STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

APPLICATION OF MISSION RESOURCES CORPORATION FOR THREE INFILL GAS WELLS AND SIMULTANEOUS DEDICATION, LEA COUNTY, NEW MEXICO

CASE NO. 13,252

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: WILLIAM V. JONES, JR., Hearing Examiner

April 29th, 2004

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, WILLIAM V. JONES, JR., Hearing Examiner, on Thursday, April 29th, 2004, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South Saint Francis Drive, Room 102, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

* * *

I N D E X

April 29th, 2004
Examiner Hearing
CASE NO. 13,252

* * *

E X H I B I T S

Applicant's	Identified	Admitted
Exhibit 1	7	10
Exhibit 2	8	10
Exhibit 3	9	10
Exhibit 4	17	25
Exhibit 5	22	25
Exhibit 6	33	43
Exhibit 7	34	43
Exhibit 8	35	43
Exhibit 9	36	43
Exhibit 10	38	43

* * *

A P P E A R A N C E S

FOR THE DIVISION:

DAVID K. BROOKS, JR.
Assistant General Counsel
Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

FOR THE APPLICANT:

HOLLAND & HART, L.L.P., and CAMPBELL & CARR
110 N. Guadalupe, Suite 1
P.O. Box 2208
Santa Fe, New Mexico 87504-2208
By: WILLIAM F. CARR

* * *

WHEREUPON, the following proceedings were had at 8:20 a.m.:

EXAMINER JONES: And the next case we'll call is Case 13,252, Application of Mission Resources Corporation for three infill gas wells and simultaneous dedication, Lea County, New Mexico.

Call for appearances.

MR. CARR: May it please the Examiner, my name is William F. Carr with the Santa Fe office of Holland and Hart, L.L.P. We represent Mission Resources in this matter, and I have three witnesses who need to be sworn.

EXAMINER JONES: Any other appearances?

There being none, will the witnesses please stand to be sworn?

(Thereupon, the witnesses were sworn.)

EXAMINER JONES: Okay, go ahead.

NANCY K. GATTI,

the witness herein, after having been first duly sworn upon her oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. CARR:

Q. Would you state your name for the record, please?

A. Nancy K. Gatti.

Q. Would you spell your last name?

A. G-a-t-t-i.

Q. Ms. Gatti, where do you reside?

A. In Houston, Texas.

Q. By whom are you employed?

A. By Mission Resources Corporation.

Q. And what is your position with Mission Resources Corporation?

A. I am regulatory coordinator.

Q. As regulatory coordinator, are you required to work with the land employees of Mission Resources and know the status of the lands for which you're filing the Application?

A. Yes, sir.

Q. And you were actually the employee of Mission who filed the original applications for the wells that are the subject of today's hearing?

A. Yes, I was.

Q. Are you familiar with the status of the lands in the area that's the subject of this case?

A. Yes, I am.

Q. Have you previously testified before this Division?

A. No, I have not.

Q. Would you summarize briefly for Mr. Jones your educational background?

A. I attended Texas A&I University down in Kingsville, Texas, studying sociology, and then I went into the oil and gas industry and for the last 30 years have been there.

Q. And during this 30-year period of time, have you been doing land and regulatory work for various oil companies?

A. I have been doing regulatory compliance for 25 years for various states, and including federal permits also with the BLM and the MMS for federal offshore.

Q. Are you familiar with the Application filed in this case on behalf of Mission Resources Corporation?

A. Yes, I am.

MR. CARR: Mr. Examiner, we tender Ms. Gatti as an expert witness in regulatory affairs.

EXAMINER JONES: Ms. Gatti is tendered as an expert witness in regulatory affairs.

Q. (By Mr. Carr) Could you briefly summarize for the Examiner what it is that Mission Resources seeks with this Application?

A. Mission Resources is seeking an exception to the Jalmat Special Pool Rules for three new drill wells to infill the Section 11, Township 22 South, Range 36 East, to infill those -- it's a standard location -- and to dedicate, simultaneously dedicate, those three wells with

the existing nine wells, and also for the production aspect too.

Q. So what we have here is, we have a 640-acre standard Jalmat gas spacing unit?

A. That is correct.

Q. At present there are nine wells on that unit to which that acreage is simultaneously dedicated?

A. Yes, there is.

Q. And you're seeking to have three additional wells?

A. That's correct.

Q. Are each of these wells the only Jalmat well on a 40-acre tract?

A. Yes.

Q. And each of the wells are standard setbacks from the outer boundary of that dedicated -- or that subject 40 acres?

A. Definitely.

Q. Let's go to -- Before we do that, there's one plugged and abandoned Jalmat well on this --

A. Yes, there is. There's one well that's plugged and abandoned, Number 18.

Q. Why don't we go to Mission Resources Exhibit Number 1, and I'd ask you first to identify that and explain what it shows.

A. This shows the acreage dedicated to the existing nine wells and the proposed three wells.

Q. Point out the three wells for the Examiner, please.

A. They are the Number 82, Number 83 and 84, which are in Unit J, K and O.

Q. In the southern portion of this acreage?

A. Yes.

Q. And where is the plugged and abandoned well?

A. It's in Unit G, 1650 from the east line and 1650 from the north line.

Q. And the Application filed in this case summarizes the prior approvals for the wells that currently are simultaneously dedicated on this acreage; is that correct?

A. That's correct.

Q. What is Exhibit Number 2?

A. Exhibit Number 2 shows the offset affected adjacent tracts to the Section 11 of the 640 acres.

Q. And these are the Division-designated operators of offsetting properties?

A. That's correct.

Q. Was notice provided to each of these operators?

A. Yes, sir.

Q. Is Exhibit Number 3 an affidavit confirming that notice of this Application --

A. Yes, it is.

Q. -- has been so provided?

A. Yes, it is.

Q. Ms. Gatti, if we look at the notice list, there are a couple of additional people, above and beyond those who are shown on Exhibit 3, ARCO Permian being one and Burlington being the other?

A. That's correct. When the attorney was going through there in conjunction with Federal Abstract, trying to locate all the operators, they were shown as operators of some wells in there. And so we wanted to make sure that -- to ensure that we covered -- all the offsets were notified.

MR. CARR: If you notice, Mr. Examiner, there are certain Burlington properties in 10, 15 and 14. Those were originally ARCO properties, and when their name came up we wanted to be certain everybody who had any interest was covered, so they were notified.

Also, Burlington came up showing it had an interest in the well in Section 10, and we just erred on the side of -- I mean in the Gruy property in Section 10, so we erred on the side of notifying them.

Q. (By Mr. Carr) Ms. Gatti, will Mission Resources call geological and engineering witnesses to present evidence to show why the additional wells are necessary to

effectively and efficiently drain this Jalmat spacing unit?

A. They will. There will be an engineering witness and a geology witness to demonstrate that the reserves would be drained if we did not drill these wells on quarter sections instead of 160.

Q. Were Mission Exhibits 1 through 3 either prepared by you or compiled under your direction?

A. They were prepared by me and my attorney.

Q. And I am your attorney?

A. And you being my attorney.

MR. CARR: May it please the Examiner, at this time we move the admission into evidence of Mission Exhibits 1 through 3.

EXAMINER JONES: Exhibits 1 through 3 are admitted to evidence.

MR. CARR: And that concludes my direct examination of Ms. Gatti.

THE WITNESS: Thank you.

EXAMINATION

BY EXAMINER JONES:

Q. Ms. Gatti, the area in the northeast of Section 3 and the north -- southwest of Section 13, you left those blank. Are those -- Who owns those? Are those not spaced?

A. I --

MR. CARR: Mr. Jones, I can answer.

THE WITNESS: -- they -- well, I think --

MR. CARR: I did this.

THE WITNESS: -- Bill Carr --

MR. CARR: Actually, the northwest of 3 is a Chevron property, the northwest of 13 is Marathon. We didn't include them --

EXAMINER JONES: Okay.

MR. CARR: -- and the reason was, they weren't touching the spacing unit. But that's who the owner is, and they were notified --

EXAMINER JONES: Okay.

MR. BROOKS: In the southwest of 13.

MR. CARR: I'm sorry, I mean the southwest of 13.

EXAMINER JONES: Okay.

Q. (By Examiner Jones) Okay, so the rules say that you have to notify all affected parties, which means all of the parties in the spacing units, right?

A. That's correct.

MR. CARR: All the designated operators.

EXAMINER JONES: Designated operators, and they're all designated as operators. Okay.

Q. (By Examiner Jones) And on these Jalmat rules, it doesn't say that you have to get waivers, does it? It just says you --

A. It says you can get waivers if you have waivers,

or else you can do the notification.

Q. Okay.

A. It's 20 days for any protest from the affected offsets.

Q. Okay, and that well that's plugged, again --

A. Yes.

Q. -- that's Number 18?

A. Number 18, yes, sir.

Q. Okay. So it's no longer considered -- So basically the three wells you're looking at is in the south half of the section, and two of them are in the same 160, and you're only allowed by the Rules, unless you get an exception, one well per 160; is that correct?

A. Exactly, exactly, and that's what we're doing, doing infill drilling on quarter quarter section there, but we're not putting more than one well on a quarter quarter section.

Q. Okay. There appears to be quite a history of applying in this section for exceptions, and is that all laid out in this packet, or do you want to just briefly tell me why there are so many other wells besides four wells in this section?

A. The previous wells were, of course, drilled by previous operators. Mission acquired these properties at the -- in January of 2004, and as you'll see from the

geological and engineering presentation and witness that's here, there is -- these wells were needed in order to recover the reserves that otherwise would not be recovered by just drilling on -- one well per 160 acres.

Q. Okay, Mission has their bond all set up with the State of New Mexico?

A. Yes, yes, we definitely did. We became a designated operator here in New Mexico with the State on February the 1st of 2004. Mission had previously been an operator a few years before but then had sold those properties.

Q. Okay, where are you guys located at?

A. We're in Houston, Texas --

Q. Okay.

A. -- in downtown Houston, Texas.

Q. Downtown Houston, Texas.

A. Uh-huh.

Q. Okay, inside the loop, I take it.

A. Right there by Minute Maid Park.

Q. Okay. Okay, I think I can read up on the history of the wells that were previously --

MR. CARR: Mr. Jones, the Application that I filed in this case sets out order number, date, and each of the previous wells --

THE WITNESS: Uh-huh.

EXAMINER JONES: Okay.

MR. CARR: -- on the acreage, in paragraph 2, 3 and 4 --

EXAMINER JONES: Okay.

MR. CARR: -- of the Application. And this section was also the subject of a hearing several years ago in which Raptor Resources was adding several wells, so also set out chapter and verse in that order --

EXAMINER JONES: Okay.

MR. CARR: -- and it's referenced in the Application.

EXAMINER JONES: Okay, so if our imaging system is working right I can read all about it.

THE WITNESS: Yes.

MR. CARR: I'm not going to touch that.

EXAMINATION

BY MR. BROOKS:

Q. Which of the locations shown on Exhibit 1 are the proposed new ones?

A. That is Number 82, 83 and 84, which are in Unit --

Q. Okay, 83 is in the southeast --

A. -- quarter --

Q. -- of the southwest?

A. Yes.

Q. 84 is in the southwest southeast. And what was the other one?

A. Number 82 in the northwest southeast.

MR. BROOKS: Thank you. I haven't been in New Mexico long enough. It's easier for me to -- instinctively, I come to the geographic designation faster than I do the unit letter. All those years in Texas.

FURTHER EXAMINATION

BY EXAMINER JONES:

Q. Well, it looks like BP America is your main affected party, effectively to the south in Section 14, and did that used to be Amoco or --

A. BP was --

Q. -- ARCO or --

A. Let's see, was it --

MR. PEARCY: ARCO.

THE WITNESS: -- ARCO, I believe.

MR. CARR: Yes.

THE WITNESS: Yeah.

EXAMINER JONES: It was originally ARCO property?

MR. CARR: Correct.

Q. (By Examiner Jones) And they obviously had no objection?

A. We -- not that we have sent out with the affidavit in this as Exhibit 3, showing that we have

notified them, and we have not heard anything from them.

MR. CARR: And we do have the return receipt on that --

EXAMINER JONES: Okay.

MR. CARR: -- it's in Exhibit 3.

EXAMINER JONES: Okay, thanks a lot, Ms. Gatti.

THE WITNESS: Thank you.

MR. CARR: May it please the Examiner, at this time we would call our geological witness, David Pearcy.

DAVID B. PEARCY,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. CARR:

Q. Would you state your name for the record, please?

A. David B. Pearcy.

Q. Mr. Pearcy, where do you reside?

A. I reside in Midland, Texas.

Q. And by whom are you employed?

A. I'm a consultant for Mission Resources.

Q. Have you previously testified before the New Mexico Oil Conservation Division?

A. Yes, I have.

Q. And at the time of that testimony were your credentials as an expert in petroleum geology accepted and

made a matter of record?

A. Yes.

Q. Are you familiar with the Application filed in this case on behalf of Mission Resources?

A. Yes, I am.

Q. Have you prepared a geological study of the area that is the subject of this case?

A. I have.

Q. And are you prepared to share the results of that work with the Examiner?

A. Yes, I am.

MR. CARR: We tender Mr. Pearcy as an expert witness in petroleum geology.

EXAMINER JONES: Mr. Pearcy is qualified as an expert witness.

Q. (By Mr. Carr) Mr. Pearcy, let's take a minute here and get out Exhibits 4 and 5. They're large composite exhibits.

A. We'll refer first to Exhibit Number 4, which is a montage with cross-section A-A' on there, and as you can see, this indicates Mission's location number 83 near the right-hand side.

If I could direct your attention to the maps on the left-hand side first, up in the left-hand corner is a structure map on the top of Yates for Section 11 and the

adjoining parts of particularly Section 14 to the south and the other adjacent sections.

Geologic tops for the Yates formation have been picked in each well in this one-and-a-half-section area. The formation top for the Yates is subject to some interpretation because the upper most Yates does change significantly from well to well.

The Yates sands are highly variable and discontinuous in the area, perhaps because of repeated fault movements along the Central Basin Platform, and as you can see on this map, Mission's three locations in the south half of Section 11 are indicated and are also highlighted with the yellow box on the other base map to the south.

And you can see the line for cross-section A-A' runs generally from the northwest quarter of Section 11 through the middle of Section 11, when it doglegs down to the south and includes one well in Section 14 which, as we mentioned earlier, is now part of BP's acreage.

Q. And on this cross-section A-A', you show the location of the proposed State A 83, Account-2 83 well?

A. That's correct, just one of the three wells is indicated on this cross-section, and the other two wells will be on the next exhibit that I have.

Q. All right, Mr. Pearcy, let's go to the cross-

section, and let's explain the color-coding and then work across this well by well, if we can.

A. Yeah, I want to point out the color-coding is something new that we've added to help show the discontinuity between wells.

This cross-section is hung on the top of the Yates and, as we mentioned, Well 83 is on here. The color scheme between wells is derived from the gamma-ray and is a schematic illustration of well-to-well variation of gas sand and non-pay carbonate. 100 API sands are colored bright yellow, and 30 API or less carbonates, which are going to be tight, are colored magenta. And we've got a range of color variation between those two. And these colors help demonstrate the discontinuous nature of the sands between wells that will not allow a single well on 160 acres to drain all those sands that are present.

We've also annotated the base of the Jalmat Pay zone, called the top of the South Eunice Pool, that dotted line across here, which has been verified with the Hobbs OCD.

I'll go through each well on this cross-section, moving from the left-hand side.

On the left side is Mission's Number 79, an excellent July, 2001, Jalmat completion in the northwest quarter. Ultimate from this well has been shown at the

bottom to be approximately .6 BCF, and the current rate from this well is 105 MCF a day. This well was frac'd with 302,000 pounds of sand, and results are excellent are excellent for one of our new infill wells.

The next well on the cross-section is the south offset to it by about 1500 feet, the Number 75 -- you see we go all the way down to that dogleg now -- and this is a 2000 completion in the Yates-Seven Rivers which was frac'd with 175,000 pounds of sand, and ultimate for this well will be over .3 BCF. Current rate is around 55 MCF a day. And notice that this well had excellent clean sand down below, which is indicated as being plugged back right now. This is strictly a Jalmat completion right now, but it does indicate the Queen is potentially productive in the area as well.

Now we go east from the Number 75 to Number 62. This was a 1977 completion in the Jalmat Pool. The Yates-Seven Rivers interval was frac'd with 92,000 pounds of sand. This well has made 2.9 BCF, and we're estimating EUR at 3.1 BCF. Current rate in this well is only 42 MCF a day, and compared to Well 75 the quality of Yates sands has deteriorated, and we're trying to show that with the color scheme up there. You aren't getting as many bright yellows as we had before, but better Seven Rivers sands have developed. Again, there's a good indication of the

heterogeneity of the sands, that is the reason why we need to drill the wells on 40-acre spacing.

Mission's proposed Well Number 83 is next as the south offset to Number 62. The good EURs -- the Number 62 and 36, which is in the far southwest corner, not on this cross-section -- encourage us to want to drill this well to exploit the significant reservoir-quality Yates and Seven Rivers sands. And the performance of some of these other offset wells will be discussed in the engineer's testimony, and I'll leave details on that to him.

The last log on the cross-section is Southwest Production's McDonald Number 1, a 1961 Queen test in Section 14. It did not test the Yates. It was plugged in 1965. This was a South Eunice completion, potential for 295 MCF a day, and made minimal gas, but the Jalmat interval was never tested. Note again how the upper Yates and many Seven Rivers sands that were developed in Number 62 have become nonreservoir carbonate. Again, we're showing at the bottom here that this well made nothing from the Jalmat zone and is currently P-and-A'd.

Q. Mr. Pearcy, looking at this exhibit, is it fair to conclude that development of the Jalmat with one well on each 160-acre spacing unit, because of the heterogeneous nature of the reservoir, would simply leave reserves behind?

A. Exactly, the reservoir would be vastly under-exploited if it were just drilled on 160-acre spacing, and the color scheme in here is an attempt to show it more visually, that there's a lot of variation from well to well.

Q. Did you attempt to prepare an isopach map on the area?

A. Yes, I did, I attempted to prepare an isopach map for the Yates, although I had a lot of difficulty doing that. The majority of the logs in this area are old-vintage neutron logs, and even some sample logs, and interpretation, I found, is very subjective. Even the newer density neutron logs require a variable cutoff to determine a reasonable pay count. However, we believe the Yates sands are generally thicker on the west side and thin to the east. And again, the engineering testimony that I'll present will help you see the cums for all these wells and get a better picture of that.

Q. And you didn't prepare an isopach because it required such a subjective analysis?

A. That's right. I'm not sure we even believe what the isopach map says, so it's pretty meaningless.

Q. Let's go to the next exhibit, Mission Exhibit Number 5, again another composite exhibit.

A. Yes.

Q. On this exhibit we have the same structure map, correct?

A. That's correct, Exhibit 5 --

Q. The same base map, but a different trace for this B-B' cross-section?

A. That's right. As you can see, this cross-section, B-B', starts out with two of the wells we've seen earlier, the Number 75 and Number 62, and then heads east from there to proposed Well Number 82, and turns south to include Well 84, and then finishes up on Section 14 on the BP acreage, and we have one log from a recent well of theirs at the far right-hand end.

If I could just briefly mention, Wells 75 and 62 are the ones you've seen before. Both of those are Jalmat completions. And Number 62, the EUR on that well is 3.1 BCF. And again, we feel that this well is indicating there's plenty of reservoir sands that need to be exploited, and therefore we want to drill both of these wells, which are going to be east of there, the Number 82, which is next on the cross-section, and the 84, which is south.

Once you just jump to the far southern well on the cross-section, which is BP's well, BP McDonald Number 40 was completed in May, 2001, had a 132,000-pound frac across over 600 feet of Tansill, Yates and Seven Rivers,

and will ultimately make about 50 million cubic feet. Current rate for this well is about 125 MCF a day.

Although this is a poor well and the colors are illustrating that the sands are largely gone in this well, with the exception of some of the Seven Rivers, there is an east offset to this McDonald Number 40, which is the Number 31, shown on the map there, which has an EUR of about .4 BCF. So our sands are definitely not gone, there is still reservoir-quality sand in these areas that Mission would be remiss in not developing by drilling this area, by completing Section 11 on 40-acre spacing.

Q. Mr. Pearcy, could you just summarize for the Examiner the conclusions you've reached from your geological study of the area?

A. Yes, certainly. Additional wells on 40 acres need to be drilled, to fully develop the Jalmat gas and oil reserves. The geological discontinuities in Yates and Seven Rivers formations results in significant variation from well to well. And if this pool were developed on 160-acre spacing, many of the sands would be under-exploited.

Mission needs to have 40-acre development in this area to exploit the reserves, and that's why these three wells are necessary to fully produce all the reserves that Mission has in the area.

Q. And Mission will call an engineering witness to

review that portion of the case?

A. Yes, they will.

Q. Exhibits 4 and 5 were prepared by you?

A. Yes, they were.

MR. CARR: May it please the Examiner, at this time we'd move the admission into evidence of Mission Exhibits 4 and 5.

EXAMINER JONES: Exhibits 4 and 5 are admitted to evidence.

MR. CARR: And that concludes my direct examination of Mr. Pearcy.

EXAMINATION

BY EXAMINER JONES:

Q. Mr. Pearcy, what kind of environment did you have where you had alternating sands and carbonates?

A. The sands, we believe, were formed at a low stand when the carbonate factory was turned off, that the carbonates we get in through here are largely anhydritic, probably because of some change after deposition. But we figure that the sands, probably largely aeolian source, come in, perhaps being windblown or water-deposited. There are some places where it looks like they are channelized, sort of running from east to west. But generally speaking, the correlations are much clearer running north to south.

So I think it's a combination of the aeolian

environment with some reworking by the marine currents or fluvial influence too.

Q. Okay, what ideal logging suite did you run to determine -- to look at the pay zone there?

A. Well, the previous operator had run the density neutron with a dual lateral log to try and define these as well as possible. The PE curve is a big help to identify the carbonates. For the most part, you want to leave the carbonates alone, look for the sands.

Our mud logs had also indicated good shows, particularly in some of these thin sands, which we believe have not been adequately exploited by previous wells. So we're encouraged by all of these factors, you might say.

Q. Okay. Do the tops of your Yates agree with what the Hobbs geologist in our district would pick?

A. What I confirmed with the Hobbs office was the top of the Queen to make sure that I was not getting into the underlying south Eunice zone.

Q. Okay.

A. I have not discussed top of Yates with him to a large extent, although we have been comparing this back to the cross-sections that NMOCD uses, as far as a basis in the area.

Q. Okay. The existing rules allow only one well per 160, but -- and when was that rule -- that was done 2001,

so that's not very long ago. Is there a reason why you think they stuck with 160 then and -- versus now, you're coming in, wanting a lot more wells?

A. I anticipate it might have been a matter of proration at the time. I've worked this area for about five years and have not gone back to the history to see why that was done this way.

Q. That's fine, I think it's probably they wanted to stay with a big area, and then exception into smaller --

MR. BROOKS: Mr. Stogner can give you a lot of worthwhile input on that subject.

THE WITNESS: I do have one clarification to add about a question you've asked earlier about some of the other oil wells shown particularly in the northeastern part of the section. There are going to be Grayburg wells operated by ChevronTexaco in the Arrowhead Grayburg unit.

Q. (By Examiner Jones) Deeper Grayburg.

A. A deeper horizon, which is off the bottom of these cross-sections.

Q. Okay. Then this area is right around where? Is it around Eunice?

A. Well, Jal, I guess. I'd need to --

Q. Jal?

A. -- find out how far we are -- how many miles we are. I think it states on some of our previous documents.

Q. And the carbonates are definitely not productive here?

A. What isn't?

Q. The carbonates? They're limestone --

A. In this area we have not seen the carbonates productive. As we move farther west, the Seven Rivers carbonates do develop porosity and will produce primarily oil. But in this updip part we do not think the carbonates are productive at all.

Q. Too tight?

A. Yes, primarily anhydritic and --

Q. Anhydritic.

A. -- plugged up. There's -- If there is any porosity developed, it's anhydrite plugged.

Q. Okay. And the sands, what do they have in them? Do they have a bunch of clays that give you trouble?

A. There is some clay. Primarily it's going to be the high potassium and uranium which is found in the area, which is typical for aeolian-type sands, that they're not going to look clean. So this is often an easy way to discriminate between the carbonates and the sands, strictly by the gamma-ray.

Q. Oh, you don't run a spectral gamma-ray on it?

A. From time to time we have, but usually there are no surprises in this area.

Q. And those old neutron logs you're talking about, were they cased hole?

A. Some of them were open-hole, but many of them are cased hole. And again, they're noncalibrated, so it's a matter of interpretation, trying to get porosity from them.

Q. Okay. When you drill these wells, do you use a mudlogger?

A. Yes, we want to -- we plan to use a mudlogger on each of the wells that will be drilled in the area. This is, again, a big help.

Q. Do you do any sidewall coring?

A. We may. We have set up some of these with a previous operator, anyhow, to do some sidewall coring, and wherever the mudlog or the electric logs are nondiagnostic, we may elect to run some sidewall cores.

Q. Okay. And you drill the wells deep enough to get your logging suite in. It's just 100 feet deeper than where you're going?

A. Yes, the triple combo will usually need about 100 feet of rathole.

Q. You still run a triple combo out there?

A. So something like that. It might be two runs, depending on the logging company that we employ --

Q. Okay.

A. -- but I'd like to try and get this in one run if

we can.

Q. Okay. Do you run a lubricator with your loggings when you --

A. I don't believe we've had any problem with pressure to want to run a lubricator, so we're sufficiently overbalanced to not need that in the past.

EXAMINER JONES: Okay, okay.

MR. BROOKS: Nothing further.

EXAMINER JONES: That's it, Mr. Pearcy, thanks very much --

THE WITNESS: All right, you're welcome, sir.

EXAMINER JONES: -- for your work.

MR. CARR: Mr. Jones, the property we're talking about is three and a half miles southwest of Eunice.

EXAMINER JONES: Pretty much below the bubble point down there.

MR. CARR: And at this time we'd call our engineering witness, Glenn Kemp, K-e-m-p.

GLENN KEMP,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. CARR:

Q. Would you state your name for the record, please?

A. My name is Glenn Kemp.

Q. Mr. Kemp, where do you reside?
A. I reside in Spring, Texas.
Q. By whom are you employed?
A. Mission Resources.
Q. And what is your position with Mission Resources?
A. I am asset manager of the Permian Basin.
Q. By training are you a petroleum engineer?
A. Yes, I am.
Q. Have you previously testified before this Division?
A. Not the OCD.
Q. Could you review for Mr. Jones your educational background?
A. I have a BS in petroleum engineering from Penn State and an 50 percent through an MS in petroleum engineering at University of Houston.
Q. When did you receive your degree from Penn State?
A. Back when I was a pup, 1981.
Q. And since 1981, would you just summarize your work experience?
A. Yes, I've worked for both majors and independents, all domestic, and many of those years throughout the Permian Basin. I started out with Tenneco for seven years and switched over to a company called IP Petroleum. I was their engineering manager for 10 years,

which we were very active in the Permian Basin, and then with various other independents. And for the last five months Mission.

Q. Are you familiar with the Application filed in this case on behalf of Mission Resources?

A. Yes, I am.

Q. Have you made an engineering study of the area that is the subject of this case?

A. Yes.

Q. Are you prepared to share that work with the Examiner?

A. Yes.

MR. CARR: We tender Mr. Kemp as an expert witness in petroleum engineering.

EXAMINER JONES: Mr. Kemp is qualified as an expert witness. Thank you.

Q. (By Mr. Carr) Before we get into the exhibits, Mr. Kemp, a little background. When did Mission acquire the property -- your property interest in this area?

A. We closed on the property on January 30th. The effective date was January 1st, 2004, and we took over operations February 1st, 2004.

Q. And these were properties previously operated by Raptor Resources?

A. That's correct.

Q. What caused Mission to become really interested in this particular area?

A. Mission previously had operations out in the Permian Basin, sold some properties, but we still -- about 50 percent of our reserves were still in the Permian Basin, outside-operated. They decided -- One of the strategies Mission has as far as acquiring properties is, looking for properties that are natural gas, low lifting costs and have some upside in this --

Q. Let's go to Mission Exhibit Number 6. Would you identify that exhibit and review it for Mr. Jones?

A. Yes, this is a base map of the northern area. Basically we -- when we purchased the interest out here, there's a northern area here, and then the next township down to the south there's a southern area. There's about 85 wellbores, 86 wellbores, up here in the northern area, and about twice that many down in the southern area.

Today we're addressing the northern area, and in specific, Section 11. Raptor, the previous operator, they took over operations in April of 1999. They were very active and very successful in their activity up here in the north. Each of the circles you see is the 21 completions that Raptor made in the Jalmat field. Four of them were new drills, and the rest of them were recompletes.

Q. Would you generally summarize Mission's planned

development program for 2004?

A. Yes. Throughout 2004 we plan to drill between two and three wells up here, new drills, and do between five and 10 recompletes.

Q. And what results are you hoping to obtain as a result of this development effort?

A. Well, we realize this field is pretty far down the line. We realize the discontinuous nature of all the sands. We realize that you're not going to get the same as you did wells that were 50, 60 years ago, but you are going to tap into incremental reserves, new reserves. We've done a study of all these wells, normalized the data, and I'll show that to you here in a second. But we're really expecting singles, not home runs. In specific, we're expecting about a 450-million-cubic-foot well.

Q. Let's go to Mission Exhibit Number 7, the table. Would you explain what this is?

A. Yeah, this is simply a table of the same wells that you see the dots on the map, and this is all the northern-area activity that Raptor performed. I've color-coded out there in the first production date column, you can see the vintage. But basically this just lists some pertinent data on each one of those wells as far as location, API number, and then if you get further off to the right you can see the actual cums on the wells through

February, '04, what the current rates are, and what the ultimate recovery that I'm projecting on each well is there, and with an average of 454 million cubic foot for those wells and 1000 barrels of oil.

Q. Let's now go from Exhibit 7 to Exhibit 8, the normalized type curve. I'd ask you to review that for Mr. Jones.

A. This normalized type curve I've created, it's the same 21 completions that are circled on the map, and they're on the table. Basically, I just took all that data. I didn't discount any wells, normalized every single one of them back to the same date, and what you see here is a result of that.

The top curve is the well count in black dots. The bottom curve is the gas rate in MCF a day, so it's your average gas rate for those wells. You'll notice about 44 months into the data you just -- your well count gets pretty low at that point. You can see a pretty dramatic drop as far as well count, going from eight down to five, and just your number of sample points get pretty low.

So really at that same point you can see a drop in the gas rate. I believe that the data gets kind of inconclusive, unreliable at that point, just simply because of the low number of sample points you have.

So what I've done is, done a best-fit through the

data, through the first 44 months of the data, and as a result you can see, in the right column off to the right, the initial rate that you come up with is 275 MCF a day, the initial decline rate is 42.5 percent, and the hyperbolic exponent is 2.94.

Q. Now, you've taken this information and you have worked that into your economic projection?

A. Exactly.

Q. That's what has been marked Mission Exhibit 9?

A. Yes.

Q. Would you review that now?

A. Mission Exhibit 9 is simply an economics table based on the type curve of the 21 completions. Off to the right of each one of the input data is where I got the data. So I've specified exactly where everything came from.

You'll see what -- our working interest in Section 11 is 83.8 percent. I have rounding here. I am sure the land department has it out to about 10 digits. But my revenue interest is 69 percent. Assumed production date is July 1st. I assume the drill date of just one month earlier than that.

Initial rate is 275 MCF a day. I didn't use any oil in the run. It was only come up with 1000 barrels, as far as the average oil. I just left it out. It wasn't

conservative, I guess.

Initial decline rate 43 percent. n of 2.94, as you saw off the type curve. The reserves of 450 million cubic feet, which is the average of the wells that Raptor worked on, the 21 wells. The gas stream from the wellhead, it goes to the Sid Richardson plant, and it's quite rich. We received -- average the last 18 months is 131.8 barrels per million, as far as NGL yield. We experienced a 65-percent shrinkage of that gas. The agreement we have with Sid is that they take 16.5 percent of the residue gas and the NGLs.

I simply ran this with a flat five-dollar gas price prior to differentials of -- taken out 43 cents, so it's actually 43 cents less than the five bucks, is what it's running at.

The oil price is $30 a barrel. There is no oil, however, in the economics.

The NGL price is -- has been running 64 percent of NYMEX, so 64 percent of the 30 bucks is $19.20.

OP cost has been running at $800 per well per month, that's what we used. Complete well cost, our drilling partner shows for -- on an AFE out here as $393,000.

As a result, the results are that a net present value at 10 percent is $445,000. Rate of return is 54

percent. We pay out in 29 months, and an ROI of 3.67.

Q. So these wells are economic?

A. These wells are very economic.

Q. And these are conservative estimates because you have not included oil?

A. Have not included oil. Another thing that I've made this conservative is, even though many of these wells have been producing for 50, 60 years, I forced a cutoff here of 20 years. I didn't let the case run beyond 20 years. So yeah, I'm -- gas price, of course, is running higher than that right now, but who knows what it's going to do tomorrow. But -- So I think it's conservative.

Q. Let's now take a look at the wells offsetting the proposed well location and go to your Exhibit 10, and I'd ask you to review those tables for the Examiner.

A. Okay, the first table is the wells offsetting our location for Well Number 82. On this table you can see that there are four wells that either produced out of the Yates-Seven Rivers formation or attempted production out of the Yates-Seven Rivers formation.

I'll get my worst one out of the way first. The State Account 2 Number 80 was a new drill that Raptor did in August of 2001. This well didn't work. It is the only well/recompletion in the northern area that did not produce in commercial quantities, that Raptor attempted.

State Account 2 Number 18 is an older well that was completed in September, 1953. It didn't produce anything, but it wasn't given a whole lot of chance, as far as what I can tell. It was only shot with 650 quarts of nitro, and it was never hydraulically frac'd.

The State Account 2 Number 62 well -- Many of these wells showed up on the cross-sections that Dave showed you. This is an outstanding well, cum'd 2.9 B's, ultimate 3.1.

State Account 2 Number 73 is a well that was a pre-Raptor-era well that was done December, of 1987. Frac'd it with only 87,000 pounds. Mind you, the Yates-Seven Rivers is about 600 foot thick, and if you're going to vertically communicate those sands you need a pretty good-size frac. We don't feel like this was a very sufficient frac, and as a result it was a poor well.

Q. When you look at this, is it fair to conclude that the wells offsetting the 40-acre tract on which the Number 82 well is proposed are not -- you cannot conclude they're effectively draining the reserves from that 40 acres; is that fair to say?

A. That's fair to say.

Q. All right, let's go to the second page of this exhibit, the offsets to the proposed Well Number 83.

A. Same type of table as you saw with the 82. This

is just the offsetting wells, the 83. On this table there are six wells which either produced out of the Yates-Seven Rivers or attempted production out of them, out of the Yates-Seven Rivers.

The first one is 2-62, which previously mentioned on the table before this, outstanding well, going to make 3.1 B's.

Second well is the 2-75. This was a recomplete done in -- a fairly recent recomplete, November of 2000. They frac'd it with 190,000 pounds. More on the order of what we're looking at. We're looking at frac with about -- with 250,000 to 300,000 pounds, is what we're looking at. And they recovered something similar to what we're expecting. They're going to get about 350 million cubic feet out of that well.

We would love to have a well like the next one down, the 2-36, which is going to make 11.6 B's. We're not expecting that.

The McDonald State Number 40, which was drilled by BP -- recompleted by BP in June of 2001, so that's a 40-acre well offsetting us that BP did -- once again we feel like the size frac was too small, that 132,000 pounds, and Dave's cross-section showed that the sands are poorly developed in that well's location. Put those two together and you have a poor well, 50 million cubic feet.

The State Account -- or, I'm sorry, the McDonald Number 25 -- was actually a twin well to the next one down, the McDonald Number 11. McDonald Number 11 had only been frac'd with 91,000 pounds and was producing at the rate of 60 to 70 MCF a day when they decided it appears -- I'm getting ahead, but it appears that they decided to twin it for I don't know what reason, but they decided to twin it, and they frac'd it with just 45,000 pounds -- 600-foot interval, 45,000 pounds -- and they tested it at a rate of 60 to 70 MCF a day, so they had two wells offsetting each other that made -- or twinned each other, were making the same. They plugged that one out, continued to produce and still continue to produce the 11, and it's going to be a very good well, 4.1 B's.

Q. All right, let's look at the 40-acre units offsetting the Number 84, the last page of this exhibit.

A. Number 84 is a similar table to the last two tables you saw. Some of the wells are going to be the same. Basically on this table, you have four Yates-Seven Rivers completions.

State Account 2 Number 62, we've already touched on that twice. That's a 3.1-BCF well.

State Account 2 Number 73, we talked about that also in the first table. That's 600-foot interval but frac'd with just 87,000 pounds. Poor well, 37 million

cubic feet.

McDonald Number 31, a decent-size frac on that one -- it was in July of 1988 -- about a 180,000-pound frac and about right on the money of what we're hoping for, 430 million cubic feet there.

McDonald State Number 40, we talked about this one on Table 2. Poorly developed sands, small frac job, 50-million-cubic-foot well.

Q. When we look at this data from the offsetting 40-acre tracts to each of the proposed wells, is it fair to conclude that existing development patterns are not accessing the recoverable reserves in the Jalmat in this area?

A. That's correct.

Q. Do you have an idea or a theory or opinion as to why this might be?

A. Basically I think it's very visual and very easy to see with the cross-sections because it's such discontinuous sands coming and going. It's a combination of that, and if the frac jobs were so small that you weren't able to vertically connect everything, you put those two things together and you've got reserves left in the ground that you're not going to get from the offset wells.

Q. And when we look at this, are we talking about

rate acceleration or actually recovering additional Jalmat reserves?

A. These are additional reserves.

Q. If these wells are not drilled, these reserves will be left in the ground and wasted; is that fair to say?

A. That's fair, yes.

Q. In your opinion, will approval of this Application and the drilling of each of these three wells in Section 11 be in the best interest of conservation, the prevention of waste and the protection of correlative rights?

A. Yes.

Q. Were Exhibits 6 through 10 prepared by you?

A. Yes.

MR. CARR: May it please the Examiner, at this time we move the admission into evidence of Mission Exhibits 6 through 10.

EXAMINER JONES: Exhibits 6 through 10 will be admitted into evidence.

MR. CARR: That concludes my direct examination of Mr. Kemp.

EXAMINATION

BY EXAMINER JONES:

Q. Okay, Mr. Kemp, if someone was drilling these wells in the section to the south and in 14, the same

distance away from you, would you object to them?

A. No, sir. BP drilled a well, the Number 40 well, recently, and it's pretty extensive throughout the field. That's what the operators are doing, drilling these add-on 40s.

Q. Okay. So you would be convinced they wouldn't be draining you?

A. No. No, if --

Q. Even if they were, you would be able to come in and --

A. Not as long as it was a normal location --

Q. Normal location --

A. -- not snugged up against us or --

Q. So you would only object, mainly, if it was a nonstandard location?

A. Right, if they tried to frac it with 2 million pounds of sand, we might have a problem with that.

Q. Oh? Okay. So pretty much the whole field here is leased up --

A. Right.

Q. -- and so normally people -- companies are in competition with each other. Do you consider yourself in competition with the other operators out here?

A. Well, we hope to be good neighbors, and we see it in the best interest of everybody to recover the reserves

out of this field that should be recovered, and 40-acre development we see as necessary on our leases. And I haven't studied the offset leases, but I would imagine that they're under the same situation.

Q. Okay, is there any kind of cooperative discussions going on in this field to share information about frac jobs or --

A. We have started dialogue. Do you want to expand on that, Bill?

MR. CARR: Well, we have received some correspondence from Mr. Hartman offering to share some data. We're interested in doing that.

I would also point out that while we believe that 40-acre development is appropriate -- and you correct me if I'm getting ahead of myself -- in terms of objections to applications, they have to be reviewed on an application-by-application basis.

But the evidence in this case is a follow-up on a case that I was involved in a year or two ago on this section and other cases in the reservoir, and it really does appear that in large areas, at least the reservoir, 40-acre development patterns are necessary if you're going to access the reserves that are in this particular formation.

And the question becomes how you can effectively

do that without, you know, impairing the rights of the offsetting operator. It's one thing to be able to offset, but that assumes reasonable production practice as you go in.

EXAMINER JONES: Yeah. This is all state lands, I notice, or at least --

MR. CARR: Uh-huh.

EXAMINER JONES: -- this section is definitely state minerals.

But I would think any kind of cooperative talks or discussions, ideas, hearing, that would be in the interests of conservation and the prevention of waste, so to speak, and -- maybe not correlative rights, but you'd have to be careful about that. But I would say that would be a good idea.

And as far as specific questions here on your frac jobs, you're going to use CO_2?

A. Yes, we're using about a 65-quality foam job, and that's -- you know, with the low perm, some of these stringers -- obviously some of the higher-perm stringers have seen some depletion. So load-water capillary pressure problems, as far as getting the load water back, is obviously something we're concerned about. We want to keep as much water off the formation as possible, relative perm to gas as high as possible.

Q. Okay, can you talk about your perforation scheme and a little bit more about your frac job?

A. Right, we plan on doing limited-entry perforations. Right now the game plan is 32 holes, as far as -- if we're frac'ing down casing. I'm sure that will be rate-dependent on the frac job. It may vary from 29 to 34 holes, but somewhere around there. And if we can, we'll frac down casing. If it's old casing, we'll have to frac down a work string too.

Q. Okay. Do you use a dead string? Do you use pressure monitoring at the bottom while you're frac'ing with these CO_2 fracs? Any kind of memory gauges or anything in the bottom?

A. We haven't planned that, no.

Q. Okay. A big pad before you get started?

A. Pretty good-size pad. I can't tell you the exact footage --

Q. That's all right.

A. -- but I know it's a pretty good-size pad.

Q. And what pounds per gallon are you getting up to?

A. We're getting up to six pounds per gallon.

Q. That's pretty high.

A. Yeah, it's pretty high, but we're taking -- we have it planned such that it's about three times the wellbore volume, so we're seeing the sand hit the formation

on each stage and getting a good look at the multi-plots and whatever and knowing that it's taking the sand okay, before we're staging up the next stage.

Q. Okay. It sounds like you've got the frac-job ideas, that a certain size frac job is needed out there. These wells that -- now that you operate, that are in this Section 11, and they haven't been frac'd with those, are you going to go back and frac them again?

A. That's one of the reasons we really love this, as far as an acquisition. I mean, we've done a lot of work, we've had a team of guys doing a lot of work, and putting together cross-sections, utility charts, updating the wellbore diagrams, we see a lot of opportunity as far as Seven Rivers not taken, Yates frac'd with 20,000 pounds, natural completions that were never frac'd, we see a lot of opportunity right here?

Q. Okay. What about wellbore cleanouts? Do you have a lot of sand coming back?

A. There are some of that, yeah, it's something that we monitor. It tears up the pumps every once in a while, but it's not a problem that we can't handle.

Q. These are all pumping-unit-produced?

A. Right, keeping the head off.

Q. Okay. It looks like the NGL's are a big source of your income out here.

A. We will definitely take that, yes.

Q. Now on this normalized plot, the wells that went into that, you told us already but can you tell us again: Are these just the recent recompletions or drills?

A. Yeah, it's the same as what you saw on the base map --

Q. Okay.

A. -- it's the same as the table, it's -- everything's the same. No wells have dropped out of it, there is nothing skewed about the data. I just took every single one of them, normalized them back, took the average and plotted it out.

Q. Okay, now also -- Did the ultimate on the curve here match your average? I notice your average looks kind of like it does. Did you --

A. Yes.

Q. -- force that?

A. Well --

Q. It looks reasonable.

A. Yeah, it came out very close, actually. The run on this was 450 million cubic feet, and we're at -- but I limited this to 20 years too. And I limited the remaining reserves on the table also to 20 more years, which, if you look at some of these wells that have produced for 50, 60 years, maybe that's conservative, okay, with some of the

newer completions, saying that they're only going to go another 20 years.

So yes, it's a reasonable match, but I think I've constrained it some also.

Q. Another thing, did you actually plot all of the existing production historically and then look at the drilling packages that have happened to see if they changed the slope on that curve?

A. Yes, we have, actually. What we did for the northern area was, we made a -- just a production plot of the wells in the northern area, and then looked at how things were declining on its hyperbolic from that point. And then after the Raptor program you can see a real jump up in the production, and there's a definite wedge that's incremental reserves, not rate acceleration.

Q. Okay. Now, did you match your volumetrics with this? Are you working on that someday?

A. I feel like the volumetric error bars on this thing are way too wide to --

Q. Yeah.

A. What is h net? You know, I can make that fit to the data, but I don't put a whole lot of faith in volumetrics here.

Q. Okay. What do you think your reservoir pressure is out here right now?

A. It varies. I think in the tighter sands and the sands that haven't been communicated you're going to be close to virgin pressure, which is 1400 pounds. But I think, you know, many of the sands are 100 to 200 pounds, the higher-perm sands. So -- And once you frac all that together, you know, you're going to get a lot of crossflow going on and equalization of fractures.

So what is the actual bottomhole pressure? Well, it's going to vary very much, sand to sand and what's been communicated in the past with the frac.

Q. Your nodal analysis, it doesn't show that that limited-entry frac, perforating, is really hurting you at the wellbore?

A. I'm sorry?

Q. The nodal analysis. You did a nodal analysis for the reservoir onto the separator.

A. That's correct. We have not done that, but what we have done is studying how to efficiently frac this, and shooting four shots per foot or whatever, we can't guarantee that over a 600-foot interval, that we're going to effectively frac that thing. And we feel like we've got to get all these sands open and communicated, and we feel like that's the name of the game.

Q. Okay, that sounds like you've done a lot of work, and I appreciate you showing me these economics, even

generic economics here. I think that really helps the presentation.

Mr. Brooks?

Thanks very much.

THE WITNESS: Thank you.

MR. CARR: That concludes Mission's presentation in this case.

EXAMINER JONES: Okay, with that we'll take Case 13,252 under advisement.

(Thereupon, these proceedings were concluded at 9:25 a.m.)

* * *

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

_____, Examiner
Oil Conservation Division

CERTIFICATE OF REPORTER

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

I, Steven T. Brenner, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I transcribed my notes; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL May 3rd, 2004.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 16th, 2006