, New Mexico Field: Bell Lake (South) Morrow

WHMCF	SETL MCF	GAS VAL	LEASE VALUE
327,180	327,180	490,345.57	490,345.57

TAX EX G&P	ADV TAX	SCHL TAX	SEV TAX	CON TAX	TOTAL TAX
38,973.74	4,969.60	11,509.98	16,926.44	812.48	34,218.50

EXXON INT: .08853100 SETL VOL: 28,966
GAS PR: 1.096268 GAS VALUE: 31,754.50

WI:	31,754.50	
RI:	867.24-	USA
RI:	2,168.63-	State
RI:	862.70-	Fee
TAX:	2,177.16-	
NET:	25,678.77	

Additional Monies due per RI & ORRI decimal interest adjustment.

PHILLIPS INT: .04426500 SETL VOL: 14,482
GAS PR: 1.538818 GAS VALUE: 22,285.17

WI:	22,285.17	
RI:	608.57-	USA
RI:	1,521.81-	State
RI:	605.39-	Fee
TAX:	1,527.94-	
NET:	18,021.46	

CONOCO, ET AL, INT: .0877970 SETL VOL: 28,725
GAS PR: 1.538818 GAS VALUE: 44,202.55

RI:	44,202.55	
RI:	9,657.56-	USA
RI:	24,149.93-	State
RI:	9,607.01-	Fee
TAX:	788.05-	
NET:	-0-	

REMITTED TO CONOCO:
RI: 8,194.42 -8,017.16 = $177.26
ORRI: 2,880.68
USA: 11,133.37 -11,109.28 = $24.09

TEXAS WEST, ET AL, INT: .77940670 SETL VOL: 255,007
GAS PR: 1.537618 GAS VALUE: 392,103.35

WI:	392,103.35	
RI:	-0-	USA
RI:	-0-	State
RI:	19,069.82-	Fee
TAX:	29,725.35-	
NET:	343,308.18	

TWQSG 104 (Rev. 8/12/75)

TEXAS WEST OIL & GAS CORPORATION

STATEMENT OF PAYOUT

Lease No. : 24060
Well Name & No. : Madera #1
Location : Section 5, T-24-S, R-34-E
County/Parish & State : Lea County, New Mexico
Period Covered : Spud Date thru June, 1976

DATE: 13 October 1977

Amended Statement
Supercedes Statements
Dated 8-06-76 & 3-11-77

PRIOR BALANCE TO BE RECOVERED — $ Amended Initial Report

CURRENT EXPENDITURES

Intangible:				
Drilling & Completion	$ 1,067,400.91	× 250 % *	$ 2,668,502.28	
Equipment	$ 519,588.01	× 250 % *	$ 1,298,970.03	
Lease Operating Expense	$ 3,712.95	× 100 % *	$ 3,712.95	
Total Current Expenditures				$ 3,971,185.26

CURRENT REVENUE

176	Bbls. Gross Value	$ 2,161.48	
724,323	MCFs Gross Value	$ 502,687.15	
	Total Gross Value	$ 504,848.63	
Less:	Production Taxes	$ 36,878.18	
	Royalty Interest	$ 62,293.90	
	Transportation, Etc.	$ -0-	
	Total Current Revenue		($ 405,676.55)

CURRENT MONTH BALANCE — $ 3,971,185.26

CURRENT BALANCE TO BE RECOVERED — $ 3,565,508.71

*Percent Recovery per NMOCC Order #R-5039-B

DISTRIBUTION:
Payout File
* Reversionary Interest (x) Conoco, et al
Working Interest (x) Exxon, et al
NMOCC-Santa Fe: Attn: Mr. Joe Ramey

TEXAS WEST OIL & GAS CORPORATION
AMENDED Gas Settlement Statement DATE: 13 October 1977

Activity Month: 04-76

Lease: Madera #1
Field: Bell Lake (South) Morrow
County & State: Lea County, New Mexico

WHMCF	SETL MCF	GAS VAL	LEASE VALUE
28,586	28,586	19,828.62	19,828.62

TAX EX G&P	ADV TAX	SCHL TAX	SEV TAX	CON TAX	TOTAL TAX
1,285.04	152.94	472.86	695.38	33.39	1,354.57

EXXON INT: .08853100 SETL VOL: 2,531
GAS PR: .562953 GAS VALUE: 1,424.83

WI:	1,424.83	
RI:	38.91-	USA
RI:	97.47-	State
RI:	38.82-	Fee
TAX:	94.13-	
NET:	1,155.50	

Additional Monies due per RI & ORRI decimal interest adjustment.

PHILLIPS INT: .04426500 SETL VOL: 1,265
GAS PR: .562953 GAS VALUE: 712.14

WI:	712.14	
RI:	19.45-	USA
RI:	48.49-	State
RI:	19.40-	Fee
TAX:	47.05-	
NET:	577.75	

CONOCO, ET AL, INT: .0877970 SETL VOL: 2,510
GAS PR: .562953 GAS VALUE: 1,413.01

WI:	1,413.01	
RI:	308.73-	USA
RI:	771.99-	State
RI:	308.02-	Fee
TAX:	24.27-	
NET:	-0-	

REMITTED TO CONOCO AS AGENT FOR:
Fee RI: 270.99 -265.68 = $5.31
Fee ORRI: $95.25

TEXAS WEST, ET AL, INT: .779407 SETL VOL: 22,280
GAS PR: .730639 GAS VALUE: 16,278.64

WI:	16,278.64	
RI:	-0-	USA
RI:	-0-	State
RI:	794.08-	Fee
TAX:	1,189.12-	
NET:	14,295.44	

TEXAS WEST OIL & GAS CORPORATION

AMENDED Gas Settlement Statement DATE: 13 October 1977

Lease: Madera #1 Activity Month: 05/76

County & State: Lea County, New Mexico Field: Bell Lake (South) Morrow

WHMCF	SETL MCF	GAS VAL	LEASE VALUE
316,326	316,326	219,419.15	219,419.15

TAX EX G&P	ADV TAX	SCHL TAX	SEV TAX	CON TAX	TOTAL TAX
14,218.59	1,692.50	5,232.62	7,695.02	369.36	14,989.50

EXXON INT: .08853100 SETL VOL: 28,005

GAS PR: .562953 GAS VALUE: 15,765.50

WI:	15,765.50	
RI:	430.57-	USA
RI:	1,076.90-	State
RI:	429.59-	Fee
TAX:	1,041.54-	
NET:	12,786.90	

Additional Monies due per RI & ORRI decimal interest adjustment.

PHILLIPS INT: .04426500 SETL VOL: 14,002

GAS PR: .562953 GAS VALUE: 7,882.47

WI:	7,882.47	
RI:	215.26-	USA
RI:	538.23-	State
RI:	214.78-	Fee
TAX:	520.75-	
NET:	6,393.45	

CONOCO, ET AL, INT: .0877970 SETL VOL: 27,772

GAS PR: .562953 GAS VALUE: 15,634.33

WI:	15,634.33	
RI:	3,415.85-	USA
RI:	8,541.78-	State
RI:	3,408.13-	Fee
TAX:	268.57-	
NET:	-0-	

REMITTED TO CONOCO AS AGENT FOR:
Fee RI: 2998.42 -2939.96 = $58.46
Fee ORRI: $1054.08

TEXAS WEST, ET AL, INT: .779407 SETL VOL: 246,547

GAS PR: .730639 GAS VALUE: 180,136.85

WI:	180,136.85	
RI:	-0-	USA
RI:	-0-	State
RI:	8,787.07-	Fee
TAX:	13,158.64-	
NET:	158,191.14	

TEXAS WEST OIL & GAS CORPORATION

AMENDED Gas Settlement Statement — DATE: 13 October 1977

Lease: Madera #1 Activity Month: 06-76

County & State: Lea County, New Mexico Field: Bell Lake (South) Morrow

WHMCF	SETL MCF	GAS VAL	LEASE VALUE
379,411	379,411	263,439.38	263,439.38

TAX EX G&P	ADV TAX	SCHL TAX	SEV TAX	CON TAX	TOTAL TAX
17,071.18	2,032.05	6,282.39	9,238.81	443.46	17,996.71

EXXON INT: .08853100 SETL VOL: 33,589

GAS PR: .563511 GAS VALUE: 18,927.77

WI:	18,927.77	
RI:	-516.93	USA
RI:	-1,292.65	State
RI:	-515.52	Fee
TAX:	-1,250.40	
NET:	15,352.27	

Additional Monies due per RI & ORRI decimal interest adjustment.

PHILLIPS INT: .04426500 SETL VOL: 16,795

GAS PR: .563511 GAS VALUE: 9,464.17

WI:	9,464.17	
RI:	-258.45	USA
RI:	-646.38	State
RI:	-257.86	Fee
TAX:	-625.34	
NET:	7,676.14	

CONOCO, ET AL, INT: .0877970 SETL VOL: 33,311

GAS PR: .563511 GAS VALUE: 18,771.11

WI:	18,771.11	
RI:	-4,101.23	USA
RI:	-10,255.54	State
RI:	-4,091.92	Fee
TAX:	-322.42	
NET:	-0-	

REMITTED TO CONOCO:
RI: 3,599.81 -3,529.78= $70.03
ORRI: $1,265.49

TEXAS WEST, ET AL, INT: .779407 SETL VOL: 295,716

GAS PR: .731365 GAS VALUE: 216,276.33

WI:	216,276.33	
RI:	-0-	USA
RI:	-0-	State
RI:	10,549.95-	Fee
TAX:	15,798.55-	
NET:	189,927.83	

TiDS&G 104 (Rev. 8/12/75)

RECEIVED
JUN - 9 1977
OIL CONSERVATION COMM.
Santa Fe

File
Case 5493

TEXAS WEST OIL & GAS CORPORATION

STATEMENT OF PAYOUT

Date: 18 April 1977

Lease No. : 24060
Well Name & No. : Madera #1
Location : Section 5, T-24-S, R-34-E
County/Parish & State : Lea County, New Mexico
Period Covered : January thru March, 1977

PRIOR BALANCE TO BE RECOVERED $ 1,566,007.71

CURRENT EXPENDITURES

Intangible:				
Drilling & Completion	$ -0-	× 250 %	* $	-0-
Equipment	$ -0-	× 250 %	* $	-0-
Lease Operating Expense	$ 5,777.04	× 100 %	* $	5,777.04
Total Current Expenditures			$	5,777.04

CURRENT REVENUE

176	Bbls. Gross Value	$	2134.80
515,054	MCFs Gross Value	$	804,855.12
	Total Gross Value	$	806,989.92
Less:	Production Taxes	$	61,177.91
	Royalty Interest	$	108,268.95
	Transportation, Etc.	$	-0-
	Total Current Revenue		$ (637,543.06)

CURRENT MONTH BALANCE $1,571,784.75

CURRENT BALANCE TO BE RECOVERED $ 934,241.69

*Percent Recovery per NMOCC ORDER #R-5039-B

DISTRIBUTION:
Payout File
* Reversionary Interest (x) Conoco, et al
Working Interest (x) Exxon, et al
NMOCC-Santa Fe: Attn: Mr. Joe Ramey

TWO&G 104b

Lease No.	:	24060
Well Name & No.	:	Madera #1
Location	:	Section 5, T-24-S, R-34-E
County/Parish & State	:	Lea County, New Mexico
Date	:	January thru March, 1977

LEASE OPERATING EXPENSES

Pumper/Operator Wages	$ 405.00	
Waste Water Disposal Costs	4572.94	
General Lease Labor	-0-	
Electric Costs	-0-	
Equipment Repairs & Maintenance	-0-	
Overhead	750.00	
Tools & Equipment	-0-	
Surface Rentals	-0-	
Gas Compression	-0-	
Well Stimulation	-0-	
Supervision	-0-	
General Lease Supplies	-0-	
Miscellaneous Expense	49.10	$ 5777.04
TOTAL		$ 5777.04

TWO&G 104 (Rev. 8/12/75)

File Case No 5493

TEXAS WEST OIL & GAS CORPORATION

STATEMENT OF PAYCUT

Date: 8 August 1977

Lease No. : 24060
Well Name & No. : Madera #1
Location : Section 5, T-24-S, R-34-E.
County/Parish & State : Lea County, New Mexico
Period Covered : April-May-June, 1977

PRIOR BALANCE TO BE RECOVERED $ 934,241.69

CURRENT EXPENDITURES

Intangible: Drilling & Completion	$ -0-	× 250 % *	$ -0-		
Equipment	$ -0-	× 250 % *	$ -0-		
Lease Operating Expense	$ 4,898.62	× 100 % *	$ 4,898.62		
Total Current Expenditures			$ 4,898.62		

CURRENT REVENUE

174	Bbls. Gross Value	$ 2,028.50
405,895	MCFs Gross Value	$ 634,450.50
	Total Gross Value	$ 636,479.00
Less:	Production Taxes	$ 48,262.87
	Royalty Interest	$ 89,411.73
	Transportation, Etc.	$ NONE
	Total Current Revenue	$ (498,804.40)

CURRENT MONTH BALANCE $ 939,140.31

CURRENT BALANCE TO BE RECOVERED $ 440,335.91

*Percent Recovery per NMOCC Order #R-5039-B

DISTRIBUTION:
Payout File
* Reversionary Interest (x) Conoco, et al
Working Interest (x) Exxon, et al
NMOCC-Sante Fe: Attn: Mr. Joe Ramey

TWOSG 104b

Lease No.	:	24060
Well Name & No.	:	Madera #1
Location	:	Section 5, T-24-S, R-34-E.
County/Parish & State	:	Lea County, New Mexico
Date	:	April-May-June, 1977

LEASE OPERATING EXPENSES

Pumper/Operator Wages	$ 405.00	
Waste Water Disposal Costs	1856.09	
General Lease Labor	-0-	
Electric Costs	-0-	
Equipment Repairs & Maintenance	-0-	
Overhead	803.10	
Tools & Equipment	-0-	
Surface Rentals	-0-	
Gas Compression	-0-	
Well Stimulation	-0-	
Supervision	-0-	
General Lease Supplies	-0-	
Miscellaneous Expense	1834.43	$ 4898.62
TOTAL		$ 4898.62

TWOSG 104 (Rev. 8/12/75)

TEXAS WEST OIL & GAS CORPORATION

STATEMENT OF PAYOUT

Lease No. : 24060
Well Name & No. : Madera
Location : Section 5, T-24-S,R-34-E
County/Parish & State : Lea County,New Mexico
Period Covered : October thru December,1976

Date: 4 February 1977

File 5493

PRIOR BALANCE TO BE RECOVERED $ 2,467,907.62

CURRENT EXPENDITURES

Intangible:						
Drilling & Completion	$ -0-	×	250	% *	$	-0-
Equipment	$ -0-	×	250	% *	$	-0-
Lease Operating Expense	$ 4554.45	×	100	% *	$	4,554.45
Total Current Expenditures					$	4,554.45

CURRENT REVENUE

366	Bbls. Gross Value	$ 4,133.04	
791,266	MCFs Gross Value	$1,180,075.02	
	Total Gross Value	$1,184,208.06	
Less:	Production Taxes	$ 82,710.26	
	Royalties	$ 159,536.30	
	Transportation, Etc.	$ -0-	
	Total Current Revenue		$ (941,961.50)

CURRENT MONTH BALANCE $2,472,462.07

CURRENT BALANCE TO BE RECOVERED $1,530,500.57

*Percent Recovery per NMOCC Order #R-5039-B

DISTRIBUTION:
Payout File
* Reversionary Interest (x) Conoco,etal
Working Interest (x) Exxon,et al
NMOCC-Santa Fe Attn: Mr. Joe Ramey

TWO&G 104b

Lease No.	:	24060
Well Name & No.	:	Madera #1
Location	:	Section 5, T-24-S,R-34-E
County/Parish & State	:	Lea County, New Mexico
Date	:	October thru December, 1976

LEASE OPERATING EXPENSES

Pumper/Operator Wages	$ 405.00	
Waste Water Disposal Costs	2932.59	
General Lease Labor	67.55	
Electric Costs	-0-	
Equipment Repairs & Maintenance	-0-	
Overhead	750.00	
Tools & Equipment	-0-	
Surface Rentals	-0-	
Gas Compression	-0-	
Well Stimulation	399.31	
Supervision	-0-	
General Lease Supplies	-0-	$ 4,554.45
Miscellaneous Expense	-0-	
TOTAL		$ 4,554.45

TWOSG 104 (Rev. 8/12/75)

File
Case 5493

TEXAS WEST OIL & GAS CORPORATION

STATEMENT OF PAYOUT

Lease No. : 24060
Well Name & No. : Madera #1
Location : Section 5, T-24-S, R-34-E
County/Parish & State : Lea County, New Mexico
Period Covered : Spud Date thru June, 1976

Date: 11 March 1977

Amended Statement
Supersedes Statement
Dated 8-06-76

					$ Amended Initial Report
PRIOR BALANCE TO BE RECOVERED					
CURRENT EXPENDITURES					
Intangible:					
Drilling & Completion	$ 1,067,400.91	× 250	% *		$ 2,668,502.28
Equipment	$ 519,588.01	× 250	% *		$ 1,298,970.03
Lease Operating Expense	$ 3,712.95	× 100	% *		$ 3,712.95
Total Current Expenditures					$ 3,971,185.26
CURRENT REVENUE					
176 Bbls. Gross Value			$ 2,161.48		
724.323 MCFs Gross Value			$ 503,506.22		
Total Gross Value			$ 505,667.70		
Less: Production Taxes			$ 36,938.01		
Royalty Interest			$ 59,731.61		
Transportation, Etc.			$ -0-		
Total Current Revenue					($ 408,998.08)
CURRENT MONTH BALANCE					$ 3,971,185.26
CURRENT BALANCE TO BE RECOVERED					$ 3,562,187.18

*Percent Recovery per NMOCC Order #R-5039-B

DISTRIBUTION:
Payout File
* Reversionary Interest (x) Conoco, et al
Working Interest (x) Exxon, et al
NMOCC- Santa Fe: Attn: Mr. Joe Ramey

T-0-G-104a (Rev. 8/12/75)

Lease No. : 24060
Well Name & No. : Madera #1
Location : Section 5, T-24-S, R-34-E
County/Parish & State : Lea County, New Mexico
Date : Spud Date thru June, 1976

INTANGIBLE DRILLING & COMPLETION

Access, Location & Roads	$ 17,879.88	
Drilling Cost - Footage	-0-	
- Day Work	488,411.95	
- Other Expense	2,998.01	
Bits, Reamers, Stabilizers, etc.	58,005.62	
Water	4,192.65	
Fuel & Utilities	1,127.69	
Mud, Chemicals & Brine	198,031.60	
Cementing & Cementing Services	32,754.22	
Equipment Rentals	65,760.01	
Logging & Perforating	67,002.62	
Construction Material	4,544.92	
Transportation	8,641.17	
Other Logs & Surveys	974.42	
Supervision & Professional Services	26,273.49	
Wireline Service & Pulling Unit	12,632.66	
Coring & Testing	4,968.52	
Acidizing and Treating	-0-	
Roustabouting & Contract Labor	10,009.29	
Engineering & Geological	-0-	
Special Services	50,649.71	
Supplies	2,534.79	
Formation & Drill Stem Testing	347.17	
Contingencies	9,692.94	$ 1,067,433.33
Discounts Allowed	(32.42)	$ 1,067,400.91

TANGIBLE LEASE AND WELL EQUIPMENT

Casing	$ 326.491.68	
Tubing	84,933.72	
Well Head Equipment		
Tanks, Separators, Flowlines, etc.		
Artificial Lift Equipment	110,797.53	
Packers, Subsurface Equipment, etc.		
Tangible Contingencies	-0-	$ 522,222.93
Discounts Allowed	(2,634.92)	$ 519,588.01

TNOSC 104b

Lease No.	: 24060
Well Name & No.	: Madera #1
Location	: Section 5, T-24-S, R-34-E
County/Parish & State	: Lea County, New Mexico
Date	: May & June, 1976

LEASE OPERATING EXPENSES

Pumper/Operator Wages	$ 270.00	
Waste Water Disposal Costs	1,395.27	
General Lease Labor	215.85	
Electric Costs	14.91	
Equipment Repairs & Maintenance	560.17	
Overhead	500.00	
Tools & Equipment	-0-	
Surface Rentals	-0-	
Gas Compression	-0-	
Well Stimulation	-0-	
Supervision	388.10	
General Lease Supplies	-0-	
Miscellaneous Expense	368.65	$ 3,712.95
TOTAL		$ 1,590,701.87

Case 5493

BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

APPLICATION OF TEXAS WEST OIL & GAS CORPORATION FOR COMPULSORY POOLING OF ALL MINERAL INTERESTS IN FORMATIONS OF PENNSYLVANIAN AGE UNDERLYING THE E½ SECTION 5, TOWNSHIP 24 SOUTH, RANGE 34 EAST, LEA COUNTY, FOR THE PURPOSE OF FORMING A REGULAR WELL SPACING AND PRORATION UNIT FOR THE DRILLING OF A MORROW GAS WELL 1980 FEET FROM THE NORTH LINE AND 1980 FEET FROM THE EAST LINE OF SAID SECTION 5. ALSO TO BE CONSIDERED WILL BE THE COST OF DRILLING AND COMPLETING SAID WELL AND THE ALLOCATION OF THE COST THEREOF AS WELL AS ACTUAL OPERATING COSTS, CHARGES FOR SUPERVISION AND THE DESIGNATION OF APPLICANT AS OPERATOR AND A CHARGE FOR THE RISK INVOLVED IN DRILLING SAID WELL

Oil Conservation Commission
Box 2088
Santa Fe, New Mexico 87501

Comes Texas West Oil & Gas Corporation, acting by and through the undersigned attorneys, and hereby makes application for compulsory pooling of all mineral interests in formations of Pennsylvanian age underlying the E½ Section 5, Township 24 South, Range 34 East, Lea County, for the purpose of forming a regular well spacing and proration unit for the drilling of a Morrow gas well 1980 feet from the north line and 1980 feet from the east line of said Section 5. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof, as well as actual operating costs, charges for supervision and the designation of applicant as operator and a charge for the risk involved in drilling said well, and in support thereof respectfully shows:

1. There is attached hereto, made a part hereof and for purposes of identification marked Exhibit "A", a plat showing the proposed spacing and proration unit, together with the location of the proposed well in Section 5. Said plat also shows the ownership of all leasehold interests within an area of 2 miles from the proposed drilling

unit, together with all wells which have been drilled in the area. The proposed well will be projected to test the Morrow formation of Pennsylvanian age at a depth of approximately 14,200 feet.

2. As is more particularly shown by Exhibit "A" the E½ of Section 5 is along the east boundary of the Bell Lake Unit Area, of which Continental Oil Company is the operator. The E½ of said section is fee or privately owned land and applicant is the owner of oil and gas leasehold interests embracing 7/32 of the minerals underlying said half section. Said oil and gas leases and interests of the lessors have not been committed to the Bell Lake Unit Agreement. There are two other owners of mineral interests in the E½ of Section 5 which have not been committed to the unit agreement and applicant is informed and believes that these interests are owned by J. M. Clark and Dale M. Thompson and that each of these owners has an undivided .0078125 interest. All mineral interests are owned in undivided interests uniformly throughout the entire half section.

3. Continental Oil Company, as unit operator, has completed a large gas well in the SE¼NW¼ Section 5 in the Morrow formation and the participating area created pursuant to the Bell Lake Unit now includes the W½ Section 5. Another gas well has been completed in the Morrow formation of the NW¼NE¼ Section 4, Township 24 South, Range 34 East.

4. Continental Oil Company, as unit operator, has not agreed to pool the mineral interests in the E½ Section 5 which are committed to said unit agreement for the purpose of drilling a well in the E½ of Section 5 and applicant has been unable to locate J. M. Clark and Dale M. Thompson to ascertain whether or not they would join in the drilling of the proposed well.

5. The wells which have been completed in the W½ Section 5 and in Section 4, in the opinion of applicant, are draining gas from the E½ Section 5 and that it is necessary in order to protect the correlative rights of all parties concerned to drill the well proposed by applicant.

6. Applicant seeks compulsory pooling to form a standard spacing and proration unit as provided by Section 65-3-14 N.M.S.A. (1953 Comp.) and in connection therewith to consider the cost of drilling and completing said well, the proper allocation of the cost thereof, as well as the cost of operating said well and charges for supervision. Also to be considered is a charge for the risk involved in drilling the well and approval of applicant as operator.

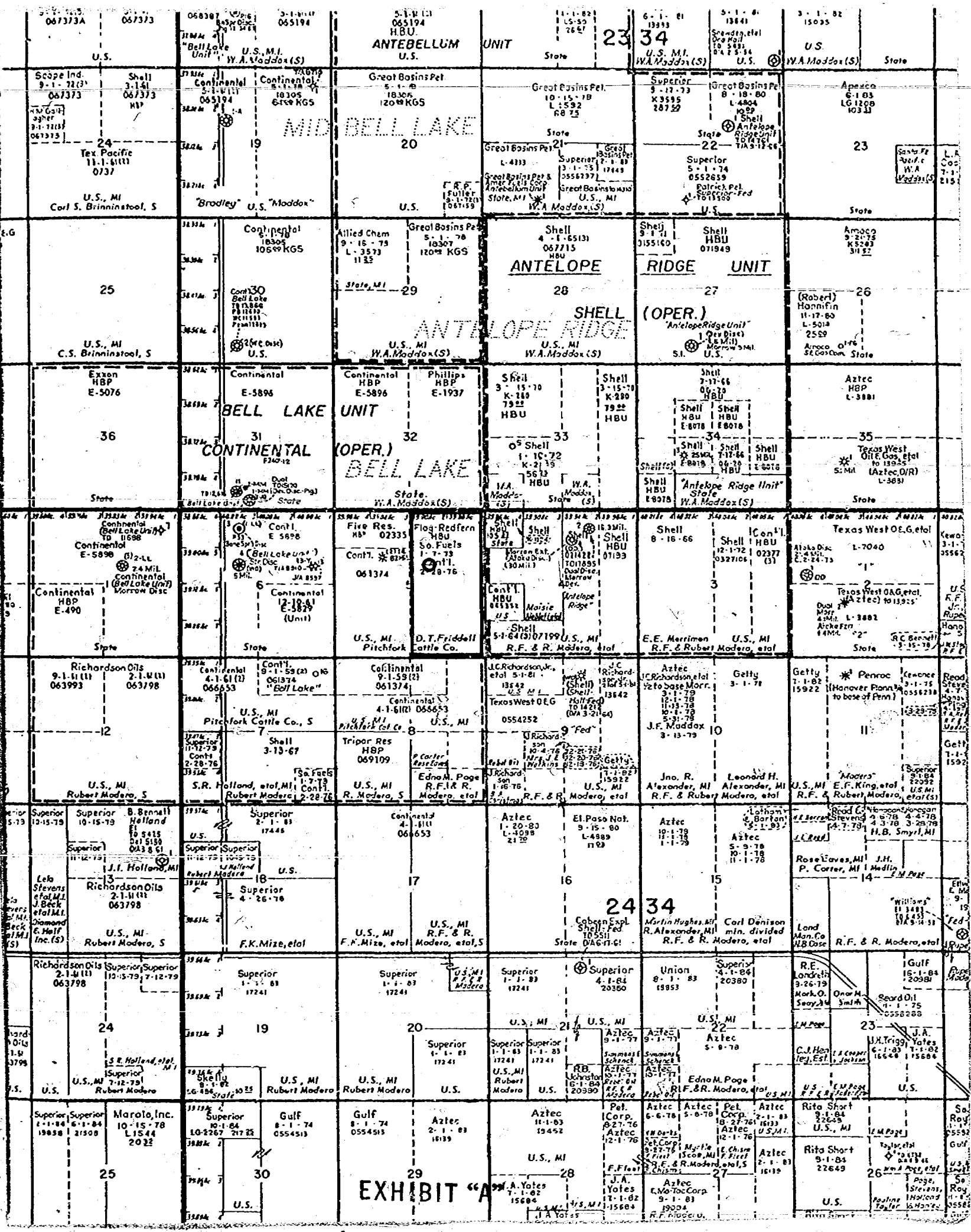
7. Applicant requests that this matter be included on the examiner's docket for May 28, 1975.

Respectfully submitted,

TEXAS WEST OIL & GAS CORPORATION

By _____

HINKLE, BONDURANT, COX & EATON
P.O. Box 10
Roswell, New Mexico 88201
Attorneys for applicant


MID BELL LAKE
ANTELOPE RIDGE
BELL LAKE UNIT
CONTINENTAL (OPER.)
BELL LAKE
ANTELOPE RIDGE UNIT
SHELL (OPER.)
"Antelope Ridge Unit"
EXHIBIT "A"

KELLAHIN AND FOX
ATTORNEYS AT LAW
500 DON GASPAR AVENUE
POST OFFICE BOX 1769
SANTA FE, NEW MEXICO 87501

JASON W. KELLAHIN
ROBERT E. FOX
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TELEPHONE 982-4315
AREA CODE 505

December 2, 1975

Mr. Joe D. Ramey, Secretary-Director
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: Compulsory Pooling Application
Bell Lake Unit Lands

Dear Mr. Ramey:

In view of the issuance of its Order No. R-5039-B, we consider the application of Continental Oil Company for compulsory pooling of the E/2 of Section 5, Township 24 South, Range 34 East, Bell Lake Field, moot, and wish to withdraw the application.

Yours very truly,

Jason W. Kellahin

Jason W. Kellahin

CC: Mr. Paul Thompson
Mr. William E. Rogers

JWK:kjf

Nmoc - [illegible]

TEXAS WEST OIL & GAS CORPORATION

(915) 951-3536

NOV 10 1977
OIL CONSERVATION COMM.
Santa Fe

7 November 1977

File
Cs 5493

Continental Oil Company
P.O. Box 1267
Ponca City, Oklahoma 74601

Re: Madera Lease (Lease #24060)
E/2 Section 5, T-24-S, R-34-E,
Lea County, New Mexico
Conoco D/O #24949

Attention: Mr. Jack E. Aitken

Gentlemen:

In your letter dated May 13, 1977 you advised the "Committed Fee" interest reflected on our division order was in error and that an overriding royalty interest had been omitted. As a result of this notification, our attorney secured additional information from you and upon review of same concurred that the "Committed Fee" interest should be increased from .0178106 to .0181650 and that the .0063858 ORI should be included on the division order. Consequently, the increased Royalty Interest and the addition of the Overriding Royalty Interest necessitated recalculation of production figures from inception of production. Having completed same, attached are the revised Gas Settlement Statements and Statements of Payout from initial production in April, 1976 through June, 1977 along with the current Statement of Payout for July, August, September, 1977. Also enclosed, is our check #2797 in the amount of $23,214.86 representing additional monies due the aforementioned interests.

By copy of this letter, we are advising Permian to disburse oil proceeds in accordance with the amendments reflected on the division order executed by Conoco.

If you have any questions regarding the mechanics of aforementioned adjustments, please so advise.

Yours very truly,

TEXAS WEST OIL & GAS CORPORATION

Alice Sandell

~~Alice Sandell~~
Office Manager

AS:kw

Attachments

xc: ✓NMOCC (w/attachments)
Santa Fe, New Mexico
Attn: Mr. Joe D. Ramey

Conoco
Hobbs, New Mexico
Attn: Mr. L. P. Thompson

The Permian Corporation
Houston, Texas
Attn: Mr. Michael H. Atnipp
(Lease #561457)

Phillips Petroleum Company

Exxon Corporation

TWOSG 104 (Rev. 8/12/75)

TEXAS WEST OIL & GAS CORPORATION

STATEMENT OF PAYOUT

Lease No. : 24060 DATE: 25 October 1977
Well Name & No. : Madera #1
Location : Sec. 5, T-24-S, R-34-E
County/Parish & State : Lea County, New Mexico
Period Covered : July thru September, 1977

PRIOR BALANCE TO BE RECOVERED $ 464,565.86

CURRENT EXPENDITURES

Intangible:					
Drilling & Completion	$ -0-	× 250 % *	$ -0-		
Equipment	$ 24,157.41	× 250 % *	$ 60,393.53		
Lease Operating Expense	$ 7,690.96	× 100 % *	$ 7,690.96		
Total Current Expenditures				$ 68,084.49	

CURRENT REVENUE

NONE	Bbls. Gross Value	$ -0-	
422,223	MCFs Gross Value	$ 663,777.44	
	Total Gross Value	$ 663,777.44	
Less:	Production Taxes	$ 46,254.10	
	Royalty Interest	$ 93,524.21	
	Transportation, Etc.	$ -0-	
	Total Current Revenue		$ (523,999.13)

CURRENT MONTH BALANCE $ 532,650.35

CURRENT BALANCE TO BE RECOVERED $ 8,651.22

*Percent Recovery NMOCC ORDER #R-5039-B

DISTRIBUTION:
Payout File
* Reversionary Interest (x) Conoco, et al
Working Interest (x) Exxon, et al
NMOCC-Santa Fe: Attn: Mr. Joe Ramey

NOTE: Property will reach payout during month of October, 1977

Form 104a (Rev. 8/24/73)

Lease No.	:	24060
Well Name & No.	:	Madera #1
Location	:	Section 5, T-24-S, R-34-E
County/Parish & State	:	Lea County, New Mexico
Date	:	July, August, September, 1977

INTANGIBLE DRILLING & COMPLETION

Access, Location & Roads	$	
Drilling Cost - Footage		
- Day Work		
- Other Expense		
Bits, Reamers, Stabilizers, etc.		
Water		
Fuel & Utilities		
Mud, Chemicals & Brine		
Cementing & Cementing Services		
Equipment Rentals		
Logging & Perforating		
Construction Material		
Transportation		
Other Logs & Surveys		
Supervision & Professional Services		
Wireline Service & Pulling Unit		
Coring & Testing		
Acidizing and Treating		
Roustabouting & Contract Labor		
Engineering & Geological		
Special Services		
Supplies		
Formation & Drill Stem Testing		
Contingencies		
		$ -0-

TANGIBLE LEASE AND WELL EQUIPMENT

Casing	$ 24,157.41	
Tubing		
Well Head Equipment		
Tanks, Separators, Flowlines, etc.		
Artificial Lift Equipment		
Packers, Subsurface Equipment, etc.		
Tangible Contingencies		
		$ 24,157.41

TWO&G 104b

Lease No.	:	24060
Well Name & No.	:	Madera #1
Location	:	Section 5, T-24-S, R-34-E
County/Parish & State	:	Lea County, New Mexico
Date	:	July thru September, 1977

LEASE OPERATING EXPENSES

Pumper/Operator Wages	$ 405.00	
Waste Water Disposal Costs	3,906.76	
General Lease Labor	-0-	
Electric Costs	-0-	
Equipment Repairs & Maintenance	67.55	
Overhead	829.65	
Tools & Equipment	-0-	
Surface Rentals	-0-	
Gas Compression	-0-	
Well Stimulation	-0-	
Supervision	-0-	
General Lease Supplies	-0-	
Miscellaneous Expense	2,482.00	$ 7,690.96
TOTAL		$ 31,848.37

TWOSG 104 (Rev. 8/12/75)

TEXAS WEST OIL & GAS CORPORATION

STATEMENT OF PAYOUT

Lease No. : 24060

Well Name & No. : Madera #1

Location : Section 5, T-24-S, R-34-E

County/Parish & State : Lea County, New Mexico

Period Covered : January thru March, 1977

DATE: 13 October 1977

Amended Statement
Supercedes Statement
dated 4-18-77

PRIOR BALANCE TO BE RECOVERED $ 1,585,132.07

CURRENT EXPENDITURES

Intangible:					
Drilling & Completion	$ -0-	× 250 %	*	$	-0-
Equipment	$ -0-	× 250 %	*	$	-0-
Lease Operating Expense	$ 5,777.04	× 100 %	*	$	5,777.04
Total Current Expenditures				$	5,777.04

CURRENT REVENUE

176	Bbls. Gross Value	$ 2,134.80	
515,054	MCFs Gross Value	$ 804,859.27	
	Total Gross Value	$ 806,994.07	
Less:	Production Taxes	$ 61,178.22	
	Royalty Interest	$ 113,378.38	
	Transportation, Etc.	$	
	Total Current Revenue		($ 632,437.47)

CURRENT MONTH BALANCE $ 1,590,909.11

CURRENT BALANCE TO BE RECOVERED $ 958,471.64

*Percent Recovery per NMOCC Order #R-5039-B

DISTRIBUTION:
Payout File
* Reversionary Interest (x) Conoco, et al
Working Interest (x) Exxon, et al
NMOCC-Santa Fe: Attn: Mr. Joe Ramey

TEXAS WEST OIL & GAS CORPORATION

Amended Gas Settlement Statement DATE: 13 October 1977

Lease: Madera #1 Activity Month: 01-77

County & State: Lea County, New Mexico Field: Bell Lake (South) Morrow

WHMCF	SETL MCF	GAS VAL	LEASE VALUE
204,942	204,942	320,256.65	320,256.65

TAX EX G&P	ADV TAX	SCHL TAX	SEV TAX	CON TAX	TOTAL TAX
25,586.33	3,244.32	7,514.09	11,050.14	530.45	22,339.00

EXXON INT: .08853100 SETL VOL: 18,143

GAS PR: 1.563605 GAS VALUE: 28,368.49

WI:	28,368.49	
RI:	774.76-	USA
RI:	1,937.40-	State
RI:	770.71-	Fee
TAX:	1,945.01-	
NET:	22,940.61	

Additional Monies due per RI & ORRI decimal interest adjustment.

PHILLIPS INT: .04426500 SETL VOL: 9,072

GAS PR: 1.563605 GAS VALUE: 14,185.02

WI:	14,185.02	
RI:	387.37-	USA
RI:	968.67-	State
RI:	385.34-	Fee
TAX:	972.57-	
NET:	11,471.07	

CONOCO, ET AL, INT: .0877973 SETL VOL: 17,993

GAS PR: 1.563605 GAS VALUE: 28,133.94

WI:	28,133.94	
RI:	6,146.95-	USA
RI:	15,371.18-	State
RI:	6,114.23-	Fee
TAX:	501.58-	
NET:	-0-	

REMITTED TO CONOCO:
FEE RI: 5,379.24 -5,274.69= $104.55
FEE ORRI: $1,891.04

TEXAS WEST, ET AL, INT: .77940670 SETL VOL: 159,734

GAS PR: 1.562405 GAS VALUE: 249,569.20

WI:	249,569.20	
RI:	-0-	USA
RI:	-0-	State
RI:	12,137.55-	Fee
TAX:	18,919.84-	
NET:	218,511.81	

TEXAS WEST OIL & GAS CORPORATION

Amended Gas Settlement Statement DATE: 13 October 1977

Lease: Madera #1 Activity Month: 02-77

County & State: Lea County, New Mexico Field: Bell Lake, South (Norrow)

WHMCF	SETL MCF	GAS VAL	LEASE VALUE
160,116	160,116	250,208.42	250,208.42

TAX EX G&P	ADV TAX	SCHL TAX	SEV TAX	CON TAX	TOTAL TAX
19,990.63	2,534.70	5,870.55	8,633.17	414.41	17,452.83

EXXON INT: .08853100 SETL VOL: 14,175

GAS PR: 1.563605 GAS VALUE: 22,164.10

WI:	22,164.10	
RI:	605.33-	USA
RI:	1,513.67-	State
RI:	602.14-	Fee
TAX:	1,519.62-	
NET:	17,923.34	

Additional Monies due per RI & ORRI decimal interest adjustment.

PHILLIPS INT: .04426500 SETL VOL: 7,088

GAS PR: 1.563605 GAS VALUE: 11,082.83

WI:	11,082.83	
RI:	302.65-	USA
RI:	756.83-	State
RI:	301.07-	Fee
TAX:	759.87-	
NET:	8,962.41	

CONOCO, ET AL, INT: .0877973 SETL VOL: 14,058

GAS PR: 1.563605 GAS VALUE: 21,981.16

RI:	21,981.16	
RI:	4,802.61-	USA
RI:	12,009.54-	State
RI:	4,777.13-	Fee
TAX:	391.88-	
NET:	-0-	

REMITTED TO CONOCO:
FEE RI: 4,202.80 -4,121.13= $81.67
FEE ORRI: $1,477.54

TEXAS WEST, ET AL, INT: .77940670 SETL VOL: 124,795

GAS PR: 1.562405 GAS VALUE: 194,980.33

WI:	194,980.33	
RI:	-0-	USA
RI:	-0-	State
RI:	9,482.80-	Fee
TAX:	14,781.46-	
NET:	170,716.07	

TEXAS WEST OIL & GAS CORPORATION

Amended Gas Settlement Statement DATE: 13 October 1977

Lease: Madera #1 Activity Month: 03-77

County & State: Lea County, New Mexico Field: Bell Lake, South (Morrow)

WHMCF	SETL MCF	GAS VAL	LEASE VALUE
149,996	149,996	234,394.20	234,394.20

TAX EX G&P	ADV TAX	SCHL TAX	SEV TAX	CON TAX	TOTAL TAX
18,726.26	2,374.50	5,499.53	8,087.55	388.20	16,349.78

EXXON INT: .08853100 SETL VOL: 13,279

GAS PR: 1.563605 GAS VALUE: 20,763.11

WI:	20,763.11	
RI:	567.07-	USA
RI:	1,417.99-	State
RI:	564.08-	Fee
TAX:	1,423.56-	
NET:	16,790.41	

Additional Monies due per RI & ORRI decimal interest adjustment.

PHILLIPS INT: .04428500 SETL VOL: 6,640

GAS PR: 1.563605 GAS VALUE: 10,382.34

WI:	10,382.34	
RI:	283.52-	USA
RI:	708.99-	State
RI:	282.04-	Fee
TAX:	711.84-	
NET:	8,395.95	

CONOCO, ET AL, INT: .0877973 SETL VOL: 13,169

GAS PR: 1.563605 GAS VALUE: 20,591.11

RI:	20,591.11	
RI:	4,498.81-	USA
RI:	11,249.88-	State
RI:	4,475.32-	Fee
TAX:	367.10-	
NET:	-0-	

REMITTED TO CONOCO:
FEE RI: 3,937.31 -3,860.47= $76.84
FEE ORRI: $1,384.13

TEXAS WEST, ET AL, INT: .77940670 SETL VOL: 116,908

GAS PR: 1.562405 GAS VALUE: 182,657.64

WI:	182,657.64	
RI:	-0-	USA
RI:	-0-	State
RI:	8,883.50-	Fee
TAX:	13,847.28-	
NET:	159,926.86	

TNOSG 104 (Rev. 8/12/75)

TEXAS WEST OIL & GAS CORPORATION

STATEMENT OF PAYOUT

DATE: 13 October 1977

Lease No. : 24060
Well Name & No. : Madera #1
Location : Section 5, T-24-S, R-34-E
County/Parish & State : Lea County, New Mexico
Period Covered : April-May-June, 1977

Amended Statement
Supercedes Statement
Dated 8-08-77

PRIOR BALANCE TO BE RECOVERED $ 958,471.64

CURRENT EXPENDITURES

Intangible:				
Drilling & Completion	$ -0-	× 250 % *	$ -0-	
Equipment	$ -0-	× 250 % *	$ -0-	
Lease Operating Expense	$ 4,898.62	× 100 % *	$ 4,898.62	
Total Current Expenditures			$ 4,898.62	

CURRENT REVENUE

174	Bbls. Gross Value	$ 2,028.50	
405,895	MCFs Gross Value	$ 634,450.50	
	Total Gross Value	$ 636,479.00	
Less:	Production Taxes	$ 48,262.87	
	Royalty Interest	$ 89,411.73	
	Transportation, Etc.	$ NONE	
	Total Current Revenue		$(498,804.40)

CURRENT MONTH BALANCE $ 963,370.26

CURRENT BALANCE TO BE RECOVERED $ 464,565.86

*Percent Recovery per NMOCC Order #R-5039-B

DISTRIBUTION:
Payout File
* Reversionary Interest (x) Conoco, et al
* Working Interest (x) Exxon, et al
NMOCC-Santa Fe: Attn: Mr. Joe Ramey

TWO&G 104 (Rev. 8/12/75)

TEXAS WEST OIL & GAS CORPORATION

STATEMENT OF PAYOUT

DATE: 13 October 1977

Lease No. : 24060
Well Name & No. : Madera #1
Location : Section 5, T-24-S, R-34-E
County/Parish & State : Lea County, New Mexico
Period Covered : October thru December, 1976

Amended Statement
Supercedes Statements
Dated 2-04-77 & 3-11-77

PRIOR BALANCE TO BE RECOVERED $ 2,507,769.64

CURRENT EXPENDITURES

Intangible:					
Drilling & Completion	$ -0-	× 250 %	*	$ -0-	
Equipment	$ -0-	× 250 %	*	$ -0-	
Lease Operating Expense	$ 4,554.45	× 100 %	*	$ 4,554.45	
Total Current Expenditures				$ 4,554.45	

CURRENT REVENUE

366	Bbls. Gross Value	$ 4,133.04	
791,266	MCFs Gross Value	$ 1,180,081.42	
	Total Gross Value	$ 1,184,214.46	
Less:	Production Taxes	$ 89,775.30	
	Royalty Interest	$ 167,247.14	
	Transportation, Etc.	$ -0-	
	Total Current Revenue		($ 927,192.02)

CURRENT MONTH BALANCE $ 2,512,324.09

CURRENT BALANCE TO BE RECOVERED $ 1,585,132.07

*Percent Recovery per NMOCC Order #R-5039-B

DISTRIBUTION:
Payout File
* Reversionary Interest (x) Conoco, et al
Working Interest (x) Exxon, et al
NMOCC-Santa Fe: Attn: Mr. Joe Ramey

TEXAS WEST OIL & GAS CORPORATION

Amended Gas Settlement Statement DATE: 13 October 1977

Lease: Madera Activity Month: 10-76

County & State: Lea County, New Mexico Field: Bell Lake, South (Morrow)

WHMCF	SETL MCF	GAS VAL	LEASE VALUE
306,422	306,422	449,040.28	449,040.28

TAX EX G&P	ADV TAX	SCHL TAX	SEV TAX	CON TAX	TOTAL TAX
35452.24	4553.60	10546.49	15509.55	744.47	31,354.11

EXXON INT: .08853100 SETL VOL: 27,128

GAS PR: .563511 GAS VALUE: 15,286.93

WI:	15286.93	
RI:	417.50-	USA
RI:	1044.00-	State
RI:	415.31-	Fee
TAX:	1048.11-	
NET:	12,362.01	

Additional Monies due per RI & ORRI decimal interest adjustment.

PHILLIPS INT: .04426500 SETL VOL: 13,564

GAS PR: 1.549655 GAS VALUE: 21,019.52

WI:	21,019.52	
RI:	574.01-	USA
RI:	1435.34-	State
RI:	571.04-	Fee
TAX:	1441.16-	
NET:	16,997.97	

CONOCO, ET AL, INT: .0877970 SETL VOL: 26,903

GAS PR: 1.554286 GAS VALUE: 41,814.96

RI:	41,814.96	
RI:	9,135.91-	USA
RI:	22,845.48-	State
RI:	9,088.09-	Fee
TAX:	745.48-	
NET:	-0-	

REMITTED TO CONOCO AS AGENT FOR:
Fee RI: 7453.99 -7272.01 = $181.98
Fee ORRI: $2620.45
USA: 10,127.42 -10,076.76 = $50.66

TEXAS WEST, ET AL, INT: .77940670 SETL VOL: 238,827

GAS PR: 1.553086 GAS VALUE: 370,918.87

WI:	370,918.87	
RI:	-0-	USA
RI:	-0-	State
RI:	18,039.50-	Fee
TAX:	28,119.36-	
NET:	324,760.01	

TEXAS WEST OIL & GAS CORPORATION

AMENDED Gas Settlement Statement DATE: 13 October 1977

Lease: Madera #1 Activity Month: 11-76

County & State: Lea County, New Mexico Field: Bell Lake (South) Morrow

WHMCF	SETL MCF	GAS VAL	LEASE VALUE
250,728	250,728	367,424.88	367,424.88

TAX EX G&P	ADV TAX	SCHL TAX	SEV TAX	CON TAX	TOTAL TAX
29,008.38	3,725.97	8,629.62	12,690.61	609.15	25,655.35

EXXON INT: .08853100 SETL VOL: 22,197

GAS PR: .563511 GAS VALUE: 12,508.25

WI:	12,508.25	
RI:	341.60-	USA
RI:	854.24-	State
RI:	339.83-	Fee
TAX:	857.59-	
NET:	10,114.99	

Additional Monies due per RI & ORRI decimal interest adjustment.

PHILLIPS INT: .04426500 SETL VOL: 11,099

GAS PR: 1.549655 GAS VALUE: 17,199.62

WI:	17,199.62	
RI:	469.70-	USA
RI:	1,174.53-	State
RI:	467.23-	Fee
TAX:	1,179.25-	
NET:	13,908.91	

CONOCO, ET AL, INT: .0877970 SETL VOL: 22,013

GAS PR: 1.554286 GAS VALUE: 34,214.50

WI:	34,214.50	
RI:	7,475.33-	USA
RI:	18,692.98-	State
RI:	7,436.21-	Fee
TAX:	609.98-	
NET:	-0-	

REMITTED TO CONOCO:
FEE RI: 6,099.15 -5,950.16 = $148.99
FEE ORRI: $2,144.12
USA: 8,286.63 -8,245.06 = $41.57

TEXAS WEST, ET AL, INT: .77940670 SETL VOL: 195,419

GAS PR: 1.553086 GAS VALUE: 303,502.51

WI:	303,502.51	
RI:	-0-	USA
RI:	-0-	State
RI:	14,760.76-	Fee
TAX:	23,008.53-	
NET:	265,733.22	

TEXAS WEST OIL & GAS CORPORATION

AMENDED Gas Settlement Statement DATE: 13 October 1977

Lease: Madera #1 Activity Month: 12-76

County & State: Lea County, New Mexico Field: Bell Lake (South) Morrow

WHMCF	SETL MCF	GAS VAL	LEASE VALUE
234,116	234,116	363,616.26	363,616.26

TAX EX G&P	ADV TAX	SCHL TAX	SEV TAX	CON TAX	TOTAL TAX
29,049.93	3,683.58	8,531.44	12,546.24	602.22	25,363.48

EXXON INT: .08853100 SETL VOL: 20,727

GAS PR: 1.554286 GAS VALUE: 32,215.68

WI:	32,215.68	
RI:	879.83-	USA
RI:	2,200.12-	State
RI:	875.33-	Fee
TAX:	2,208.69-	
NET:	26,051.71	

Additional Monies due per RI & ORRI decimal interest adjustment.

PHILLIPS INT: .04426500 SETL VOL: 10,363

GAS PR: 1.549655 GAS VALUE: 16,059.07

WI:	16,059.07	
RI:	438.55-	USA
RI:	1,096.64-	State
RI:	436.31-	Fee
TAX:	1,101.00-	
NET:	12,986.57	

CONOCO, ET AL, INT: .0877970 SETL VOL: 20.555

GAS PR: 1.554286 GAS VALUE: 31,948.35

RI:	31,948.35	
RI:	6,980.12-	USA
RI:	17,454.67-	State
RI:	6,943.81-	Fee
TAX:	569.75-	
NET:	-0-	

REMITTED TO CONOCO:
FEE RI: 6,108.23 -5,988.73 = $119. 50
FEE ORRI: 2,147.22

TEXAS WEST, ET AL, INT: .77940670 SETL VOL: 182,471

GAS PR: 1.553086 GAS VALUE: 283,393.16

WI:	283,393.16	
RI:	-0-	USA
RI:	-0-	State
RI:	13,782.73-	Fee
TAX:	21,484.04-	
NET:	248,126.39	

TWOEG 104 (Rev. 8/12/75)

TEXAS WEST OIL & GAS CORPORATION

STATEMENT OF PAYOUT

DATE: 13 October 1977

Lease No. : 24060
Well Name & No. : Madera #1
Location : Section 5, T-24-S, R-34-E
County/Parish & State : Lea County, New Mexico
Period Covered : July thru September, 1976

Amended Statement
Supercedes Statements
Dated 11-08-76 & 3-11-77

PRIOR BALANCE TO BE RECOVERED $ 3,565,508.71

CURRENT EXPENDITURES

Intangible:					
Drilling & Completion	$ -0-	× 250 %	*	$	-0-
Equipment	$ -0-	× 250 %	*	$	-0-
Lease Operating Expense	$ 6,796.88	× 100 %	*	$	6,796.88
Total Current Expenditures				$	6,796.88

CURRENT REVENUE

347 //	Bbls. Gross Value	$ 4,265.52
1,074,244	MCFs Gross Value	$ 1,346,111.34
	Total Gross Value	$ 1,350,376.86
Less:	Production Taxes	$ 99,996.66
	Royalty Interest	$ 185,844.25
	Transportation, Etc.	$ -0-
	Total Current Revenue	($ 1,064,535.95)

CURRENT MONTH BALANCE $ 3,572,305.59

CURRENT BALANCE TO BE RECOVERED $ 2,507,769.64

*Percent Recovery per NMOCC Order #R-5039-B

DISTRIBUTION:
Payout File
* Reversionary Interest (x) Conoco, et al
Working Interest (x) Exxon, et al
NMOCC-Santa Fe: Attn: Mr. Joe Ramey

TEXAS WEST OIL & GAS CORPORATION
AMENDED Gas Settlement Statement DATE: 13 October 1977

Lease: Madera #1 Activity Month: 07-76
County & State: Lea County, New Mexico Field: Bell Lake (South) Morrow

WHMCF	SETL MCF	GAS VAL	LEASE VALUE
386,310	386,310	315,102.32	315,102.32

TAX EX G&P	ADV TAX	SCHL TAX	SEV TAX	CON TAX	TOTAL TAX
21,701.03	2,419.97	7,481.73	11,002.55	528.13	21,432.38

EXXON INT: .08853100 SETL VOL: 34,200*(5,159 **)
GAS PR: .563511* .532757** GAS VALUE: 22,020.56

WI:	22,020.56	
RI:	-601.40	USA
RI:	-1,503.85	State
RI:	-600.03	Fee
TAX:	-1,454.70	
NET:	17,860.58	

Additional Monies due per RI & ORRI decimal interest adjustment.

PHILLIPS INT: .04426500 SETL VOL: 17,100* (2,579**)
GAS PR: .563511* .975307** GAS VALUE: 12,151.36

WI:	12,151.36	
RI:	-331.83	USA
RI:	-829.79	State
RI:	-331.08	Fee
TAX:	-802.75	
NET:	9,855.91	

CONOCO, ET AL, INT: .0877970 SETL VOL: 33,917* (5,116**)
GAS PR: .563511* .975307** GAS VALUE: 24,102.27

WI:	24,102.27	
RI:	-5,265.97	USA
RI:	-13,168.19	State
RI:	-5,254.06	Fee
TAX:	-414.05	
NET:	-0-	

REMITTED TO CONOCO:
FEE RI: 4,576.38 -4,483.93= $92.45
FEE ORRI: $1,608.79
USA: 6,199.20 -6,194.80= $4.40

TEXAS WEST, ET AL, INT: .779407 SETL VOL: 301,093*(45,419**)
GAS PR: .731365* .806254** GAS VALUE: 256,828.13

WI:	256,828.13	
RI:	-0-	USA
RI:	-0-	State
RI:	12,528.07-	Fee
TAX:	18,760.88-	
NET:	225,539.18	

TEXAS WEST OIL & GAS CORPORATION
Gas Settlement Statement

Lease: Madera #1 Activity Month: 08-76
County & State: Lea County, New Mexico Field: Bell Lake (South) Morrow

WHMCF	SETL MCF	GAS VAL	LEASE VALUE
360,754	360,754	540,663.45	540,663.45

TAX EX G&P	ADV TAX	SCHL TAX	SEV TAX	CON TAX	TOTAL TAX
42,973.62	4,104.95	12,691.09	18,663.37	895.84	36,355.25

EXXON INT: .08853100 SETL VOL: 31,938
GAS PR: 1.096268 GAS VALUE: 35,012.61

WI:	35,012.61	
RI:	956.23-	USA
RI:	2,391.17-	State
RI:	954.06-	Fee
TAX:	2,313.09-	
NET:	28,398.06	

Additional Monies due per RI & ORRI decimal interest adjustment.

PHILLIPS INT: .04426500 SETL VOL: 15,969
GAS PR: 1.538818 GAS VALUE: 24,573.38

WI:	24,573.38	
RI:	671.06-	USA
RI:	1,678.07-	State
RI:	669.55-	Fee
TAX:	1,623.52-	
NET:	19,931.18	

CONOCO, ET AL, INT: .0877970 SETL VOL: 31,673
GAS PR: 1.538818 GAS VALUE: 48,738.98

RI:	48,738.98	
RI:	10,648.70-	USA
RI:	26,628.39-	State
RI:	10,624.61-	Fee
TAX:	837.28-	
NET:	-0-	

REMITTED TO CONOCO:
FEE RI: 9,062.40 -8,866.41 = $195.99
FEE ORRI: $3,185.82
USA: $12,275.99 -12,249.49 = $26.50

TEXAS WEST, ET AL, INT: .77940670 SETL VOL: 281,174
GAS PR: 1.537619 GAS VALUE: 432,338.48

WI:	432,338.48	
RI:	-0-	USA
RI:	-0-	State
RI:	21,089.48-	Fee
TAX:	31,581.46-	
NET:	379,667.54	

TEXAS WEST OIL & GAS CORPORATION
600 MIDLAND NATIONAL BANK BUILDING
MIDLAND, TEXAS 79701

L. R. DUNNAVANT, President

DISTRICT OFFICE:
Lafayette, Louisiana 70501
F. L. Dischler, Manager
Oil Center Station, Box 52332
(318) 232-8387

19 November 1975

✔ State of New Mexico
Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501
Attention: Mr. Joe D. Ramey, Member & Secretary

All Working Interest Owners
Bell Lake Unit
c/o Continental Oil Company, Operator
P. O. Box 460
Hobbs, New Mexico 88240

Re: Texas West Oil & Gas Corporation's
"MADERA" #1
Proposed (Morrow) Development Well
1980' FN&EL's of Section 5, T-24-S,
R-34-E, NMPM, South Bell Lake
(Morrow) Field, Lea County, New Mexico.
Pursuant to NMOCC Order No. R-5039-B
dated November 17, 1975 with Reference
to Case No. 5493.

Gentlemen:

Pursuant to the instructions contained in subject order regarding subject well, Texas West Oil & Gas Corporation hereby submits an AFE reflecting the estimated drilling and completion and related expenses pertaining to subject well. The total updated Intangible Costs for a completed well are estimated to be $782,595.; the total updated Tangible Costs are estimated to be $401,709.; and the total Intangible and Tangible Costs for a completed well are $1,184,304. Conoco testified at the hearing held on October 23, 1975 that the estimated drilling and completion costs for subject well would be at least $1,250,000. which is slightly more than the total estimated cost, above.

However, it is believed that under normal conditions, without abnormal drilling and/or completions problems, that the attached AFE is reasonable and applicable.

Also, attached, is a copy of NMOCC Form C-102 reflecting the well location and pooled area which encompasses all of the east half (E/2) of Section 5, T-24-S, R-34-E.

As you know, by subject NMOCC Order No. R-5039-B, Texas West Oil & Gas Corporation has been designated Operator of subject pooled area with said Order containing, among others, the following provisions:

1) Texas West Oil & Gas Corporation will be allowed to recover from production 150% of the pro rata share of reasonable well costs attributable to each non-consenting working interest owner who has not paid his share of estimated well costs within fifteen (15) days from the date the schedule of estimated well costs is furnished to him.

2) Any unsevered mineral interest shall be considered a seven-eighths (7/8) working interest and a one-eighth (1/8) royalty interest for the purpose of allocating costs and charges under the terms of the Order.

3) Within fifteen (15) days from the date the schedule of estimated well costs is furnished to him, any non-consenting working interest owner shall have the right to pay his share of estimated well costs to the Operator in lieu of paying his share of reasonable well costs out of production, and that any such owner who pays his share of estimated well costs as provided above shall remain liable for operating costs, but shall not be liable for risk charges.

Texas West Oil & Gas Corporation owns a lease covering an undivided 7/32 of the total interest in subject tract (21.875% Working Interest). Texas West Oil & Gas Corporation's proportionate share of the estimated total wells costs per attached AFE is $259,067. The Bell Lake Unit Participant's total proportionate share is $925,237. if they participate in the drilling and completion of subject well.

Since Continental Oil Company is the Operator of the Bell Lake Unit and, further, since Texas West Oil & Gas Corporation does not have nor does it have access to a detailed list of the participants and their mailing address, and since Continental Oil Company has been the spokesman at all hearings and on all matters for the

Unit participants, Texas West Oil & Gas Corporation considers this notice to Continental Oil Company as Operator of the Bell Lake Unit the same as if it were direct notification to all participants, individually.

Texas West Oil & Gas Corporation is submitting this notification and information by registered mail. We would appreciate an early reply from Conoco, however, no later than fifteen (15) days from the date of receipt of this letter. Upon receipt of notification by any/all Working Interest Owners who elect to participate and thereto attach a check for their proportionate share of the estimated costs for the drilling and completion per attached AFE, Texas West will submit to said Working Interest Owner or Owners a standard Operating Agreement to cover the pooled acreage within fifteen (15) days after receipt of said notification.

This will advise all concerned that Texas West Oil & Gas Corporation will do everything in its power to carry out the orders set down in this case by the NMOCC in a prudent and workmanlike manner.

Yours very truly,

TEXAS WEST OIL & GAS CORPORATION

L. N. Dunnavant
President

LND:as

xc: Hinkle, Bondurant, Cox & Eaton - Roswell, New Mexico

Attachments

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

RECEIVED
NOV 26 1975
OIL CONSERVATION COMM.
Santa Fe

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
Texas West Oil & Gas Corporation	Madera	1

Unit Letter	Section	Township	Range	County
G	5	24 South	34 East	Lea

Actual Footage Location of Well: 1980 feet from the North line and 1980 feet from the East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
3586.4'	Morrow	Bell Lake South	320± Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

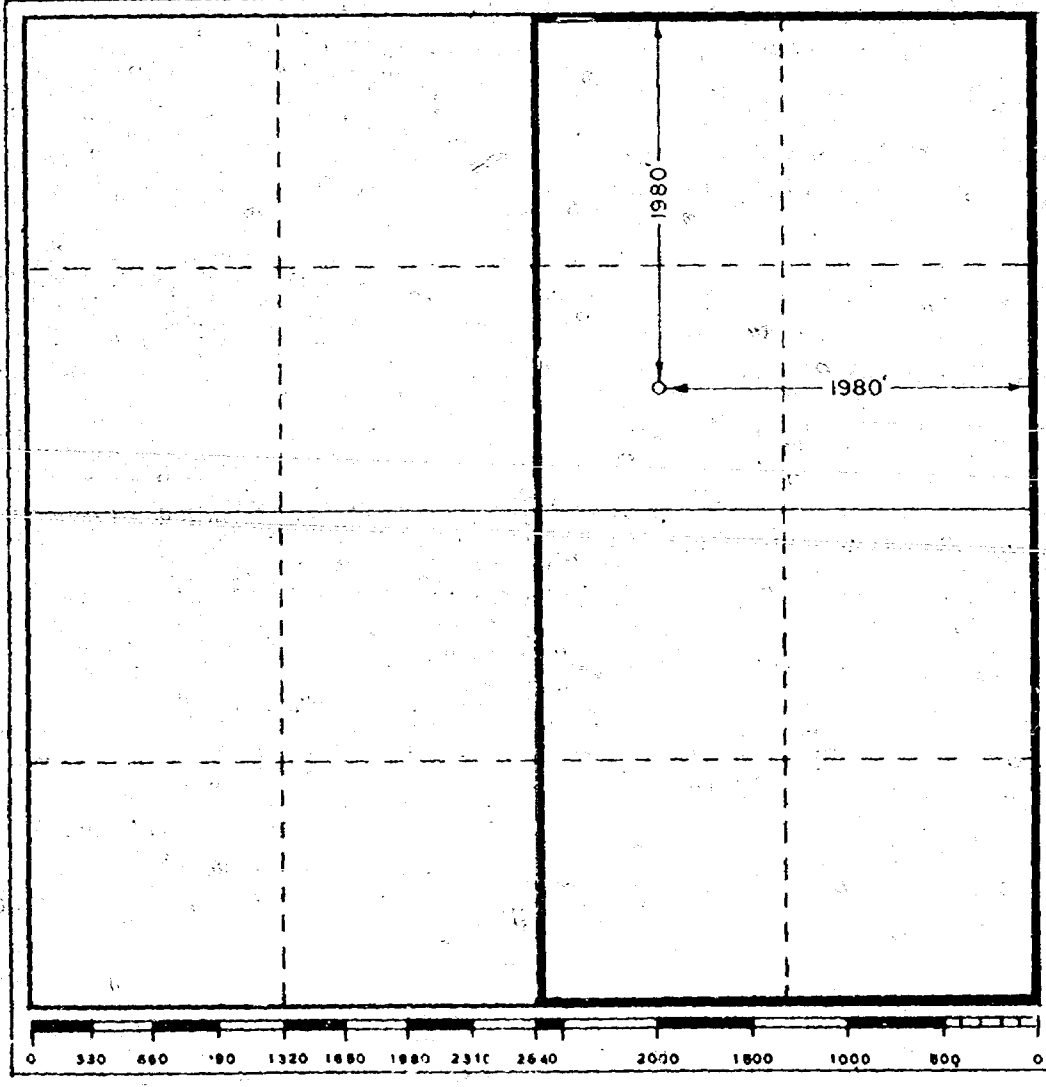
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling. etc?

[X] Yes [ ] No If answer is "yes," type of consolidation Force Pooled

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: L. N. Dunnavant

Position: President

Company: Texas West Oil & Gas Corporation

Date: 8 August 1975

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: August 6, 1975

Registered Professional Engineer and/or Land Surveyor: 676

Certificate No. 676

REGISTERED PROF. ENGINEER & LAND SURVEYOR
NEW MEXICO
JOHN W. WEST

TWO&G Form 106

TEXAS WEST OIL & GAS CORPORATION
609 Midland National Bank Building
Midland, Texas 79701

AUTHORITY FOR EXPENDITURE

Date: November 17, 1975

AFE # 108c

Wildcat	Development
( ) Drilling	(X) Drilling
( ) Completion	(X) Completion
	( ) Drill Deeper
	( ) Workover

Lease Name Madera | Well No. 1 | Proposed Depth 14,200'

County Lea | State New Mexico | Well Location 1980' FNL & EL Sec. 5, T-24-S, R-34-E

Actual Spud Date 10-16-75 | Estimated Days to Drill 100 | To Complete 12

Field: Bell Lake South (Morrow)

INTANGIBLE WELL COST	DRY HOLE	COMPLETED WELL
Access, Location & Roads	$ 17,000.	$ 17,000.
Rig Move	35,000.	35,000.
Footage Cost	-0-	-0-
Day Work Cost (100 days @ $3575.; 12 days @ $3225.)	357,500.	396,200.
Bits & Reamers	65,600.	65,600.
Fuel	-0-	-0-
Water	8,000.	8,000.
Mud & Chemicals	82,000.	82,000.
Cementing & Services	48,000.	55,000.
Coring	-0-	-0-
Surveying & Testing	23,000.	23,000.
Mud Logging	9,900.	9,900.
Perforating	-0-	5,500.
Stimulation	-0-	7,500.
Transportation	10,000.	12,000.
Drilling Overhead Cost	5,265.	5,895.
Other Drilling Expense	35,000.	35,000.
Contingencies	20,000.	25,000.
Total Intangible Well Cost	$ 716,265.	$ 782,595.

TANGIBLE WELL COSTS					
30	of 30	"	Conductor Csg.	$ 450.	$ 450.
500	of 16	"	Surface Casing	9,200.	9,200.
5,200	of 10-3/4	"	Intermediate Csg.	98,342.	98,342.
12,000	of 7-5/8	"	Intermediate Csg.	136,296.	136,296.
	of	"	Production Casing	-0-	-0-
2,600	of 5	"	Liner	-0-	30,079.
13,800	of 2-7/8"	"	Tubing	-0-	42,842.
Liner Equipment				-0-	3,000.
Wellhead Equipment				7,500.	24,000.
Producing Facilities, Tank Batteries, Flowlines				-0-	35,000.
Packers & Other Subsurface Tools				1,500.	7,500.
Contingencies				10,000.	15,000.
Total Tangible Well Costs				$ 263,288.	$ 401,709.
TOTAL WELL COST				$ 979,553.	$ 1,184,304.

Acreage Cost	$ -0-
Geological (Acquisition) Cost	-0-

TOTAL WELL COST + ACREAGE & GEOLOGICAL COSTS	$ 979,553.	$ 1,184.304.

APPROVED BY: _____

COMPANY: _____

DATE: _____ _____

TEXAS WEST OIL & GAS CORPORATION

DAILY DRILLING REPORTS

MADERA #1
Lea Co., N.M.

10-19-75
Cont'd

plus 600 sx Class "C" cmt w/2% CaChl. Full returns & cmt circ. Circ 50 sx to surface. Job Complete @ 5:15 a.m. 10-19-75
Daily Cost: $14,256.00
Total Cost: $58,146.00
Drilling days: 3

10-20-75

TD 515' Making up drlg assembly & prep to GIH to test BOP's & start drlg. Hydrite & Red Beds. WOC for 12 hrs before cutting off csg.
Daily Cost: $ 9,650.00
Total Cost: $67,796.00
Drilling days: 4

10-21-75

Drlg 1010' Hydrite & Red Beds; Made 495'/24 hrs, Bit #2: OWB 14-3/4", made 495'/17-1/2 hrs, WOB 60,000#, 55 RPM, 67 SPM, PP 2000#, MW 9.9, Brine wtr, pH 11. Tested BOP to 750# Held OK, Drlg 6' cmt above float collar, & 40' cmt in the guide shoe jt.
Surveys: 1/2° @ 600'
1/4° @ 846'
Daily Cost: $ 4,536.00
Total Cost: $72,332.00
Drilling days: 5

10-23 2246 drlg

TEXAS WEST OIL & GAS CORPORATION

DAILY DRILLING REPORTS

MADERA #1
1980'FNL & 1980'FEL
Sec. 5, T-24-S, R-34-E,
Lea Co., New Mexico

9-16-75	Allstate Construction Co. started making location
9-25-75	Allstate finished making location.
9-29-75	Executed Drlg Contract w/A.W. Thompson Drilling Company; pulling water well and repairing pump.
10-10-75	Started MIRT
10-13-75	MIRT
10-14-75	MIRT
10-15-75	MIRT
10-16-75	MIRT
10-17-75	Drlg 180' Sand & Red Beds Made 180'/24 hrs, Bit #1: OSC3, 20", made 180'; WOB 3-5,000#, 60 RPM, PP 300#, MW 9.2, Vis 32, pH 11, Spudded @ 9:30 p.m. 10-16-75; Rotary bushing to ground level 26.30' Surveys: 1° @ 100' 1° @ 163' Daily Cost: $35,600.00 Drilling days: 1
10-18-75	TD 423' Mixing mud & lost circ material. Red Beds, Made 243'/24 hrs, Bit #1: 14-3/4", retip made 423'/31 hrs, WOB: 5-15,000#, 60 RPM, 80 SPM, PP 200#, MW 8.6, Vis 32, PH 11. Surveys: 1/2° @ 220' 3/4" @ 276' 3/4° @ 337' 3/4° @ 393' Daily Cost: $ 8,290.00 Total Cost: $43,890.00 Drilling days: 2
10-19-75	WOC @ 515' Installing BOP & GIH w/Bit #2; Hydrite & Red Beds; Made 92'/24 hrs, Bit #1 made total 515'/55-1/2 hrs, WOB 5-15,000#, 60 RPM, 80 SPM, PP 200#, MW 8.6, Vis 32, pH 11. Surveys: 3/4° @ 515' Lost circ @ 423', mixed one batch of mud; lost circ material; no returns; mixed another batch & lost circ material & obtained circ for 5 min; dry drilled 423-467'; 467'-regained circ. Ran 534' of 16", 65#, H-40 csg. Set @ 515'. Cmtd w/300 sx Halliburton Lite Weight w/1/4# Flocele, sk. & 2% CaCl

Not introduced

Exh. No. 7

TWO&G Form 106

TEXAS WEST OIL & GAS CORPORATION
609 Midland National Bank Building
Midland, Texas 79701

AUTHORITY FOR EXPENDITURE

Date: September 3, 1975

AFE # 108-b

Wildcat	Development
( ) Drilling	(X) Drilling
( ) Completion	(X) Completion
	( ) Drill Deeper
	( ) Workover

Lease Name: Madera
Well No.: 1
Proposed Depth: 14,200'
County: Lea
State: New Mexico
Well Location: 1980' FN & EL Sec. 5, T-24-S, R-34-E

Spud Date: Est. 10/15/75
Estimated Days to Drill: 100
To Complete: 12
Field: Bell Lake South (Morrow)

INTANGIBLE WELL COST	DRY HOLE	COMPLETED WELL
Access, Location & Roads	$ 17,000.	$ 17,000.
Rig Move	35,000.	35,000.
Footage Cost	-0-	-0-
Day Work Cost (100 days @ $2700.; 12 days @ $2600.)	270,000.	301,200.
Bits & Reamers	65,600.	65,600.
Fuel	-0-	-0-
Water	8,000.	8,000.
Mud & Chemicals	72,000.	72,000.
Cementing & Services	48,000.	55,000.
Coring	-0-	-0-
Surveying & Testing	23,000.	23,000.
Mud Logging	9,900.	9,900.
Perforating	-0-	5,500.
Stimulation	-0-	7,500.
Transportation	10,000.	12,000.
Drilling Overhead Cost	5,265.	5,895.
Other Drilling Expense	25,000.	25,000.
Contingencies	20,000.	25,000.
Total Intangible Well Cost	$ 608,765.	$ 667.595.

TANGIBLE WELL COSTS				
30 ' of 30 "	Conductor Csg.	$ 450.	$ 450.
500 ' of 16 "	Surface Casing	9,200.	9,200.
5,200 ' of 10-3/4 "	Intermediate Csg.	98,342.	98,342.
12,000 ' of 7-5/8 "	Intermediate Csg.	136,296.	136,296.
' of "	Production Casing	-0-	-0-
2,600 ' of 5 "	Liner	-0-	30,079
13,800 ' of 2-7/8 "	Tubing	-0-	42,842
Liner Equipment		-0-	3,000.
Wellhead Equipment		7,500.	24,000.
Producing Facilities, Tank Batteries, Flowlines		-0-	35,000.
Packers & Other Subsurface Tools		1,500.	7,500.
Contingencies		10,000.	15,000.
Total Tangible Well Costs		$ 263,288.	$ 401,709.
TOTAL WELL COST		$ 872,053.	$ 1,069,304.

Acreage Cost	$ -0-	
Geological (Acquisition) Cost	-0-	
TOTAL WELL COST + ACREAGE & GEOLOGICAL COSTS	$ 872,053.	$ 1,069,304.

APPROVED BY: _____

COMPANY: _____

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

Operator: Texas West Oil & Gas Corporation			Lease: Madera	Well No.: 1
Unit Letter: G	Section: 5	Township: 24 South	Range: 34 East	County: Lea
Actual Footage Location of Well: 1980 feet from the North line and 1980 feet from the East line				
Ground Level Elev.: 3586.4'	Producing Formation: Morrow		Pool: Bell Lake South	Dedicated Acreage: 320± Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

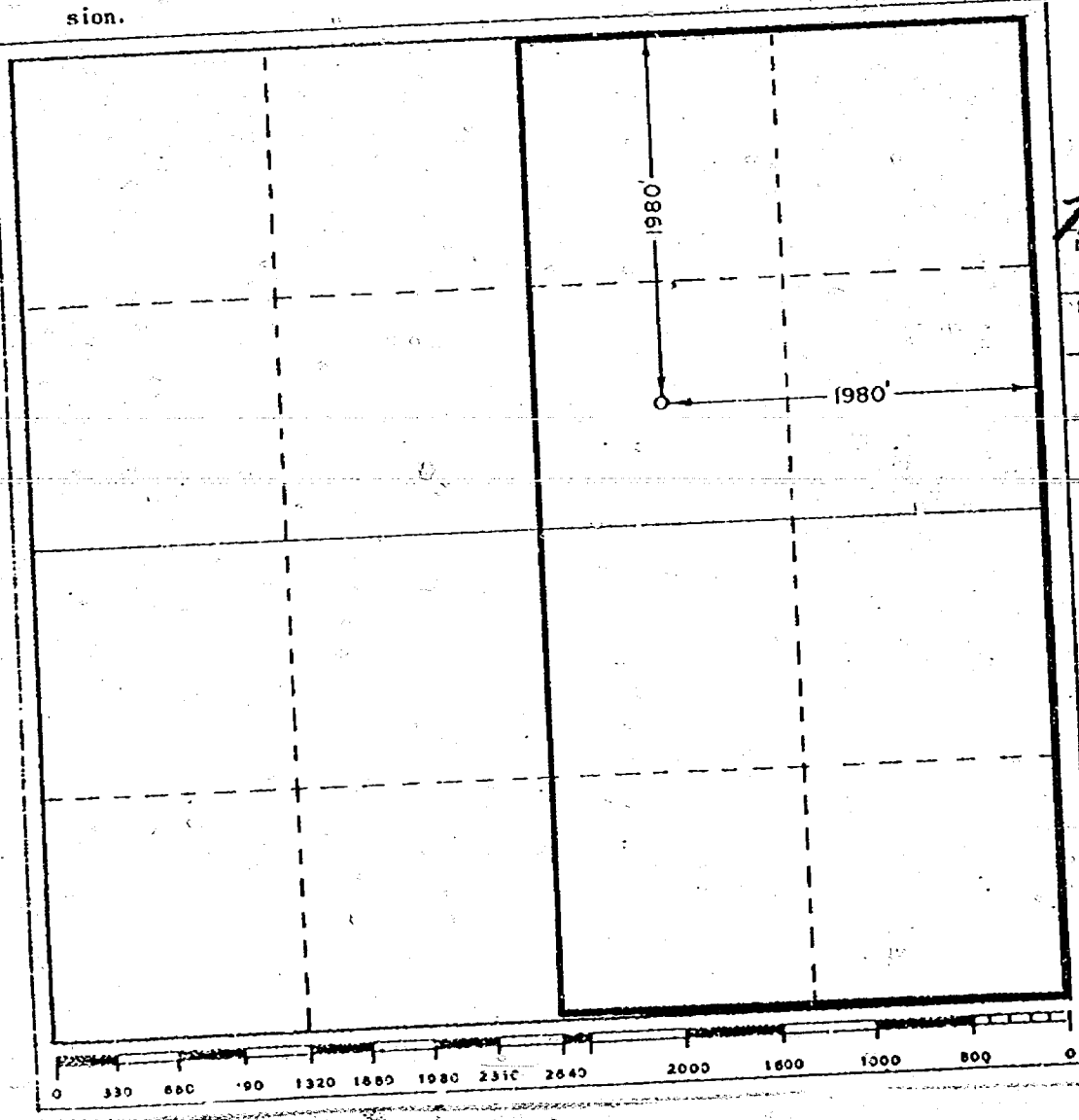
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling. etc?

☒ Yes ☐ No If answer is "yes," type of consolidation Force Pooled

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.)

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: L. N. Dunnavant

Position: President

Company: Texas West Oil & Gas Corporation

Date: 8 August 1975

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: August 7, 1975

Registered Professional Engineer and/or Land Surveyor: 676

Certificate No. JOHN W. WEST 676

REGISTERED PROFESSIONAL ENGINEER & LAND SURVEYOR STATE OF NEW MEXICO

Unit participants, Texas West Oil & Gas Corporation considers this notice to Continental Oil Company as Operator of the Bell Lake Unit the same as if it were direct notification to all participants, individually. This consideration by Texas West Oil & Gas Corporation is further, substantiated by a statement in the form of a question contained in that particular letter from Texas West Oil & Gas Corporation to Continental Oil Company, Attention: Mr. L. P. Thompson, dated February 28, 1975, quote, "Texas West Oil & Gas Corporation assumes that Conoco, as Operator of the Bell Lake Unit, has the authority to commit the interests of the other unit participants. If Conoco does not have this authority and if it is necessary that Texas West Oil & Gas Corporation contact the other unit participants, direct, we would appreciate it if you would so advise and provide us with a list of the names of the other participants and their addresses as soon as possible"; and by Continental Oil Company's letter dated March 26, 1975, in answer to the aforementioned letter which is self-explanatory in that Conoco did not provide names and addresses of unit participants and, further, Conoco dictated the Bell Lake Unit's position in subject matter along with the Unit's refusal to approve Texas West's request.

Texas West Oil & Gas Corporation is submitting this notification and information by registered mail. We would appreciate an early reply from Conoco, however, no later than thirty (30) days from the date of receipt of this letter.

This will advise all concerned that Texas West Oil & Gas Corporation will do everything in its power to carry out the orders set down in this case by the NMOCC in a prudent and workmanlike manner.

Yours very truly,

TEXAS WEST OIL & GAS CORPORATION

L. N. Dunnavant
President

LND:as
xc: Hinkle, Bondurant, Cox & Eaton - Roswell, New Mexico

Attachments

pooling order is highly speculative. It is not the kind of substantial evidence the Commission should look to in entering a compulsory pooling order.

As to correlative rights, if they are going to be violated, Texas West and its lessors have only to join the Bell Lake Unit to protect them.

If the compulsory pooling application is to be approved, no risk factor should be allowed, and the charges for supervision should be sharply reduced from that previously granted.

It is respectfully urged that the application of Texas West Oil & Gas Corporation be denied.

Respectfully submitted,

CONTINENTAL OIL COMPANY

By Jason W. Kellahin

KELLAHIN & FOX
P. O. Box 1769
Santa Fe, New Mexico 87501

ATTORNEYS FOR CONTINENTAL OIL COMPANY

Gross Value of Estimated Cumulative Gas Production to April 6, 1976, above, Using Current Day Gas Price of $1.00/MCF:	$7,722,547.
TWO&GC's Net Share of Cumulative Gross Value, above:	$1,372,561.
Mineral Interest Owner's Net Share of Cumulative Gross Value, above:	$ 316,746.
TWO&GC's Net Share of Current Daily Gas Value (Using September Daily Average Production of 16,993 MCF):	$ 3,020.
Per Month:	$ 91,808.
Mineral Interest Owner's Net Share of Current Daily Gas Value:	$ 697.
Per Month:	$ 21,188.

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 6
Submitted by Texas West
Hearing Date

Texas West Oil & Gas Corporation
ECONOMIC FACTORS
NMOCC Case No. 5493
Lea County, New Mexico.

Cumulative Gas Production to October 1, 1975, on Conoco's Bell Lake Unit #14 Well: 4,544,856 MCFG

Gross Value of Above Production using Current Day Gas Price of $1.00/MCF: $4,544,856.

TWO&GC's Net Share of Gross Value, above: $ 807,777.
(Texas West's net interest in E/2 Section 5, Madera Lease, is 17.77343% with a Working Interest of 21.8750% in 320 acre unit.)

Mineral Interest Owner's Net Share of Gross Value of Gas, above: $ 186,410.
(Rubert Madera, et ux, Ruford Madera, et ux and Mildred A. Broman have a combined total net Royalty Interest of 4.10157% in 320 acre unit in E/2 Section 5.)

Estimated Cumulative Gas Production on Conoco's Bell Lake Unit #14 Well to April 6, 1976 (*which is the earliest possible date that TWO&GC's Madera #1 Well can be selling gas, below) using September's Average Daily Production of 16,993 MCFG/D: 187 x 16,993 +4,544,856 = 7,722,547 MCFG

(*Spud date: October 16, 1975
Estimated days to drill and complete per AFE mailed to NMOCC and Conoco by letter dated September 8, 1975: 112
Estimated days to install gas purchase line to Madera Well: 60
Total Days: 172

172 Days from spud date of October 16, 1975 is April 6, 1976; total producing days from October 1, 1975 to April 6, 1976 is 187 days.)

EXH. NO. 6

CONTINENTAL OIL COMPANY
Bell Lake Unit #14 Well
Section 5, T-24-S, R-34-E,
South Bell Lake (Morrow) Field,
Lea County, New Mexico.

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 5
Submitted by Texas West
Hearing Date

Monthly Production as Reported in the Monthly NMOCC Oil & Gas Production Reports.

Year	Month	Monthly/MCFG	Daily Avg./MCFG
1974	August (First reported production)	233,251	7,524
1974	September	288,155	9,605
1974	October	296,677	9,570
1974	November	289,468	9,649
1974	December	301,441	9,724
	Cumulative 1974	1,408,992	
1975	January	295,260	9,525
1975	February 1/	262,375	9,370
1975	March 2/	40,273 (?)	1,299 (?)
1975	April 3/	306,135	10,205
1975	May 4/	423,994	13,677
1975	June	433,606	14,453
1975	July 5/	418,635	13,504
1975	August	445,785	14,380
1975	September 6/	509,801	16,993
	Cumulative thru 9/75	4,544,856	

1/ Texas West Oil & Gas Corporation mailed letter to Conoco requesting AFE to drill east offset on Madera Lease on February 28, 1975.

2/ Texas West received answer to above letter from Conoco dated March 26, 1975, wherein they refused Texas West's proposal of February 28, 1975.

3/ Made application to NMOCC for Hearing on Compulsory Pooling of E/2 Section 5 (Madera Lease) on April 29, 1975.

4/ Hearing on Compulsory Pooling of E/2 Section 5 (Madera Lease) was held on May 28, 1975. 1st Order #R-5039 issued by NMOCC on June 10, 1975.

5/ Second Hearing on Compulaory Pooling of Madera Lease was held on July 25, 1975. 2nd Order #R-5039-A issued by NMOCC on September 2, 1975.

6/ Conoco filed for re-hearing Case No. 5493 on September 22, 1975. NMOCC agreed to full re-hearing on October 1, 1975.

FTP 5500#+ Feb

Now 4500

EXH. NO. #5

Despite what Texas West's attorney claims, this case is unique in the history of the Oil Conservation Commission. Never before has an applicant, owning a small fractional, uncommitted interest within the boundaries or an approved unit, and within the participating area of that unit, sought to force pool such acreage for his own greedy advantage. Success in this case will mean the deletion of the E/2 of Section 5 from the Bell Lake Unit for Morrow production. It would cast serious doubt on the integrity of any unit where there are uncommitted interests, no matter how small. This is not the usual case of a "window" in the unit. It is a case of a small, undivided fractional interest within the committed acreage and participating area that is uncommited. If it can be said it is a sort of "Venetian blind" within the unit, the Commission can, and in the interests of conservation, should close it.

DRILLING WELL

Over Continental's objection Texas West offered evidence to show that it was already drilling the proposed well and that it was at considerable depth. Admission of this testimony was error. Consideration of this in a decision of this case denies Continental basic fair play and due process, required of all administrative agencies. The testimony was irrelevant and the fact that Texas West, before receiving a final order, elected to proceed to drill, is wholly immaterial. Texas West's drilling, even with the approval of the Commission, given before the time for application for a rehearing had expired, was at Texas West's own risk. That it has assumed this risk can have no bearing on the decision in this case,

no matter how costly an adverse decision may prove to Texas West.

RISK FACTOR

All of the testimony, both by the proponents and opponents, was to the effect that Texas West's well would encounter excellent production in the fourth Morrow zone. There is an absolute minumum of risk on that point.

The only other testimony regarding a risk was directed to the possiblility of a blowout. If this truly be a danger, the drilling of this unnecessary well raises a danger of waste. We submit, however, that the evidence shows the danger of a blowout is minimal, if the well is properly drilled. Continental as operator of the Bell Lake Unit has drilled numerous wells about which we were not permitted to testify. Again the testimony is in the previous hearings and available to the Commission and we contend it is material to this case.

Continental has experienced some problems in the Morrow formation, but has had no serious difficulities since 1957. It has gained experience in the control of pressures encountered in this area, and its experience and that of other competent operators shows that there is very little risk of a blowout.

The risk of drilling this well is minimal. No risk factor should be allowed in the event the Commission sees fit to enter a new compulsory pooling order.

SUPERVISION

The evidence offered by Continental shows the supervision charges requested by Texas West, and allowed by the

Commission in its two previous orders, are excessive. They should be reduced in line with the testimony offered at the October 23rd hearing.

CONCLUSION

Continental, as operator of the Bell Lake Unit, has offered extensive testimony to show that if the application is approved waste will occur. The record is explicit as to the kind of waste that will result with a compulsory pooling order.

At the October 23rd hearing, for the very first time, and then only in response to questions by the Commission staff, a Texas West witness stated its well might possibly encounter additional Morrow stringers, not open in the Bell Lake Unit No. 14 well, hereby leaving unproduced gas in the reservoir. The witness' answer was a "yes" to an explicit question as to the type of waste involved. This same witness, although questioned repeatedly, declined to say that any significant amount of gas would be left in the fourth Morrow sand, open to the No. 14 well, if a second well were not drilled.

The Commission, as we have stated, not only has a right, but a duty to determine if waste is occuring or will occur. If the information cannot be elicited from the witness of a party before the Commission, and the Commission feels there is a question of waste, it should put its own witness on the stand and let the parties refute the testimony if they can. The Commission has no duty to bolster a shaky record on behalf of one party, and in opposition to another.

At best, any evidence of waste to support a compulsory

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 5493 Exhibit No. 7
Submitted by Texas West
Hearing Date

8 September 1975

State of New Mexico
Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501
Attention: Mr. Joe D. Ramey, Member & Secretary

All Working Interest Owners
Bell Lake Unit
c/o Continental Oil Company, Operator
P. O. Box 460
Hobbs, New Mexico 88240

Re: Texas West Oil & Gas Corporation's
"MADERA" #1
Proposed (Morrow) Development Well
1980' FN&EL's of Section 5, T-24-S,
R-34-E, NMPM, South Bell Lake
(Morrow) Field, Lea County, New Mexico.
Pursuant to NMOCC Order #R-5039-A
with Reference to Case #5493.

Gentlemen:

Pursuant to the instructions contained in subject order regarding subject well, Texas West Oil & Gas Corporation hereby submits an AFE reflecting the estimated drilling and completion and related expenses pertaining to subject well. The total updated Intangible Costs are estimated to be $667,595.00; the total updated Tangible Costs are estimated to be $401,709.00; and the total Intangible and Tangible Costs are $1,069,304.00. Please be advised that the original AFE submitted to the NMOCC was dated April 23, 1975 and reflected a total Tangible and Intangible Drilling and Completion Cost of $943,150.00; the difference in that and the updated or current estimated total cost ($126,154.00) is, of course, due to the price increases that have been realized during this extended period of time affecting nearly all equipment and service costs related to the drilling and completion of subject well.

Exh. No. 8

Also, attached, is a copy of NMOCC Form C-102 reflecting the well location and pooled area which encompasses all of the east half (E/2) of Section 5, T-24-S, R-34-E.

As you know, by subject NMOCC Order #R-5039-A (copy attached), Texas West Oil & Gas Corporation has been designated Operator of subject pooled area with said Order containing, among others, the following provisions:

1) Texas West Oil & Gas Corporation will be allowed to recover from production 150% of the pro rata share of reasonable well costs attributable to each non-consenting working interest owner who has not paid his share of estimated well costs within thirty (30) days from the date the schedule of estimated well costs is furnished to him.

2) Any unsevered mineral interest shall be considered a seven-eighths (7/8) working interest and a one-eighth (1/8) royalty interest for the purpose of allocating costs and charges under the terms of the Order.

3) Within thirty (30) days from the date the schedule of estimated well costs is furnished to him, any non-consenting working interest owner shall have the right to pay his share of estimated well costs to the Operator in lieu of paying his share of reasonable well costs out of production, and that any such owner who pays his share of estimated well costs as provided above shall remain liable for operating costs, but shall not be liable for risk charges.

Texas West Oil & Gas Corporation owns a lease covering an undivided 7/32 of the total interest in subject tract (21.875% Working Interest). Texas West Oil & Gas Corporation's proportionate share of the estimated total well costs per attached AFE is $233,910.25. The Bell Lake Unit Participant's total proportionate share is $835,393.75 if they participate in the drilling and completion of subject well.

Since Continental Oil Company is the Operator of the Bell Lake Unit and, further, since Texas West Oil & Gas Corporation does not have nor does it have access to a detailed list of the participants and their mailing addeass, and since Continental Oil Company has been the spokesman at all hearings and on all matters for the

BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

APPLICATION OF TEXAS WEST OIL & GAS CORPORATION FOR COMPULSORY POOLING, LEA COUNTY, NEW MEXICO. APPLICANT, IN THE ABOVE-STYLED CAUSE, SEEKS AN ORDER POOLING ALL MINERAL INTERESTS IN THE PENNSYLVANIAN FORMATION UNDERLYING THE E½ OF SECTION 5, TOWNSHIP 24 SOUTH, RANGE 34 EAST, BELL LAKE FIELD, LEA COUNTY, NEW MEXICO, TO BE DEDICATED TO A WELL TO BE DRILLED AT AN ORTHODOX LOCATION FOR SAID UNIT IN UNIT G OF SAID SECTION 5. ALSO TO BE CONSIDERED WILL BE THE COST OF DRILLING AND COMPLETING SAID WELL AND THE ALLOCATION OF THE COST THEREOF, AS WELL AS ACTUAL OPERATING COSTS AND CHARGES FOR SUPERVISION. ALSO TO BE CONSIDERED WILL BE THE DESIGNATION OF APPLICANT AS OPERATOR OF THE WELL AND A CHARGE FOR THE RISK INVOLVED IN DRILLING SAID WELL.	)	No. 5493

SUMMARY AND ARGUMENT ON BEHALF OF
TEXAS WEST OIL & GAS CORPORATION

At the close of the hearing in the captioned case on October 23, 1975 the Commission requested that attorneys for Texas West Oil & Gas Corporation (Texas West) and Continental Oil Company (Continental) file a memorandum covering their closing statements and arguments by October 27, 1975.

I. FACTS:

We submit that the following facts are not in controversy.

A. The E½ Section 5, Township 24 South, Range 34 East is fee or privately owned land and is situated within the boundaries of the Bell Lake Unit Area, of which Continental is operator. An undivided 25/32 interest in the minerals underlying said 320 acres has been committed to the Bell Lake Unit. The owners of the remaining 7/32 interest in the minerals have not committed their interests to the unit and Texas West is the owner of the oil and gas lease covering said interest.

B. Continental completed a large gas well in the SE¼NW¼ said Section 5, the first reported production from which was in August 1974. Early in 1975 Texas West contacted Continental with a view to negotiating an operating agreement for the purpose of getting a well drilled at an orthodox location on the E½ Section 5; Continental did not evidence any interest. On February 28, 1975 Texas West wrote Continental requesting that in order to prevent further drainage from the E½ Section 5 arrangements be made to drill a well to the approximate depth of 14,100 feet to test the Morrow formation from which Continental's well in the W½ Section 5 (referred to as Well No. 14) is producing. On March 26, 1975 Continental advised Texas West they were not interested in drilling a well but suggested that Texas West would be given an opportunity to participate in the Bell Lake Unit.

C. On April 29, 1975, Texas West made application to the Commission for compulsory pooling of all mineral interests in the Pennsylvanian formation under the E½ said Section 5 to be dedicated to a well to be drilled at an orthodox location in Unit G of said section. The original application was heard before an examiner on May 28, 1975 and thereafter Order R-5039 was issued on June 10, 1975 approving the application. Thereafter, application was made by Continental for a de novo hearing before the Commission, which was held on July 25, 1975 and on September 2, 1975 Order R-5039-A was issued, again approving the application for compulsory pooling. On September 22, 1975 Continental filed an application for rehearing, which was granted, and the rehearing was held on October 23, 1975.

D. On October 20, 1975, 3 days before the rehearing, Continental filed an application with the Commission for an order pooling all mineral interests in the E½ Section 5, to be dedicated to a well to be drilled at a location 1980 feet from the south line and 1650 feet from the east line of said section. In this application

Continental requested that the same be set for hearing jointly with the application of Texas West in Case No. 5493, or in the alternative that the case be set for hearing and that the Commission's decision in Case No. 5493 be withheld until Continental's application could be heard.

E. Under Rule 104 II(a) of the Commission providing for well spacing it is provided:

> "Unless otherwise provided in the special pool rules, each development well for a defined gas pool of Pennsylvanian age or older which was created and defined by the Commission after June 1, 1964, shall be located on a designated drilling tract consisting of 320 surface contiguous acres, more or less, comprising any two contiguous quarter sections of a single governmental section, being a legal subdivision of the U. S. Public Land Surveys."

Special rules providing for other than 320 acre spacing have not been adopted for the Bell Lake Pool in which the E½ Section 5 is located.

F. Since the original application for compulsory pooling was filed by Texas West on April 29, 1975, Continental has increased its production from Well No. 14 each month from approximately an average daily MCF of 10,000 to 18,000 in October.

G. If the Morrow formation from which the No. 4 well is producing is present under the E½ Section 5, it is admitted by both Texas West and Continental that drainage is occurring by reason of production from said well. This is admitted in Paragraph 10 of Continental's application for compulsory pooling wherein it is stated:

> "Applicant adheres to its position that the Bell Lake Unit No. 14 well is adequately draining the E½ said Section 5."

Furthermore, Mr. Ronald McWilliams, a witness for Continental, stated in response to a question from the Commission that the correlative rights of Texas West and the mineral owners who executed a lease in favor of Texas West were being violated.

H. That Texas West started its Madera No. 1 well located 1980 feet from the north line and 1980 feet from the east line of Section 5 on September 16, 1975 and that said well was drilling at the time of the hearing below 2,400 feet.

II. STATUTE COVERING COMPULSORY POOLING:

65-3-14(c) N.M.S.A. 1953 Comp. provides as follows:

> "(c) When two (2) or more separately owned tracts of land are embraced within a spacing or proration unit, or where there are owners of royalty interests or undivided interests in oil and gas minerals which are separately owned or any combination thereof, embraced within such spacing or proration unit, the owner or owners thereof may validly pool their interests and develop their lands as a unit. Where, however, such owner or owners have not agreed to pool their interests, and where one such separate owner, or owners, who has the right to drill has drilled or proposes to drill a well on said unit to a common source of supply, the Commission, to avoid the drilling of unnecessary wells or to protect correlative rights, or to prevent waste, shall pool all or any part of such lands or interests or both in the spacing or proration unit as a unit."

III. BELL LAKE UNIT:

Continental's opposition to the application of Texas West for compulsory pooling has been primarily based upon the fact that the E½ Section 5 is within the Bell Lake Unit Area and that 25/32 of the mineral interests underlying said 320 acres is committed to the unit agreement; also, upon the contention that Continental has the right to set up any spacing or pattern of drilling within the unit area which to Continental may seem desirable or appropriate.

Upon motion of Texas West, the Commission ruled that all evidence relating to the history and operation of the Bell Lake Unit should be excluded. In our opinion, this ruling was proper due to the fact that it is immaterial as far as the compulsory pooling statute is concerned whether a portion of the interests being pooled is committed to a unit agreement. The further contention was made by

Continental that the approval of the unit agreement by the Commission as a conservation measure had, in effect, left only one course open to the owners of the uncommitted mineral and leasehold interests to protect their correlative rights and that would be to commit their interests to the unit upon the terms agreed upon with Continental.

The Bell Lake Unit Agreement was a voluntary agreement and there is no statutory provision applicable in this case for compulsory unitization. A unit agreement is simply a contract between parties owning leasehold and mineral interests providing for the development of the same as a unit, subject to approval by the supervisory authorities. The Oil Conservation Commission only approved the unit as a conservation measure. It is elementary that a person or entity not a party to a contract is not bound by the same. Consequently, the order of the Commission approving the Bell Lake Unit Agreement could not, as a matter of law, have any effect whatsoever on the interests of Texas West or the owners of the uncommitted mineral rights.

In view of the foregoing, we respectfully submit that the Commission was correct in excluding evidence relating to the history and operation of the Bell Lake Unit.

IV. APPLICATION OF CONTINENTAL FOR COMPULSORY POOLING:

Continental's application for compulsory pooling, filed 3 days before the rehearing, is untimely as a matter of law in view of the fact that existing Order R-5039-A providing for compulsory pooling was in full force and effect at the time. Furthermore, Continental waived any right it might have to seek compulsory pooling by reason of its applciation for rehearing. Continental has elected this remedy and is bound by it, which precludes the Commission from considering Continental's application, which is completely inconsistent with the rehearing remedy.

Continental is estopped as a matter of law in that it has been given an opportunity from the outset to participate in the drilling of the well in the E½ Section 5 and has repeatedly refused to do so. Although Continental has consistently taken the position that the No. 14 well will drain the entire section, it has never pursued its only remedy which was for 640 acre spacing with an application to force pool the E½ Section 5.

Continental's application was filed after Texas West commenced a well pursuant to the existing order of the Commission in good faith reliance thereon.

At the rehearing, Continental took the position that upon filing of the application for rehearing the order of the Commission for compulsory pooling was no longer effective. The answer to this is the following provision in Section 65-3-22 N.M.S.A. 1953 Comp. which covers rehearings and appeals:

> "In the event the rehearing is granted, the Commission may enter such new order or decision after rehearing as may be required under the circumstances."

It is clear from the above provision that the order remains in full force and effect and it is solely within the discretion of the Commission whether a new order should be entered or other decision made after the rehearing.

In view of the foregoing, we respectfully submit that the application of Continental for compulsory pooling should be denied.

V. ORDER R-5039-A SHOULD BE AFFIRMED EXCEPT THAT THE RISK FACTOR SHOULD BE INCREASED:

The uncontradicted facts of this case meet all of the requirements of Section 65-3-14(c) providing for compulsory pooling in that Texas West has a leasehold interest in the E½ Section 5 which is a standard spacing and proration unit under the applicable rules of the Commission and has the right to drill and the well is located at

an orthodox location. The application was filed after Continental had refused to participate in the drilling of the well and refused Texas West's offer to enter into an operating agreement under which the well would have been drilled by Continental and Texas West would have paid its proportionate part of the expense. Furthermore, drainage and the violation of correlative rights of the uncommitted mineral owners and of Texas West are admitted by Continental. Under these circumstances, it is clear that the statute provides that the Commission shall pool the interests of the parties in the spacing or proration unit.

Order R-5039-A provides that any non-consenting working interest owner should be afforded the opportunity to pay his share of the estimated well costs in lieu of paying his share of reasonable well costs out of production. It also provides that any non-consenting working interest owner that does not pay his share should have withheld from his share of the production the reasonable well costs plus an additional 150% thereof as a reasonable charge for the risk involved in the drilling of the well.

Continental presented testimony to the effect that a risk factor should not be awarded. Texas West presented evidence requesting that the maximum risk factor of 200% be awarded. The evidence presented by both Texas West and Continental clearly showed that exploration and development of the Morrow formation is extremely hazardous. Texas West, through its Exhibit 4, showed that there are 11 producing Morrow wells surrounding the E½ Section 5, and that there is one other well in the process of being completed in Section 29, Township 23 South, Range 34 East. The testimony of Texas West and this exhibit show that of the 11 producing wells 5 blew out or encountered serious and hazardous drilling or completion problems. This exhibit also shows

that 8 additional wells were drilled which penetrated the Morrow formation and which proved to be uncommercial or dry, all of which are within 1 to 3 miles of the E½ Section 5.

Exhibit No. 3 introduced by Texas West is confirmatory of the high degree of risk involved in drilling Morrow wells. This exhibit was introduced for the purpose of showing that even though a well was bottomed in the Morrow sands directly between two producing wells and as direct offsets to such wells, nevertheless the sands were unproductive. Additional evidence was introduced by Texas West which was uncontradicted showing that the completion of wells in the Morrow formation is extremely hazardous and often times leads to unusual expenditures and may even result in the loss of the well. The Continental position was predicated almost entirely on the basis of a reservoir limits test which the expert witness admitted was not used as an exploratory device. This reservoir limits test, the accuracy of which was said to have been confirmed over the many years it had been in use by only three experiences, indicated that there was no barrier between the existing Continental No. 14 well and the proposed location. The expert who performed the test and made the calculations admitted that the results were based on "reservoir modeling" and that the mathematical formulas used assumed the existence of homogeneous reservoirs with constant porosity and permeability. It is clear from the testimony that the Morrow reservoir is a heterogeneous reservoir and not homogeneous in character and that it would be highly unlikely to ever find constant porosity or permeability in the lenticular deposition of the Morrow sands. In connection with this evidence we think a fair conclusion of its reliability is that if reservoir limits could be predicted with any degree of accuracy that it would be a primary tool utilized for exploratory wells, which admittedly it is not.

In view of all the facts and circumstances of this case and the hazards which have been encountered in the Bell Lake Area in the drilling and completion of Morrow wells, we respectfully submit that the maximum risk factor of 200% should be provided for in any new order or that Order R-5039-A be amended accordingly.

The evidence further shows that the amounts provided for in Order R-5039-A of $1,600.00 per month for supervision while drilling and $250.00 per month for supervision while producing are reasonable and in line with usual and customary charges in the area and we submit that any new order should so provide or that Order R-5039-A should be affirmed in that respect.

The uncontradicted evidence introduced by Texas West shows that Texas West, in compliance with Order R-5039-A, gave notice to Continental of the estimated cost of the well within the time and in the manner provided by said order and that Continental failed to respond thereto.

Due to the fact that Texas West is engaged in drilling pursurant to Order R-5039-A, it is respectfully requested that this matter be expedited by the Commission.

Respectfully submitted,

HINKLE, BONDURANT, COX & EATON

By _____

CLARENCE E. HINKLE
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October 24, 1975

Mr. Joe Ramey
Secretary-Director
Oil Conservation Commission
Box 2088
Santa Fe, New Mexico 87501

Re: Case No. 5493
Order R-5039-A

Dear Mr. Ramey:

We enclose Summary and Argument on Behalf of Texas West Oil & Gas Corporation which you requested that the respective attorneys filed with the Commission by noon Monday, October 27.

We are sending a copy to Jason Kellahin, attorney for Continental.

Yours sincerely,

HINKLE, BONDURANT, COX & EATON

By _____

CEH:cs
Enc.
cc: Jason Kellahin
cc: L. N. Dunnavant

BEFORE THE

OIL CONSERVATION COMMISSION OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF TEXAS WEST OIL & GAS CORPORATION FOR COMPULSORY POOLING, BELL LAKE AREA, LEA COUNTY, NEW MEXICO - REHEARING

Orders No. R-5039
No. R-5039-A

STATEMENT OF CONTINENTAL OIL COMPANY

STATEMENT OF THE CASE

This is a proceeding for compulsory pooling, brought by Texas West Oil & Gas Corporation under the provisions of Sec. 65-3-14, New Mexcio Statutes Annotated, 1953 Comp., as amended, to pool all mineral interests as to the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, Lea County, New Mexico.

The application was heard before Commission Examiner Richard L. Stamets as Case No. 5493 on May 28, 1975, at which time Continental Oil Company as operator of the Bell Lake Unit, appeared and protested the application.

On June 10, 1975, the Commission entered its order No. R-5039, pooling the subject acreage. As provided by Sec. 65-3-11.1, N.M.S.A., 1953, Continental Oil Company filed a timely application for a hearing do novo before the Commission. This hearing was held on July 25, 1975, and on September 2, 1975, the Commission entered its order No. R-5093-A, again pooling the subject acreage, modifying the previous order only to the extent of reducing the risk factor allowed from 200% to 150%.

As provided by Sec. 65-3-22, N.M.S.A., 1953, Continental

filed a timely application for rehearing. This application, as provided by law, pointed out the deficiencies of order No. R-5039-A, and the lack of substantial evidence in the record to support it. The Commission, presumably seeing the deficiencies in its order and in the record granted the rehearing, without entering an order to that effect. This rehearing was held October 23, 1975.

Prior to the rehearing, according to the evidence admitted over the protest of Continental, Texas West commenced, with the approval of the Commission, the drilling of a well in the E/2 of Section 5.

COMPULSORY POOLING STATUTE

The Commission derives its authority to enter an order compulsorily pooling mineral interests uderlying a spacing or proration unit from Sec. 65-3-14 C, N.M.S.A., 1953.

The requirements of this statute were stated at the rehearing by Mr. Ramey, and in Finding No. 7 of the Commission's order No. R-5039-A, as follows:

a. multiple ownership, either working interest or royalty interest, within a single spacing or proration unit,

b. interest owner in the proposed unit who have not agreed to pool their interests, and

c. one owner who has the right to drill, has drilled or proposes to drill a well.

This statement of the requirements for compulsory pooling ignores the very basic, fundamental finding that the Commission must make in the exercise of its jurisdiction -- the prevention of waste. Continental Oil Company v. Oil Conservation Commission, 70 N. M. 310.

In considering the compulsory pooling statute, Sec.

65-3-14 C, the New Mexico Supreme Court had this to say in Sims v. Mechem 72 N. M. 186.

> "Unquestionably the commission is authorized to require pooling of property when such pooling has not been agreed upon by the parties, Sec. 65-3-14(c), N.M.S.A., 1953, * * * But the statutory authority of the commission to pool property or to modify existing agreements relating to production within a pool under either of these subsections must be predicated on the prevention of waste. Sec. 65-3-10, 1953 Comp." (Emphasis added)

The Sims case was a case in which the Commission made the findings set out above and in finding No. 7 of Order No. R-5039-A. The court held this clearly insufficient to support the jurisdiction of the Commission to enter the order. See Commission Order No. 1310, and compare Commission Order No. R-677. Also see Continental Oil Co., vs. O.C.C., supra, as quoted in the Sims case at p. 189.

In the Sims case, the court summed up the situation as follows:

> " * * * There is nothing in the evidence before the commission tending to support a finding of waste or the prevention of waste by pooling of the property into two standard units.
>
> "We conclude, therefore, that since commission order R-1310 contains no finding as to the existence of waste, or that pooling would prevent waste, based upon evidence to support such a finding, the commission was without jurisdiction to enter order R-1310, and that is void. Continental Oil Co. v. Oil Conservation Commission, supra." (Emphasis added)

This is exactly the situation that existed when the Commission entered its orders Nos. R-5039 and R-5039-A. There was no finding in either order on waste, and no evidence in the record that would support such a finding. The compulsory pooling in this case should have been denied at the first hearing, and at a minimum, at the second. Regardless of its purposes, the Commission is required to

comply with the law. Continental Oil Co. v. O.C.C., supra, at p. 326.

The Commission in the past, and again in this case, has apparently operated on the theory that any owner who has the right to drill within a spacing or proration, who cannot obtain the cooperation of other interest owners, is thereby, perforce, entitled to a compulsory order with all of the other benefits authorized by the pooling statute. This is clearly not the law. Sims v. Mechem, supra. Such a pooling order should only be granted where such a well will avoid the drilling of unnecessary wells, protect correlative rights, and OR prevent waste, as provided by Sec. 65-3-14 C. Texas West would have the Commission read these factors in the alternative, but that is contrary to the plain language of the Sims case, the ruling of which is binding on the Commission. The authority of the Commission is founded in the prevention of waste; the prime objective of the conservation statutes, including the statute involved here, is directed to that end. Sims v. Mechem, supra, Continental Oil Co. v. O.C.C. 531 P.2d 939 (N.M. 1975).

WASTE

As we have pointed out, there was no finding of waste, and no evidence to support a finding that waste would be prevented by the entry of a compulsory pooling order when Commission orders R-5039 and R-5039-A were entered. The record, on the other hand, was replete with evidence to support a finding that if the Texas West application were granted, waste would, in fact, occur. In view of this situation, and in view of the holding of the New Mexico Supreme Court in Fasken v. O.C.C., 532 P. 2d 588 (N.M. 1975), the

Commission granted our application for rehearing. The record was woefully deficient to support the Commission orders.

At this last hearing on October 23, 1975, the applicant was still apparently not aware of its obligation to show the Commission that waste was occuring, or that waste would be prevented by the approval of its application for compulsory pooling. It founded its case on the protection of correlative rights (which we will discuss later) and offered nothing on waste until, with the prodding of a member of the Commission staff, some rather weak testimony regarding waste was elicited from the Texas West witness. This is not to say that the Commission staff should seek to determine if waste is actually occuring, or will occur. The Commission has the positive duty to elicite that information, and to act on it. We will discuss this also later in this statement.

But with this prodding, what kind of evidence did Texas West offer? The testimony in response to questions that called for a "yes" answer, indicated that there might possibly be stringers of Morrow sands encountered at Texas West's well site that were not encountered in the Bell Lake Unit No. 14 well. The witness, on cross examination by Continental, admitted that he had no evidence to support this conclusion, and that it was, at best, speculative. His expert petroleum engineer, Mr. Hickman, made the same admission.

In contrast to this, Continental offered extensive testimony and evidence as to the nature of the particular Morrow reservoir encountered in the Bell Lake Unit No. 14 well. This testimony, wholly unrefuted, shows the formation has an extremely high permability and that the No. 14 well is draining in excess of 1400 acres. A simple mathmatical

calculation shows such a well has a drainage radius in excess of 4400 feet. Even Texas West's expert testified to the same effect. The evidence further shows that the nearest reservoir boundary to the No. 14 well is in excess of 2200 feet from the well bore, probably in excess of 2500 feet. The Texas West location, being 1700 feet from the No. 14 well, is well within the reservoir being effectively and economically drained by the No. 14 well. None of this testimony was refuted. In fact if there is anything on which the parties can agree it is that the No. 14 well is effectively draining all of the productive acreage within the E/2 of Section 5. This situation does not in any way impair correlative rights, as we shall later show.

If this be so, and the unrefuted testimony in the record shows that the No. 14 well is effectively and economically draining a reservoir in excess of 1400 acres, including the acreage to be dedicated to the Texas West well, the drilling of the Texas West well will constitute waste and Continental's testimony to that effect is uncontradicted in the record in this case. In fact the testimony offered by Texas West supports the same conclusion.

The P/Z calculations and material balance curves offered by both parties, and the reservoir limits study offered by Continental literally cry out that this well of Texas West is an unnecessary and wasteful well.

CORRELATIVE RIGHTS, COLLATERAL ATTACK ON SPACING ORDER, AND THE BELL LAKE UNIT

In response to the showing made by Continental that the No. 14 well is effectively and economically draining the E/2 of Section 5, the Commission replies, as shown by its orders Nos. R-5039 and R-5039-A, that this constitutes a

collateral attack on the Commission's spacing order, Rule 104. The Commission has further ruled that Continental cannot be heard to say taht the Bell Lake Unit agreement will protect the correlative rights of Texas West and its lessors, although it has previously made that conclusion when it approved the unit. In ruling out testimony regarding the history, development, and effect of the Bell Lake Unit, we submit, the Commission committed error.

Rather that being a collateral attack on spacing, Continental's proffered testimony is for the purpose of showing the Bell Lake Unit Agreement is a proper conservation measure, designed to prevent waste and to protect correlative rights of all interest owners within the unit boundaries, including the interests of the 7/32nds undivided mineral interest in the E/2 of Section 5 involved in this hearing.

At hearing on October 23, the Commission ruled inadmissable any testimony or evidence regarding the Bell Lake Unit and Unit Agreement as being immaterial to any issue before the Commission. This, we again submit, was error. The ruling effectivley denied to Continental the opportunity for a fair and impartial hearing as required by law. Continental's position was that no waste was occuring and that waste would occur if the Texas West were drilled, and that the present situation fully protects correlative rights. We were denied the opportunity to fully develop this testimony but despite this, the record amply established that waste will occur if the Texas West well is drilled.

We were further denied the right to direct our testimony to the remaining issues -- the question of a collateral attack on the Commission's spacing order, and the protection

of correlative rights. We again note our objections to the Commission's ruling.

Fortunately the Commission still has the opportunity to correct this error. The entire record, including the record of the two previous hearings where this pertinent testimony was offered, both before the Commission examiner and before the Commission is available, and the Commission can, if it so chooses, review this record on the points we complain of.

Sec. 65-3-22 (b), N.M.S.A., 1953, provides that on appeal the trial shall be without a jury, "and the transcript of proceedings before the Commission, including the evidence taken in hearings beforethe Commission, shall be received in evidence by the court, in whole or in part upon offer by either party * * *." (Emphasis added). The entire record of this case, which is and has been a single case before the Commission, is available for appeal. It is equally available to the Commission at this time to correct the error of its ruling at the hearing on October 23.

In light of the ruling made by the Commission, we will not discuss the evidence proffered, but will confine our discussion to the legal questions involved, and evidence that is in the Commission files, other than the prior hearing transcripts, and readily abailable to it.

UNITIZATION

We cannot help but feel that the Commission, in this case, has misconceived the role of unitization as a conservation measure, and the Commission's role in connection with unitization.

As foundationary matters, it must be pointed out that the Bell Lake Unit was formed, and approved by the Commission by Order No. R-355 on August 28, 1953. The Commission's

records will show that the land under consideration in the present case lies within the South Bell Lake unit area, and that the E/2 of Section 5 lies within a participating area for Morrow production. These are all matters of which the Commission can take notice. The Commission can further take notice of the fact that the undivided 25/32nds mineral interest in the E/2 of Section 5, committed to the unit, is now sharing in Morrow production.

Just what are the purposes of unitization? The creation of units is authorized by Section 65-3-14 (e) N.M.S.A., 1953. This is the authority under which the Commission approved the Bell Lake Unit. It has the approval of law and of this Commission as a proper conservation measure, since the Commission's jurisdiction is founded on the prevention of waste, it must be assumed, and the Commission so found, that the unit agreement would prevent waste. Continental Oil Co. v. O.C.C., supra.

It has long been recognized that unit operation of a pool or portion thereof was the most efficient means of achieving the greatest ultimate recovery of oil and gas.

As stated in "A Study of Conservation of Oil and Gas in the United States", a publication prepared by the Governors' Special Study Committee of the Interstate Oil Compact Commission in 1964 during the administration of Governor Jack M. Campbell as chairman of the I.O.C.C.:

> "The pool and its energy mechanism are by nature a single unit. Like "Old Bossy", if she is to continue to stay alive, produce, and be of the greatest productive value, she should be fed, watered, cared for, and milked as a single unit. It may not be possible or practical in every instance to unitize an entire pool, but the same principle is applicable to the largest part or parts that can be unitized.

"These principles relating to an oil and gas pool have been recognized by the courts, but in more judicial language, long prior to and apart from legislation dealing directly with unitization."

In commenting on the situation we have in this case, with a small interest uncommitted to the unit, the Study went on to say:

" * * * It is obvious that, if dependence is placed upon voluntary unitization, any one owner of a tract or interest in the reservoir, regardless of his reason, can in many instances block what is for the common good of all owners, and is necessary in the public interest to secure the greatest ultimate recovery and prevent waste. Many proposed units have been blocked because of the refusal of a small minority to agree. Others have been created at the cost of a 'pound of flesh'." (Emphasis added)

Sullivan, in his "Handbook of Oil and Gas Law," 1955, described the purposes of unitization as not being an end in itself, but as a means to an end, resulting in the greatest ultimate recovery of oil and gas, thereby preventing waste:

"A unitized operation is not an end in itself. The combination of interests does not directly increase recovery or prevent waste. It merely makes possible the development and exploitation of the pool as a single producing mechanism in accordance with accepted scientific and engineering principles. The result is a maximum economic recovery of the oil and gas in place and a division thereof among the respective owners in accordance with the terms of the unit agreement. The Rule of Capture is inapplicable because ownership is not conditioned upon a reduction to possession through producing operations but upon the terms of the participation formula in the unit agreement. * * * (But) in those instances where they can be instituted advantageously, i.e., to prevent waste and/or protect correlative rights, they represent the ultimate in conservation."

See also Williams and Meyers, Oil and Gas Law, Sec. 910.

This is an exploratory unit, and as such the remedy of the New Mexico statutory unitization act would not have been abailable, even if the law had been effective when this

case was commenced. But, contrary to the position the Commission took in its previous orders, denial of this application will not force Texas West or its lessor into the Bell Lake Unit. It would merely leave them where the Commission found them -- non-participants in what the Commission has already found is a proper conservation measure, designed to prevent waste.

Under these circumstances the Commission has an affirmative duty to deny to them the rewards of non-participation -- their "pound of flesh" as referred to in the I.O.C.C. study.

Williams and Meyers, in their treatise on Oil and Gas Law, put it this way at Sec. 933:

> "It is obvious that one reason for the reluctance of royalty owners or operators to join in pooling or unitization agreements is that they expect to reap greater economic benefits from 'going it alone' than they can hope to reap under the voluntary agreement. That being so, it is also clear that to the extent a regulatory agency or court denies to the nonconsenting royalty owner or operator certain benefits of 'going it alone', to that extent the agency or court encourages entry into voluntary agreement."

There is nothing improper in denying to a nonconsenting owner or operator the fruits of his nonconsent to a proper conservation activity approved by the Commission. This does not "force" him into the unit.

In this case it is also obvious that Texas West, and its lessor who has forbidden joining in the unit, seek to reap the benefits of the extensive and expensive exploration and development work of the Bell Lake Unit, and deny to the unit the logical fruits of an exploratory unit -- the right to develop the unit on an optimum spacing pattern, utilizing the extensive knowledge gained at great risk and vast expense, to achieve the greatest ultimate recovery without waste. This

opportunism by a mineral owner should be discouraged, not encouraged.

CORRELATIVE RIGHTS

This brings us to the crux of the question before the Commissiion -- the protection of correlative rights.

The only basis Texas West can possibly have for this application is that it is being denied an opportunity to recover its just and equitable share of the gas underlying its 7/32nds undivided interest in the E/2 of Section 5 -- that its correlative rights are not being protected. Let us examine this position. (At the hearing the Commission Chairman brought out of one of Continental's engineering witnesses a statement that Texas West's correlative rights were not being protected. This is a legal conclusion, not proper from an engineering witness, and there was no attempt to bring out, from the engineering point of view how correlative rights were being violated. This testimony should be ignored.)

In discussing correlative rights we are starting under a double handicap. The Commission has denied to us the right to put on our testimony as to the operation and present status of the Bell Lake Unit. We again urge the Commission to reconsider this ruling, and examine the testimony previously offered and admitted in this case on this point.

Our second handicap is the long held position of the Commission to the effect that if an owner in a spacing or proration unit wants to drill, and has been unable to obtain voluntary agreement from the other interest owners, he is

automatically entitled to a compulsory pooling order. It was apparently because of this belief that the Commission made its Finding No. 7 in Order No. R-5039-A, and failed to make any finding as to waste, relying on its concept of correlative rights. As we have already shown, this is an insufficient basis for a compulsory pooling order. Sims v. Mechem, supra.

"Correlative rights," as defined in Sec. 65-3-29, H, N.M.S.A., 1953, means the right of each owner to produce without waste, his just and equitalbe share of the oil or gas in the pool. "Waste" as stated in the statute is an integral part of "correlative rights." Continental Oil Co. v. O.C.C., supra.

But let us suppose for the sake of argument that on the skimpy evidence in the record, the Commission could find that approval of the Compulsory pooling would in some way prevent waste. Is the Commission protecting correlative rights as it is required to do? We submit that it is not.

As shown by the testimony of V. T. Lyon, approval of this applicaiton will enable Texas West and its lessors to obtain far, far in excess of their proportionate share of the South Bell Lake reserves. The rights of the Bell Lake Unit owners will be seriously and irrevocably impaired. Here again the excluded testimony regarding the Bell Lake Unit is of the utmost importance. The Bell Lake Unit is not limited to the gas underlying only the West half of Section 5. It has the right to and can produce all of the reserves underlying the entire Bell Lake Unit. Any production by Texas West in the East half must, by law, be limited to its proportionate share underlying the E/2 of Section 5.

That is all the gas it can claim as its own. To give it the right to produce any more does violence to the statute.

Whether the Commission wants to face the fact or not, this acreage, and all of the remainder of the pool, is within the Bell Lake Unit. This acreage is within the participating area of this unit. The owners of the 25/32nds of the mineral interest in the East half of the section are already sharing, and have shared from inception, in the production from Well No. 14. Their correlative rights have not been impaired under the same acreage Texas West is taking about. By the same token, the correlative rights of the other 7/32nds interest have not and are not now being impaired. They have at all times had the right to join the Bell Lake Unit and receive their proportionate share of the gas in place underlying the E/2 of Section 5. How the Commission can say this is immaterial to the case is beyond comprehension. It is the basic issue that must be faced by the Commission. Either it is going to recognize that Texas West has other means available to protect itself, or it should put an end to unit operations. Either the Commission is going to foster and encourage the utilization of unit agreements and unit operations as a proper conservation measure, designed to prevent waste and to obtian the greatest ultimate recovery of oil and gas, with full protection of the rights of all owners, or it is going to acknowledge that unit operations designed to meet these objectives may be disrupted at will by a non-consenting owner, no matter how small his interest. The compulsory poolingstatuteis not the only machinery available to the Commission to protect correlative rights. It should not be utilized in the fashion sought by the applicant in this case.

Despite what Texas West's attorney claims, this case is unique in the history of the Oil Conservation Commission. Never before has an applicant, owning a small fractional, uncommitted interest within the boundaries or an approved unit, and within the participating area of that unit, sought to force pool such acreage for his own greedy advantage. Success in this case will mean the deletion of the E/2 of Section 5 from the Bell Lake Unit for Morrow production. It would cast serious doubt on the integrity of any unit where there are uncommitted interests, no matter how small. This is not the usual case of a "window" in the unit. It is a case of a small, undivided fractional interest within the committed acreage and participating area that is uncommited. If it can be said it is a sort of "Venetian blind" within the unit, the Commission can, and in the interests of conservation, should close it.

DRILLING WELL

Over Continental's objection Texas West offered evidence to show that it was already drilling the proposed well and that it was at considerable depth. Admission of this testimony was error. Consideration of this in a decision of this case denies Continental basic fair play and due process, required of all administrative agencies. The testimony was irrelevant and the fact that Texas West, before receiving a final order, elected to proceed to drill, is wholly immaterial. Texas West's drilling, even with the approval of the Commission, given before the time for application for a rehearing had expired, was at Texas West's own risk. That it has assumed this risk can have no bearing on the decision in this case,

no matter how costly an adverse decision may prove to Texas West.

RISK FACTOR

All of the testimony, both by the proponents and opponents, was to the effect that Texas West's well would encounter excellent production in the fourth Morrow zone. There is an absolute minumum of risk on that point.

The only other testimony regarding a risk was directed to the possiblility of a blowout. If this truly be a danger, the drilling of this unnecessary well raises a danger of waste. We submit, however, that the evidence shows the danger of a blowout is minimal, if the well is properly drilled. Continental as operator of the Bell Lake Unit has drilled numerous wells about which we were not permitted to testify. Again the testimony is in the previous hearings and available to the Commission and we contend it is material to this case.

Continental has experienced some problems in the Morrow formation, but has had no serious difficulities since 1957. It has gained experience in the control of pressures encountered in this area, and its experience and that of other competent operators shows that there is very little risk of a blowout.

The risk of drilling this well is minimal. No risk factor should be allowed in the event the Commission sees fit to enter a new compulsory pooling order.

SUPERVISION

The evidence offered by Continental shows the supervision charges requested by Texas West, and allowed by the

Commission in its two previous orders, are excessive. They should be reduced in line with the testimony offered at the October 23rd hearing.

CONCLUSION

Continental, as operator of the Bell Lake Unit, has offered extensive testimony to show that if the application is approved waste will occur. The record is explicit as to the kind of waste that will result with a compulsory pooling order.

At the October 23rd hearing, for the very first time, and then only in response to questions by the Commission staff, a Texas West witness stated its well might possibly encounter additional Morrow stringers, not open in the Bell Lake Unit No. 14 well, hereby leaving unproduced gas in the reservoir. The witness' answer was a "yes" to an explicit question as to the type of waste involved. This same witness, although questioned repeatedly, declined to say that any significant amount of gas would be left in the fourth Morrow sand, open to the No. 14 well, if a second well were not drilled.

The Commission, as we have stated, not only has a right, but a duty to determine if waste is occuring or will occur. If the information cannot be elicited from the witness of a party before the Commission, and the Commission feels there is a question of waste, it should put its own witness on the stand and let the parties refute the testimony if they can. The Commission has no duty to bolster a shaky record on behalf of one party, and in opposition to another.

At best, any evidence of waste to support a compulsory

pooling order is highly speculative. It is not the kind of substantial evidence the Commission should look to in entering a compulsory pooling order.

As to correlative rights, if they are going to be violated, Texas West and its lessors have only to join the Bell Lake Unit to protect them.

If the compulsory pooling application is to be approved, no risk factor should be allowed, and the charges for supervision should be sharply reduced from that previously granted.

It is respectfully urged that the application of Texas West Oil & Gas Corporation be denied.

Respectfully submitted,

CONTINENTAL OIL COMPANY

By Jason W. Kellahin

KELLAHIN & FOX
P. O. Box 1769
Santa Fe, New Mexico 87501

ATTORNEYS FOR CONTINENTAL OIL COMPANY

Continental's Exhibits:

#18 - admitted - limited to well locations with no discussion of participating area
#19 - admitted - limited for purpose of showing well location
#20 - not admitted
#21 - not admitted - included in record as part of tender of proof.
#22 - admitted
#23 - admitted
#24 - admitted
#25 - admitted
#26 - admitted
#27 - not admitted
#28 - admitted

10/23/75

V. T. Lyon TEXAS-WEST FILE 5493 CONOCO

To Jon Berryberry Date 10-17

I couldn't tell from our file copy whether the girl sent you this mailing list with the letter to working interest owners advising of the granting of the rehearing. In case she did not here is a copy.

Tom
Dennyberry

Bell Lake Unit
Participating Area A
Working Interest Owners

Bass Enterprises Production Company
C/O Perry R. Bass
3100 Fort Worth National Bank Building
Fort Worth, Texas 76102

Exxon Company, U.S.A
P. O. Box 1600
Midland, Texas 79701

Brady M. Lowe
1500 Broadway, Suite 1230
Lubbock, Texas 79400

Phillips Petroleum Company
Phillips Building
Odessa, Texas 79760

Tripor Resources Oil and Gas Fund
305 United Gas Building
Houston, Texas 77002

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PAUL W. EATON, JR.
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HAROLD L. HENSLEY, JR.
STUART D. SHANOR
C. D. MARTIN
PAUL J. KELLY, JR.

JAMES H. BOZARTH
RONALD G. HARRIS
JAMES H. ISBELL

MR. ISBELL LICENSED
IN TEXAS ONLY

MIDLAND, TEXAS OFFICE
521 MIDLAND TOWER
(915) 683-4691

September 29, 1975

Mr. Joe D. Ramey, Secretary-Director
Oil Conservation Commission
P.O. Box 2088
SAnta Fe, New Mexico 87501

Dear Mr. Ramey:

We enclose Response of Texas West Oil & Gas Corporation to the Application for Rehearing filed on behalf of Continental Oil Company in Case No. 5493 pursuant to which Order R-5039-A was issued aprpoving the application of Texas West for compulsory pooling.

Yours very truly,

HINKLE, BONDURANT, COX & EATON

By

CEH:cs
Enc.
cc: L. N. Dunnavant
cc: Jason W. Kellahin

BEFORE THE OIL CONSERVATION COMMISSION

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. 5493
Order No. R-5039-A

APPLICATION OF TEXAS WEST OIL &
GAS CORPORATION FOR COMPULSORY
POOLING, LEA COUNTY, NEW MEXICO.

RESPONSE OF TEXAS WEST OIL &
GAS CORPORATION TO APPLICATION
FOR REHEARING

COMES Texas West Oil & Gas Corporation (hereinafter referred to as "Texas West"), acting through its attorneys of record, and in response to the application of Continental Oil Company for rehearing respectfully shows:

1. That Order R-5039-A of the Commission approving the application of Texas West for compulsory pooling was issued on September 2, 1975. Continental filed its application for rehearing on September 22, a copy of the letter of transmittal of Jason W. Kellahin, attorney for Continental, to the Commission was sent to the undersigned attorneys together with a copy of the application on September 22 but was not received until September 27.

2. All of the matters and things contained in the application for rehearing were obviously considered by the Commission in issuing its Order R-5039-A approving compulsory pooling.

4. The Commission correctly found in its order that the statute providing for compulsory pooling requires the following factors to exist:

> "a. multiple ownership, either working interest or royalty interest, within a single spacing or proration unit,

"b. interest owners in the proposed unit who have not agreed to pool their interests, and

"c. one owner who has the right to drill, has drilled or proposes to drill a well."

There is no controversy as to the undivided 7/32 working interest owned by Texas West in the E½ Section 5, Township 24 South, Range 34 East, nor the fact that it was not committed to the Bell Lake Unit Agreement. As a matter of law, the unit agreement can have no affect whatsoever upon a non-committed interest, and consequently it is clear that the above referred to force pooling statute is applicable.

5. That Texas West originally filed an application for force pooling which was heard by an examiner on May 28, 1975. Order R-5039 was issued by the Commission approving the force pooling on June 10, 1975 and Continental took the full time permitted by regulation to request a hearing before the full Commission. It is obvious that the purpose of the application for rehearing is delay on the part of Continental with the ulterior motive of producing as much gas as possible from the offset well before Texas West is permitted to drill on the E½ said Section 5. Continental admitted at the hearing before the full Commission that its offset well is draining the leasehold interest of Texas West in the E½ said Section 5.

WHEREFORE, Texas West respectfully requests that the application for rehearing be denied.

Respectfully submitted,

TEXAS WEST OIL & GAS CORPORATION

By _____

HINKLE, BONDURANT, COX & EATON
P.O. Box 10
Roswell, New Mexico

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TEXAS WEST OIL & GAS CORPORATION

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HINKLE, BONDURANT, COX & EATON
P.O. Box 10
Roswell, New Mexico

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. 5493
Order No. R-5039-A

APPLICATION OF TEXAS WEST OIL & GAS CORPORATION FOR COMPULSORY POOLING, LEA COUNTY, NEW MEXICO.

APPLICATION FOR REHEARING

Comes now Continental Oil Company, a party affected by the above captioned order, and pursuant to the provisions of Section 65-3-22, New Mexico Statute Annotated, 1953 Compilation, files this, its application for a rehearing in the above case, stating that Commission Order No. R-5039-A is erroneous in the following respects:

1. Applicant is the designated operator of the Bell Lake Unit, approved by the Commission by its Order No. R-355.

FAME 2. The lands affected by Commission Order No. R-5039-A lie within the Bell Lake Unit and within the participating area of the unit, and applicant has the sole right to drill and develop said lands pursuant to the provisions of the Unit Agreement.

3. The Commission, by its order, has pooled the E/2 of Section 5, Township 24 South, Range 34 East, N.M.P.M., Lea County, New Mexico.

4. Order No. R-5039-A, as to its Findings Nos. 8, 12, 14, 16, 17, 20 and 23 are not supported by substantial

evidence.

NOSE Finding No. 7 is an incomplete and inaccurate statement of the law and does not support the order.

5. Order No. R-5039-A is not supported by substantial evidence, is arbitrary and capricious and is therefore invalid, unlawful, and void.

NO WASTE FINDING

*6. Order No. R-5039-A contains no finding as to the existence of waste or that the pooling of the East half of Section Five will prevent waste, and there is no evidence in the record to support such a finding.

7. Order No. R-5039-A is not supported by findings required by law.

8. The Commission, by its Order No. R-5039-A, has ignored the provisions of the Bell Lake Unit Agreement, approved by the Commission by its order No. R-355, and approved and participated in by the Commissioner of Public Lands of the State of New Mexico and by the United States Department of the Interior, through its United States Geological Survey.

ORDER CONTRARY TO PROVISIONS

9. Order No. R-5039-A permits the drilling of a well within the participating area of the Bell Lake Unit by a party other than the Unit Operator, contrary to the provisions of the Bell Lake Unit Agreement, approved by the Commission, and does so without the approval of the Commissioner of Public Lands and the Director of the United States Geological Survey, contrary to the provisions of said Unit Agreement.

WASTE CAUSED

10. Order No. R-5039-A will not prevent waste, but on the contrary will cause waste by permitting the drilling of other unnecessary wells in order to protect the correlative rights of the owners in the pool.

11. Order No. R-5039-A will not protect correlative rights, but will impair correlative rights, which are now fully protected by the Bell Lake Unit.

12. The drilling of unnecessary wells, as required by Order No. R-5039-A will cause economic waste, and will not prevent either physical or economic waste.

13. The effect of Order No. R-5039-A is to permit Texas West Oil and Gas Corporation to recover more than its just and equitable share of gas in the reservoir, contrary to the provisions of law.

14. Order R-5039-A, in its findings, ocnstitutes a collateral attack on the Bell Lake Unit Agreement, to which the Commission, the Commissioner of Public Lands and the U.S.G.S. are signatory parties, and upon Order No. R-355 approving the unit agreement.

15. The evidence shows that the Bell Lake Unit Owners stepped out nearly one mile in drilling their No. 14 well. Texas West proposes to drill less than one-third of a mile from this well, which the record shows, is one of the best in New Mexico. The evidence shows that Texas West's proposed location is well within the drainage radius of the No. 14 well, in a proven area, and the assignment of a 150% risk factor is grossly excessive, not supported by substantial evidence, and unlawful.

16. The imposition of charges for supervision of $1,600 for a drilling well, and $250 for a producing well, is excessive, not supported by substantial evidence, and unlawful.

17. The effect of Commission's Finding No. 19, and Paragraph 4 of the Order is to require payment of the Prorata share of the estimated well costs aby an owner who is consenting prior to commencement of drilling, and

constitutes imposition of a penalty not authorized by law, and contrary to the general practice in the oil and gas industry.

WHEREFORE applicant prays that this case be set for rehearing, and that after notice and rehearing as required by law, the Commission rescind its Order No. R-5039-A, and enter its order denying the application of Texas West Oil & Gas Corporation for compulsory pooling. In the alternative, applicant prays that upon completion of the well by Texas West Oil & Gas Corporation, if approved by the Commission, applicant be designated as operator of the well, as required by the provisions of teh Bell Lake Unit Agreement.

Respectfully submitted,

Jason W. Kellahin

JASON W. KELLAHIN
P.O. Box 1769
Santa Fe, New Mexico 87501

ATTORNEY FOR OCNTINENTAL OIL COMPANY

L. P. Thompson
Division Manager
Production Department
Hobbs Division
Western Hemisphere Petroleum Division

Continental Oil Company
P.O. Box 460
1001 North Turner
Hobbs, New Mexico 88240
(505) 393-4141

October 1, 1975

Working Interest Owners
Bell Lake Unit
Participating Area "A"
Address List Attached

Gentlemen:

Compulsory Pooling - E/2 Section 5, T-24S, R-34E - Case No. 5493

Supplementing the minutes of the working interests owners' meeting held on September 30, there is an additional development of interest. Mr. Tom Derryberry, Attorney for the Oil Conservation Commission, called and informed me that, since the re-hearing has been granted in the subject case, the deadline is being postponed for a non-consenting owner paying his prorata share of estimated cost of drilling, in lieu of the risk penalty being assessed. The new order to be entered following the re-hearing will establish a revised deadline for such payment. Mr. Derryberry requested that I advise all working interest owners in the South Bell Lake Area of this fact so there need not be concern that failure to pay by the deadline set out in Order No. R-5039-A will result in assessment of this penalty.

Discussions since the meeting also indicate the advisability of notifying Transwestern Gas Pipeline Company of the re-hearing and the issues involved so that they may have the opportunity to protect their interests under the gas contract.

Yours very truly,

VTL:reh
CC:
Mr. Tom Derryberry
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

JCC: FOH: GED: JWK

OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 · SANTA FE
87501

October 1, 1975

Mr. Jason W. Kellahin
Kellahin & Fox
P. O. Box 1769
Santa Fe, New Mexico 87501

Dear Mr. Kellahin:

This is to advise you that a quorum of the New Mexico Oil Conservation Commission on September 30, 1975, considered your application for rehearing in Case No. 5493, Application of Texas West Oil & Gas Corporation for Compulsory Pooling, Lea County, New Mexico, and decided to rehear the case in its entirety.

Parties will be notified of the time and place of the rehearing as soon as possible.

Very truly yours,

THOMAS W. DERRYBERRY
Assistant Attorney General

TWD/jr

cc: Mr. Clarence Hinkle
Hinkle Building
Roswell, New Mexico

Dockets Nos. 28-75 and 29-75 are tentatively set for hearing on November 5 and November 19, 1975. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: COMMISSION HEARING - THURSDAY - OCTOBER 23, 1975

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

CASE 5493: (Rehearing)

Application of Texas West Oil & Gas Corporation for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the E/2 of Section 5, Township 24 South, Range 34 East, Bell Lake Field, Lea County, New Mexico, to be dedicated to a well to be drilled at an orthodox location for said unit in Unit G of said Section 5. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof, as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for the risk involved in drilling said well.

Upon application of Continental Oil Company, the Commission will rehear Case No. 5493 in its entirety.

Harold Hensley —

Continental request Rule 111 (a)

occ - refused to require directional survey.

no bond has been posted

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field man checked Totco —

agree deviation if in one direction will total only 270' ±

Hence the occ did not order the ~~bow~~ test — no bond need be posted and any test run is the result of an agreement between the parties.

1976 FEB -3

case 5493

IPMFEKA SANA
2-036041E034 02/03/76
ICS IPMBNGZ CSP
9156845835 TDBN MIDLAND TX 378 02-03 0410P EST
PMS NEW MEXICO OIL CONSERVATION COMMISSION

ATTN J D RAMEY, DLR
PO BOX 2088
SANTA FE NM 87501
REFERENCE TEXAS WEST OIL AND GAS CORPORATION MADERA NUMBER 1 WELL 1980 FEET FROM NORTH AND EAST LINE FROM SECTION 5, T-24-S, R-34-E, LEE COUNTY NEW MEXICO PURSUANT TO NMOCC ORDER NUMBER R-5039-B
GENTLEMEN REFERENCE IS HEREBY MADE TO CONTINENTAL OIL COMPANY'S LETTER TO THE COMMISSION DATED JANUARY 23 1976 WHEREIN THEY REQUESTED A DIRECTIONAL SURVEY BE RUN IN SUBJECT WELL SUBSEQUENT TO THE SETTING UP PRODUCTION LINER AND PRIOR TO PERFORATING
THIS IS TO ADVISE THE COMMISSION AND CONTINENTAL OIL COMPANY THAT OUR DEVIATION SURVEY REFLECTS A MAXIMUM DISPLACEMENT FROM THE SURFACE LOCATION OF 272.14 FEET AT A DEPTH OF 13,980 FEET. THIS RESULTS IN AN AVERAGE MAXIMUM DEVIATION FROM TOP TO BOTTOM OF 1.3 DEGREES. AT THIS POINT, THE WELL'S REVISED TOTAL DEPTH IS ESTIMATED APPROXIMATELY TO BE 14,300 FEET SUCH THAT THE ADDITIONAL FOOTAGE BELOW 13,980 SHOULD NOT APPRECIABLY AFFECT THE TOTAL DISPLACEMENT TO THE POINT WHERE WE ARE ANYWHERE NEAR THE LEASE LINE. THESE DEVIATION SURVEYS WILL BE REPORTED TO THE COMMISSION ALONG WITH THE REQUIRED FORMS UPON COMPLETION.
THIS IS TO ADVISE COMMISSION AND CONTINENTAL OIL COMPANY THAT TEXAS WEST WILL COMPLY WITH THEIR REQUESTS FOR DIRECTIONAL SURVEY AS PRESCRIBED IN RULE 111 (A). HOWEVER SINCE CONTINENTAL OIL COMPANY AND THE BELL LAKE UNIT WORKING INTEREST OWNERS WILL BE ASSUMING ALL COSTS INCLUDING THE COST OF THE SURVEY, RIG TIME AND SO FORTH AND ALL LIABILITY FOR THE WELL ITSELF. TEXAS WEST OIL AND GAS CORPORATION WILL INFORM CONTINENTAL 24 HOURS PRIOR TO PERFORATING SUBJECT WELL SUCH THAT CONTINENTAL CAN HAVE THEIR REPRESENTATIVES AND SERVIE PERSONNEL ON LOCATION AT THE PROPER TIME AND TEXAS WEST WILL TURN OVER THE OPERATIONS TO CONTINENTAL FOR THE TIME REQUIRED TO RUN THIS PARTICULAR SURVEY. AT THIS POINT IN TIME, IT APPEARS THAT THE SUBJECT WELL WILL REACH TOTAL DEPTH NO LATER THAN THURSDAY FEBRUARY 5 1976 AND THE LINER WILL BE SET AND THE WELL IN SHAPE SUCH THAT THE DIRECTIONAL SURVEY CAN BE RUN ON MONDAY MORNING FEBRUARY 9 1976. IT IS SUGGESTED THAT THE CONTINENTAL OIL COMPANY PERSONNEL WHO WILL BE RESPONSIBLE FOR RUNNING THIS SURVEY CONTACT THE UNDERSIGNED NO LATER THAN SATURDAY FEBRUARY 7 1976 TO FINALIZE THE ARRANGEMENTS.
L N DUNNAVANT, TEXAS WEST OIL AND GAS CORPORATION

1615 EST

IPMFEKA SANA