BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO
November 1 , 1972

EXAMINER HEARING

IN THE MATTER OF:	)	
	)	
Application of Texaco Inc. for a unit agreement, Lea County, New Mexico and application of Texaco Inc. for a pressure maintenance project and special rules therefor, Lea County, New Mexico	)	Case No. 4851 and Case No. 4852

BEFORE: ELVIS A. UTZ, EXAMINER

TRANSCRIPT OF HEARING

MR. UTZ: The Hearing will come to order, please.

Case No. 4851 - application of Texaco, Inc. for a unit agreement, Lea County, New Mexico.

MR. KELLY: William Booker Kelly of White, Gilbert, Koch & Kelly, Santa Fe, on behalf of the applicant.

Mr. Examiner, cases 4851 and 4852 are really connected. We would ask that they be consolidated for testimony purposes, but with separate orders.

MR. UTZ: Case 4852 is a related matter for pressure maintenance project on the unit agreement, which is covered and 4851, and they will be consolidated for purposes of testimony, with separate orders.

KENNETH HARBIN SWORN TO TESTIFY ON HIS OATH AS FOLLOWS:

DIRECT EXAMINATION BY MR. KELLY

Q Would you state your name, please?

A My name is Kenneth Harbin, I am employed by Texaco Incorporated, Midland, Texas.

Q And what is your position with Texaco?

A Proration engineer.

Q Have you previously qualified as an expert witness in that field before this Commission?

A I have not.

Q Would you give the examiner a brief summary of your professional experience?

A Yes, I received a Bachelor of Science Degree in Petroleum Engineering at Texas Tech University in 1962. I was employed by Texaco at that time. I have held various engineering positions at West Texas and New Mexico over the past ten years involving reservoir engineering and in the field of operations, and I am presently assigned as proration engineer.

Q Then your experience covers the particular Vacuum pool that we are discussing today?

A Yes sir, it does.

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

MR. UTZ: Yes, they are.

MR. KELLY: All right, sir. Now, the two applications for oil, 4851 and 4852, have been condolidated.

Q Would you state what Texaco seeks by these applications?

A Texaco is today making application to, first of all, form a 1400-acre unit comprised of all of portions of sections 1,2,11, and 12, Township 18 South, Range 34 East, Lea County, New Mexico, for the purpose of conducting secondary recovery operations in the Vacuum of the Grayburg-San Andres pools.

Secondly, we request permission to drill eight injection wells, seven producing wells, at unorthodox locations, it order to develop the unit area, and, we further request that a full allowable be granted for each well drilled effective upon completion of that well.

We request approval to initiate a pressure maintenance project in the Vacuum Grayburg-San Andres reservoirs, and we request that Texaco be granted a bonus allowable of 75% above the projected allowable. We request permission to continue the present commingling of separate lease production into a common tank battery for leases both inside and outside of the proposed unit.

And lastly, we request that we be authorized to drill and/or convert additional wells in the proposed unit area without notice of hearing, subject to administrative approval by the Commission.

Q Now, in that connection, are you requesting by this application that the right to drill additional wells be given prior to showing response?

A Yes.

Q Referring to your plat, would you explain the

various codes shown there to the Examiner, Exhibit No. 1?

A Exhibit No. 1 shows a portion of the Vacuum Grayburg-San Andres pool, and the other reservoirs overlying, underlying it. The red border outlines the proposed unit area. The symbol indicated by the individual wells, the letter symbols, are explained in the legend on down here and denotes the completion reservoirs of various wells.

The one of interest is the designation shown as "S" which we've used to denote a Vacuum Grayburg-San Andres completion. Inside the unit area, you will note wells denoted with red circles, these are current Vacuum Grayburg-San Andres producing wells.

The green circles are locations of proposed producers to be drilled, and the yellow triangles denote proposed injection wells to be drilled.

Q The plat also shows other secondary recovery projects in the area, is that correct?

A Yes, it does. Adjoining the proposed unit to the West is Texaco's West Vacuum Grayburg-San Andres unit, and to the North, beginning approximately one mile North of the proposed unit, is Mobile's,

Bridges State water flood project.

Q Now, as far as ownership surrounding that unit, does Texaco own the acreage surrounding it except to the North?

A See, there are Phillips that borders the proposed unit to the North, Shell on the Northeast corner, Marathon on the Eastern edge, Humble and Sohio on the Southeast portion and Amoco to the Southwest corner.

Q And then Texaco would have the rest?

A That's correct.

Q Referring to what is marked Exhibit No. 2, would you identify that?

A Exhibit 2 is the proposed unit agreement.

Q And can you state for the record the actual description, the legal description of the acreage contained in the unit?

A The unit will be comprised of all of Sections 1 and 2, the Northeast quarter of the Northeast quarter of Section 11, the North half of the Northwest quarter of Section 12, Township 18 South, Range 34 East, Lea County, New Mexico.

Q And what is the unitized formation?

A The unitized formation is the Grayburg-San Andres interval. It's specified in the unit agreement on

Article 1.4, page 2.

Q And the purpose of this unit is for a secondary recovery project?

A That's correct.

Q Now, is Texaco the only working interest owner and operator of this unit?

A That is correct.

Q What is the land involved?

A All of the leases here are State owned leases, various beneficiaries.

Q Now, referring to Exhibit 3, do you have tentative approval from the State Land Office, subject only to the Commission's action?

A That's true. Exhibit 3 is a letter from the office of the Commissioner of Public Lands, indicating that they have approved the unit agreement as to form and content, subject to approval by the Commission.

Q Now, I assume this unit is basically similar to other units that have been approved by the Commission?

A That is correct.

MR. KELLY: Now, after the application in 4852, Mr. Examiner, I would like to point out that the notice

contains two small errors which I don't feel are jurisdictional in any sense, but we would like to correct that.

It says by the injection of water through eight wells at orthodox and unorthodox locations. Actually, all the locations sought are unorthodox.

Further, it says that we seek to drill eight producing wells. The applicant seeks seven producing wells.

MR. UTZ: I would consider the applications basically correct, since we don't have a lawyer to argue with.

MR. KELLY: Well, it's alright.

Q Now, referring to Exhibit 4, which is a structure map of the unit, would you give the Examiner the history of this pool?

A Yes, Exhibit 4 is, incidentally, only outlines a portion of the Vacuum Grayburg-San Andres pool, but the Vacuum pool was discovered in May 1929, with production being derived from both the lower Grayburg limestone and the San Andres formation. The field is located on a east-southwest trending anti-cline at the end, which is located on the southern edge of the Northwestern platform. The southern flank of the structures dips steeply

to the hole water contact.

In regard to the proposed secondary recovery area, the heterogeneous carbon characteristics will be illustrated by an exhibit to be presented in later testimony. The Vacuum Grayburg-San Andres reservoir within the proposed project area had an initial resorvoir pressure of minue 600 feet, 1638 p.s.i., with a saturation pressure of 1107 p.s.i. The current reservoir pressure is 720 p.s.i. The field is developed on standard 40 acres spacing. As of August 1, 1972, 558 wells were producing from the Vacuum Grayburg-San Andres pool. Depletion varies throughout the field, from partial to advanced stages.

During July of 1972 the field produced 454,069 barrels of oil and 185,721 barrels of water. The average GOR was 1600 cubic feet per barrel of oil. Cumulative time production to August 1, 1972, was 138,914,336 barrels of oil.

Q That's for the whole pool?

A That's correct.

Q Do you have anything for the unit, cumulative production?

A Yes, cumulative production from the proposed unit

area to 8/1/72 is 16,433,000 barrels.

Q How about water production, is ther much water production there?

A No, I do not have a cumulative water production available, but water production in this proposed unit area has been small.

Q Now, Exhibit No. 5 is pro-well production figures in a unit, is that correct?

A That's correct. Exhibit 5 lists the wells on the proposed unit area, with their current allowable, and the current oil and water testing with the corresponding GOR, gas-oil ratio.

Q And most of these wells are still making their allowable?

A That's correct.

Q Now, as to your plan of operation here, would you, referring back to Exhibit No. 1, show the Examiner what Texaco feels to be the project area?

A Yes, back on Exhibit 1, which is the base map of the area, you will note that inside the unit boundary, we have penciled in a dashed line which connects what we consider to be the outer most wells in the project area.

Q And would you, referring to Exhibit No. 6, explain that to the Examiner?

A Exhibit No. 6 is a listing of the thirteen wells that we propose to drill. The first seven wells listed are the wells that we proposed to drill as producing wells; and we have listed the lease and well number, the actual footage locations, and the Section, Township, and Range, and following that we have listed similar information for the proposed injection wells.

Q Now, this is only for the wells that you plan to drill?

A That is correct.

Q Now, about your designation for the existing wells?

A We plan to continue to present well numbering system and designation that we have at this time.

Q Are your present producing facilities for the various leases in the unit consolidated at a cental point?

A Yes, they are. We have a consolidated battery located on our State "S" lease which is in the north-west corner of the unit area. We consolidate production from each of the leases in the unit area as well as other leases outside the unit area. The production is metered, of course, prior to leaving the individual leases, and we plan to, with the Commission's approval, continue this practice of

commingling this production.

Q All right, now, go ahead and explain the plan of the project.

A I think it could best be seen on the Exhibit 1, the base map.

By drilling these proposed injection wells and producing wells, we will develop an inverted 9-spot injection pattern within what we have designated as a project area, and this will, in effect, be developing this acreage on 20 acre spacing as opposed to the current 40 acre spacing.

Q All right. Now, as to your injection procedures, referring to Exhibit 7, is that sketch typical of the installation that you will use for all your injection wells?

A Yes sir. That is correct. Of course, since we plan to drill all of our injection wells, this is the proposed installation. This particular one is what we proposed to install in our New Mexico P State N.C.T. 3, Well No. 20; but it is typical of the similar installations that will be used on the other seven wells.

We plan to drill and complete this well, these eight wells, I should say, using 8 and 5/8 surface casing at approximately 350 feet, cemented

with 210 sacks cement, which should be sufficient. We will then install 4 and 1/2 inch production casing at approximately 4710 feet, cemented, with 650 sacks. We estimate the top of the cement to be at 2,000 feet. We will then use 2 and 3/8 inch plastic coated tubing with a packer, the packer being set above the pay interval at approximately 4360 feet. We will load the casing tubing annulus with inhibited water. Injection interval will be approximately from 4460 to 4710 feet. This exact interval, of course, could vary between the various wells.

Q The figures that you gave would be the range of all the wells, or just this particular well?

A That will be the range. I might add, too, that we will install a pressure gauge on the tubing and on the casing annulus.

Q Can you give the Examiner what you contemplate as far as injection rates and pressure?

A Well, we anticipate an injection rate of about 1500 barrels of water per day, per well, at a pressure of 2,000 p.s.i.

Q Do you think you will have any problem in injecting that volume with that pressure in this pool?

A No, we do not.
Q Do you anticipate any corrosion problems?
A No, we will be using fresh water and we are taking care in using inhibited water in the annulus, and plastic coating tubing to prevent corrosion.
Q Does Texaco have what they consider an adequate water supply for the project area and for any expansion within the limits of the unit?
A Yes, the water rights which we have will be sufficient for the current project area and any expansion up to the unit area.
Q In your opinion, will the installation you have shown on Exhibit 7 prevent migration of fluids to any other zone?
A Yes, it will.
Q Now, let's go to the unorthodox aspect of this period. What is unorthodox about the locations of these wells?
A In order to develop the space in which we have outlined, the proposed wells to be drilled will fall at less than 330 feet from the border section rights.
Q What is the reason that Texaco plans to drill all these additional wells rather than using your existing pattern for a project?

A It's Texaco's opinion that these additional wells are needed to recover additional secondary oil that is not recoverable under present spacing. We've conducted a study of the proposed unit area, which indicates that the pay in the reservoir is laterally discontinuous.

Q That's Exhibit No. 8?

A That's correct.

Q Go ahead and show that to the Examiner.

A Exhibit No. 8 is a schematic representation of the pay discontinuity which we have determined from our study, and the results of our study indicates that only about 60% of the actual pay interval is continuous between more than two wells.

Utilizing the present spacing would result in a portion of this porous interval not being opened to injection, and we anticipate by in-field drilling on the 20 acre spacing, we will reduce the unflooded pay by approximately half. Of course, another benefit which can be derived from the drilling of these injections wells lies in the fact that most of the present wells are open hole completions, and by drilling in the casing through the proposed injection interval

and our injection wells, we will be able to complete them in such a way as to control the actual intervals of injection.

Q Now, has Texaco's experience with that adjoining waterflood, does that support your conclusion that a more dense pattern would be more effective?

A Yes, it does. That West Vacuum unit, which adjoins us here on the west, was initially developed as a double inverted 9-spot pay lot. We initiated this project about 1965, and we did obtain response with that pattern, but the response was slow.

We have recently, earlier this year, developed and expanded the injection pattern in the west Vacuum unit to a 5-spot pattern in order to accelerate response, and we feel that by developing this on even denser spacing, we will recover additional reserves, that we could not recover otherwise.

Q You mentioned that Texaco's studies support the conclusion that you've shown on Exhibit 8.

Referring to Exhibit 9, would you give the Examiner some of the information that supports this conclusion?

Q Exhibit 9 is an actual log cross section, from which

the schematic diagram on Exhibit 8 was derived.

Q Before we get into the discussion of what it shows, let's locate, using your structure map, Exhibit 4 of the wells, that are on your cross section.

A I think probably the structure map would be the best, that's Exhibit 4, I believe.

The cross section begins actually on just outside of the northern boundary of the project area on Texaco's "O" tract one, well number 8. It extends southward down to the second location which is the "M" number 4. It then goes east to the "M" number 1, goes further east to the "L" number 1, on east to "L" number 3, and then north again to "L" number 2.

Q Now, the cross section doesn't cover the whole unit. Did Texaco use all of the available logs?

A That is correct. In order to develop a cross section, I had the continuous pay, as we've tried to do, we denote porosity logs, we have other logs across the area which are old electric logs, and they are not really satisfactory for our purposes.

Q In your opinion, though, is the conclusion shown

on Exhibit 8 indication for the whole unit, rather than just the area covered by the cross section?

A And it might explain just a little further here, that Exhibit No. 9 here does indicate that the porous intervals are not continuous across the field, they are continuous, maybe, for one, two, or three wells, but as far as being consistently continuous laterally, across the field, the are not.

Q Now, do you have any other evidence that you can give the Examiner as far as other studies of this nature in this pool?

A Yes, I might refer to a previous case, it was Case No. 4368 in September 17, 1970, which was a De Novo hearing involving Mobile Oil Corporation, and their Bridges State waterflood project for the north.

They presented in their testimony Exhibit No. 11, which was a cross section that began just to the North of our proposed unit area, and continued in a northerly line for approximately 4 miles, and their cross section essentially indicates the same type of pay discontinuity that we have represented here on our cross section.

Q All right. What do you predict the performance of this pressure maintenance project will be?

A The project area, I again will refer to Exhibit No. 1, which outlines the project area, will recover a total of $14,660,000 barrels full of secondary oil. Of this amount, 2,349,000 barrels are directly attributable to the in-field drilling program.

Current production from the proposed project area is 1650 barrels per day from 24 wells. Upon completion of the frill program, production wi-l be increased by an anticipated 1120 barrels per day. The project will achieve a peak producing rate of 5460 barrels per day for 39 wells; that's 24 existing wells, plus the 16 proposed wells. Ultimate primary recovery from the wells within the initial prject area will be 16,654,000 barrels of oil; cumulative recovery is 10,875,000 barrels, which indicates that it is approximately 65% depleted at this time.

Q Now, these figures assume that the Commission grants you the authority to in-field drill and also grants you the authority for the bonus allowable, is that correct.

A That's correct.

Q Well, let's go into this bonus allowable. What is the reason that Texaco feels it is crucial to have this extra allowable?

A In our opinion, the bonus allowable is necessary to prevent waste of oil reserves and to insure the most efficient recovery of oil from the reservoir, and I would refer you, again, to Exhibits 8 and 9 which indicate that the pay continuity in this portion of the reservoir is in the ratio of 60% continuous, the total pay period.

You can visualize, I think, from Exhibit No. 9, that because of the heterogeneity of the reservoirs, as the flood front in any of the pattern of this reservoir fronts, from an injection well to a producing well, that any response oil that is not produced as it reaches the wellbore will continue on past the producing well, and a portion of it will enter into discontinuous pay, which has been completed under primary production but is not continuous to another producing well. As the flood front then continues, a portion of this trapped oil will be permanently

trapped, due to the arrival of the flood front at the producing well.

We estimate this loss to be in order of 1 million barrels. This is a conservative estimate and could be considerably more than that. We considered one alternative of handling this problem, that would be to limit injection rates in order to limit the amount of response. However, by limiting injection rates, this will have a detrimental effect upon the injection profile due to the same heterogeneity of the pay interval.

Under curtailed injection rates, the injection profile would be altered and water would not enter all of the zones that we desire to flood, resulting in poor sweep efficiency. Maximum recovery, then, is dependent upon maintaining optimum injection rates. The only way to optimize injection rates and vertical sweep efficiency, and at the same time, to limit the loss of the reserves to discontinuous pay, is to have the ability to produce all of the response oil as it comes to the producing wellbore. To do this requires a bonus allowable of 75% above the project allowable.

Q Now, do you feel that there is an advantage as far as ultimate recovery, to institute a pressure

maintenance project now, rather than wait for these wells to be depleted and then go into a waterflood?

A Definitely, there is. By flooding the reservoir at this higher pressure, at this present time, secondary recovery will be increased 2,400,000 barrels, and this additional recovery is due to the fact that at a higher performance, volume factor, there will be fewer stock tank barrels of oil left behind as residual oil.

Q So, what you are saying here, is that the granting of this application in it's complete form will save an estimated 2,400,000 barrels of oil that would not be recovered; or are you just saying that it would be delayed?

A That it would not be recovered.

Q So, I assume that 75% bonus allowable represents your engineering estimate, or decision, of what is necessary to produce this unit most efficiently and that basically you are seeking the right to produce all the oil that responds to your pressure maintenance project, is that correct?

A That's correct.

MR. KELLY: Mr. Examiner, we would point out that Texaco feels that under the 701D2, the Commission

certainly has the authority to set what ever allowables on a case by case basis. The fresh maintenance project should have, and we would, we feel there is no legal problem as far as Commission granting this type of application and that the evidence supports that it would certainly support the conclusion that it would prevent waste.

BY MR. KELLY:

Q If the application were granted, and you were able to produce this additional oil, you would probably have additional casing head gas. Can you guarantee to the Commission that you would have a purchaser for both?

A Yes, we have contacted Texas-New Mexico Pipe Line, and Phillips Gas Pipe Lines, and we have a written indication from each of them that they will be able to handle the increased oil and casing head gas production.

Q Now, in your opinion, would this granting of these two applications prevent waste by allowing you to recover substantial amounts that would otherwise be lost, and also protect the correlative rights of off set operators in the area?

A Definitely, it would.

Q Were Exhibits 1 and Exhibits 4 through 9 prepared by you or under your supervision?

A They were.

Q And Exhibit 2 is a conformed copy of the unit agreement?

A It is.

Q And Exhibit 3 is a copy of the land office's approval?

A Right.

MR. KELLY: I would move at this time the introduction of Exhibit's 1 through 9.

MR. UTZ: Without objection, Exhibit's 1 through 9 will be entered into this case.

MR. KELLY: We have no further direct testimony.

CROSS EXAMINATION BY MR. UTZ:

Q In referring to the project area, don't we consider the off-sets and diagonal off-sets as a part of the project area, that is to injection wells?

A As I recall, the waterflood projects are spelled out that way. I think pressure maintenance are not specifically spelled out, but historically, that's the way they've been interpreted.

Q What are you asking for, now, you are asking for the project area to be the area outlined in pencil on Exhibit 1, or the unit?

A The project area that, really, this was in anticipation of what would be granted, it's the penciled, outlined area.

Q I'm sure Texaco would have no objections if the Commission were to grant the project area as the unit area.

A It would certainly be to our benefit, of course, to have the entire unit area designated as a project area. But since there were no specific guidelines here for the pressure maintenance project, like I say, this is what we anticipated.

Q Well, in your opinion, were the wells outside or beyond and to the outside of the project wells, injection wells, receive any benefit from your injection?

A Possibly, but that's something we could not demonstrate.

Q And, what you are telling me here is that the new depth factor allowables for the area outlined by pencil on your Exhibit 1 will not be such to handle the oil produced?

A That's correct.

Q And that increased by 75%?

A Right.

Q Now, if the Commission should decide to allow

you the unit area as your project area, how would that effect your production?

A I would have to do a little calculating there to see if that would be sufficient.

Q You would have quite a few additional wells, wouldn't you?

A That would entail 35 existing wells, and 15 proposed wells, so that's 50 at 80 barrels a day that's 4,000, and we anticipate a peak producing rate here of 5460 barrels per day. So that allowable still would not be adequate to handle all the response oil that we anticipate.

Q How many producing wells will you have in the unit there?

A There are 35 existing wells, and we are going to drill seven more.

Q Being 45 wells?

A Yes.

Q And what is the depth factor allowable?

A Eighty--3,600 barrels.

Q So even then you would need an increase in ratio--increase by a ratio of 3600 to 5460?

A That's correct.

Q Okay, would you clarify for me as to how you are commingling now?

A Yes, we have one central battery located on our SE tract 1 lease, that is in the Northwest portion of the unit. Production from each of these individual leases in the unit area and other leases outside the unit area even, for example, our S lease which is to the North there is one, production is metered continuously on these individual leases and then transported down to the central battery and commingled at that point.

Q Now, how would the oil produced from the unit area be handled? Would that be considered one lease?

A We plan to continue metering production from the separate tracts.

Q From each separate lease?

A Yes.

Q Now, referring to Exhibit 6, all your producing wells, as I understand, are on location?

A Yes.

Q And how about the ones with edges, are they on standard location?

A Yes.

Q So everything is on standard?

A Yes sir.

Q And to the best of your knowledge, these are the locations which you intend to drill, is that right?

A That's right.

Q So, in addition to that, you are asking, are you not, for administrative approval of any other standard and non-standard locations?

A That's correct.

Q For producing and injection wells?

A Yes sir. I might add here, too, that we do anticipate expanding this project area, maybe at a later date, of course, depending upon the performance of the initial project area by drilling additional injection and producing wells, extending it out to the unit battery. At that time, of course, we would either have a cooperative agreement with the other off-set operators, or, if it's possible, we might attempt to expand the unit boundary intself at that time. But one way of the other, we would include the off-set operators, cooperate with them.

Q Now, it would be under the present conditions, it's your intention of producing more than a depth factor allowable from the outside wells, or wells adjoining the boundries of the unit?

A Only insofar as they are also in the project area.

Q Well, Well number 4 and number 4 on the westside of the unit would qualify for that, would they not?

A Yes.
Q As well as number 7-5 and 2-2?
A Yes.
Q Now, what difficulty would you encounter in limiting those wells to one depth factor allowable?
A It's possible that one problem that would be involved in this would be that since we are injecting back to the interior of the project area, that if we were not able to produce these wells at a sifficient rate to recover all the response oil, we could push oil from the unitized area to the leases outside of the unit area.
Q Well, we have a proposal by Phillips and we may as well consider that because at this point, and on the record, that you be limited to these wells or to the allowable for these wells to one depth factor allowable. Now, as I peruse your map here, is Phillips involved in only Section 35 to the north of the unit?
A That's right.
Q And under the project rules you proposed here, they would not be effected?
A That's right.
MR. UTZ: Are there any other questions of the witness?

REDIRECT EXAMINATION BY MR. KELLY:

Q Referring back to Exhibit No. 5, in answer to the Examiner's question, the wells in the project area, what are their current allowables now, on the outside boundary?

A By and large they are top allowable wells at the present time.

Q So, if they were limited, you wouldn't be able to produce any response oil?

A That's correct.

Q And you did inform all off-set operators of this application, is that correct.

A Yes, they received a copy of our application.

MR. KELLY: I have nothing further.

MR. UTZ: The witness may be excused.

Are there statements in the case?

(No response)

MR. UTZ: The Commission has a letter from Phillips Petroleum which I will read their proposal into the record. Did you receive a copy of this?

MR. KELLY: Yes, we did.

MR. UTZ: Well, in fact, it requests that a rule

be incorporated in the order to limit any directly or diagonally off-set wells to the outside boundary of the unit to one depth factor allowable.

We have discussed this in the record, which ought to be sufficient.

The cases will be taken under advisement and the hearing is adjourned.

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, JOHN DE LA ROSA, A Certified Shorthand Reporter, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

John De La Rosa