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:	CASE NO. 11,844
APPLICATION OF CHESAPEAKE OPERATING, INC., FOR AN UNORTHODOX OIL WELL LOCATION, LEA COUNTY, NEW MEXICO	ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

September 4th, 1997

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH, Hearing Examiner, on Thursday, September 4th, 1997, at the New Mexico Energy, Minerals and Natural Resources Department, Porter Hall, 2040 South Pacheco, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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I N D E X

September 4th, 1997
Examiner Hearing
CASE NO. 11,844

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E X H I B I T S

Applicant's	Identified	Admitted
Exhibit 1	7	10
Exhibit 2	8	10
Exhibit 3	8	10
Exhibit 4	15	30
Exhibit 5	17	30
Exhibit 6	28	30

* * *

Marathon	Identified	Admitted
Exhibit 1	38	43
Exhibit 2	41	43

* * *

A P P E A R A N C E S

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FOR MARATHON OIL COMPANY and
NEARBURG EXPLORATION COMPANY, L.L.C.:

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By: WILLIAM F. CARR

* * *

WHEREUPON, the following proceedings were had at 1:05 p.m.:

EXAMINER CATANACH: Okay, at this time let me call Case 11,844.

MR. CARROLL: Application of Chesapeake Operating, Inc., for an unorthodox oil well location, Lea County, New Mexico.

EXAMINER CATANACH: Call for appearances.

MR. BRUCE: Mr. Examiner, Jim Bruce from Santa Fe, representing the Applicant.

I have two witnesses to be sworn.

MR. CARR: May it please the Examiner, my name is William F. Carr with the Santa Fe law firm Campbell, Carr, Berge and Sheridan.

We represent Marathon Oil Company in this matter, and I have one witness.

I would also like to enter our appearance for Nearburg Exploration Company, L.L.C.

EXAMINER CATANACH: Okay, can I get all the witnesses to please stand and be sworn in?

(Thereupon, the witnesses were sworn.)

MIKE HAZLIP,

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

DIRECT EXAMINATION

BY MR. BRUCE:

Q. Will you please state your name for the record?

A. Mike Hazlip.

Q. Who do you work for and in what capacity?

A. Chesapeake Operating, Inc. I'm their landman for the Permian Basin.

Q. Have you previously testified before the Division?

A. Yes, sir.

Q. As a landman?

A. Yes.

Q. And were your credentials as a landman, as an expert petroleum landman, accepted as a matter of record?

A. Yes, they were.

Q. And are you familiar with the land matters involved in this Application?

A. Yes, I am.

MR. BRUCE: Mr. Examiner, I would tender Mr. Hazlip as an expert petroleum landman.

EXAMINER CATANACH: He is so qualified.

Could you spell your last name for me?

THE WITNESS: H-a-z-l-i-p.

EXAMINER CATANACH: Thank you.

Q. (By Mr. Bruce) Briefly, Mr. Hazlip, what does Chesapeake seek in this case?

A. We seek approval of an unorthodox location for our Gandy 1 "19" well location, 2523 feet from the north line and 2370 feet from the east line of Section 19, Township 16 South, Range 36 East.

Q. This will be a Strawn test?

A. Yes, sir.

Q. Could you identify Exhibit 1 for the Examiner?

A. Exhibit 1 is a land plat outlining the 40-acre well unit for the Gandy 1 "19" well. It also shows Chesapeake's acreage position and who the offset working interest owners are.

Q. One thing, Nearburg is an interest owner in this proposed well, is it not?

A. Yes, they are.

Q. Who are the interest owners -- or excuse me, the offset interest owners?

A. In the west half of Section 19, Chesapeake owns over a 90-percent interest. The balance is held by Enserch and Charles Read. To the south, in the north half of the southeast quarter, Section 19, Marathon owns 100-percent interest. And between Chesapeake and Nearburg we own 100-

percent of the northeast quarter of Section 19.

Q. Were the offset operators notified of this hearing?

A. Yes, they were.

Q. And is Exhibit 2 a copy of Mr. Kellahin's affidavit regarding notice?

A. Yes, sir, it is.

Q. Mr. Kellahin is the attorney who originally filed this Application, was he not?

A. Yes.

Q. Besides the notice letter to Marathon and the other offsets, have you had any further contact with them?

A. Yes, I have. I sent a letter to Marathon on August 29th, 1997, after finding out that they were going to oppose us on this.

Q. So you sent them the letter marked Exhibit 3?

A. Yes.

Q. And what did you offer in that letter again, I'm sorry?

A. We offered Marathon a mirror location and a voluntary 25-percent production penalty on our unorthodox well.

Q. And they did not accept that?

A. No, they did not.

Q. What did they want?

A. There was no clear -- There were several issues discussed.

They wanted seismic data from us and wanted to participate with us in this area.

They really -- As far as I can recall, there was no specific --

Q. No firm offer?

A. -- offer of what it would take to dismiss this case.

Q. Now, you mentioned seismic. Chesapeake has substantial seismic data in this area, does it not?

A. Yes, we do.

Q. And that's very valuable?

A. Yes, it is.

Q. What is the depth bracket allowable for this well?

A. 365 barrels of oil per day.

Q. Now, the penalty you offered, 25 percent, in your opinion would that allow Chesapeake a reasonable chance of drilling a commercial well?

A. Yes, it would.

Q. What is the cost of a well, a Strawn well, in this area?

A. Dryhole costs are estimated to be $552,000, and completed well costs are $895,000.

Q. What is the depth, approximate depth, of this well?

A. Approximately 11,800 feet.

Q. Now, in this area has Chesapeake been active recently in drilling Strawn wells?

A. Yes, we've drilled numerous wells. We've drilled approximately eight wells in this immediate proximity.

Q. In the area of 16 South, 36 East --

A. Yes.

Q. -- roughly?

A. Uh-huh.

Q. In what time frame is that?

A. Over the last year, year and a half.

Q. Were Exhibits 1 through 3 prepared by you or under your direction or compiled from company records?

A. Yes, sir, they were.

Q. And in your opinion, is the granting of Chesapeake's Application in the interests of conservation and the prevention of waste?

A. Yes, sir, it is.

MR. BRUCE: Mr. Examiner, I'd move the admission of Chesapeake Exhibits 1 through 3.

EXAMINER CATANACH: Exhibits 1 through 3 will be admitted as evidence.

Mr. Carr?

CROSS-EXAMINATION

BY MR. CARR:

Q. Mr. Hazlip, when you proposed a 25-percent penalty to Marathon, against what would that penalty apply? The depth-bracket allowable?

A. Yes, sir.

Q. In December of last year, 1996, did Chesapeake not contact Marathon concerning the development of this area?

A. It probably was in December, yes, sir, we did contact Marathon.

Q. And at that time there were discussions concerning the development of a working interest unit in the area; is that not correct?

A. Yes, sir.

Q. Has Chesapeake followed up on that proposal with Marathon since December?

A. We offered -- The working interest unit that we proposed did not include any acreage inside the northeast quarter of Section 19. We were discussing the southwest quarter of Section 19 and the southeast quarter of Section 19 on preliminary information we had from out data.

Q. Has Marathon not offered to purchase seismic from Chesapeake in this area?

A. Yes, in our discussion -- they called me -- I had

a discussion with them after they called me in response to my letter a few days ago and offered to purchase the seismic from us.

Q. Has any decision been made by Chesapeake on whether or not they're willing to sell the seismic to Marathon?

A. As far as I know, our company does not want to sell the data at this time. That doesn't preclude us from selling it to them at some point in time.

MR. CARR: That's all I have, thank you.

EXAMINATION

BY EXAMINER CATANACH:

Q. Just a couple. Again, in the west half of Section 19, Chesapeake, you said, owned --

A. -- over 90 percent.

Q. Ninety percent. And the other two interest owners are Enserch and --

A. -- Charles Read.

Q. Charles Read. Do you know how that's split up between those two parties?

A. I believe that Charles Read has around 3 percent and Enserch 6 percent, something like that.

Q. Okay, and the northeast quarter of Section 19, that's owned by Chesapeake and Nearburg?

A. Yes, sir.

Q. Is that whole quarter section in the same percentage?

A. No, sir, there's a little larger percentage in the west half of the -- In the west half of the northeast quarter, we own approximately 49 percent and Nearburg approximately 51 percent; and in the east half of the northeast quarter Chesapeake owns approximately 45, 46 percent, and Nearburg the balance.

Q. Okay. And in the southwest quarter, the acreage shown in white is all Marathon acreage?

A. Yes, sir.

Q. And that 40-acre tract in that quarter section is owned by Chesapeake and Nearburg?

A. Yes.

Q. Is that a producing well in the west half of Section 19, or is that --

A. In the west half of Section 19?

Q. Right.

A. No, sir.

Q. Okay. There are no wells in this section that are producing?

A. Not to my knowledge.

Q. Okay. And Nearburg is participating with you in the drilling of this well?

A. They haven't formally responded to our proposal

letter. They have -- I had a discussion with them the other day. They're proposed a well to us in the northeast quarter of the northeast quarter.

We anticipate entering into two JOAs, one where we would operate the west half of the northeast quarter of Section 19, and one where they would operate the east half of the northeast quarter of Section 19. And they've indicated to me that they would participate in this well. But again, I have not gotten any formal response from them on that.

EXAMINER CATANACH: Okay. I have nothing further.

ROBERT A. HEFNER, IV,

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

DIRECT EXAMINATION

BY MR. BRUCE:

Q. Would you please state your name and city of residence for the record?

A. My name is Robert Hefner, and I reside in Oklahoma City, Oklahoma.

Q. Who do you work for?

A. I work for Chesapeake Operating, Inc., as a geologist for the Permian Basin.

Q. Have you previously testified before the Division

as a petroleum geologist?

A. I have.

Q. And were your credentials as an expert geologist accepted as a matter of record?

A. They were.

Q. And are you familiar with the geology involved in this Application we're here for today?

A. Yes, sir, I am.

Q. And your area of responsibility includes this part of southeast New Mexico?

A. Yes.

MR. BRUCE: Mr. Examiner, I would tender Mr. Hefner as an expert petroleum geologist.

EXAMINER CATANACH: He is so qualified.

Q. (By Mr. Bruce) Mr. Hefner, let's move on to your Exhibit 4. Would you identify that for the Examiner and discuss it a little bit?

A. Yes, Exhibit 4 is a structure map generated on top of the Strawn formation. It was generated utilizing both a 3-D seismic survey that we have in this area that covers all of Section 19 and also includes the subsurface well control, and was based on a seismic survey that was acquired and processed utilizing 110-foot bins.

And you'll note in the referenced unit, the southwest of the northeast where we're wanting to drill the

Gandy well, a structural anomaly that sits up approximately 50 feet against regional structure and is small and oriented in an east-west direction across the northern portion of that lease line.

Q. Based upon your interpretation, is much if any of this particular Strawn porosity pod on Marathon acreage?

A. According to our interpretation, most if not all of the Strawn anomaly that we're going to drill with this well lays north of the Marathon acreage and is contained within the subject unit.

The interpretation is based on a fairly tight grid of seismic data, and although I know you'd probably love to see what the seismic looks like across that, I can testify under oath here today that it's restricted to about three traces total, which would be, on the bin size, 330 feet. We're drilling this well in between, on that middle trace, so there's not a lot of room for error on either side.

Q. Okay.

A. And we have chosen not to display the seismic because we feel that's a proprietary methodology that we've been using in the area.

Q. Now, let's get -- The Examiner asked one question of Mr. Hazlip. Are there any Strawn producing wells in Section 19?

A. No, there are not.

Q. Let's move on to your Exhibit 5. Could you identify that for the Examiner?

A. Yes, Exhibit 5 is a stratigraphic cross-section that has been hung on the base of the Strawn. It ties in to two wells, both to the north and to the south, both of which were dry in the Strawn.

The well to the northwest of the proposed location, that was drilled by Spectrum in 1986, called the Jackson, a completion attempt was made in that well. It pumped approximately 46 barrels and 44 barrels of water and ended up being noncommercial and plugged.

And you can see on the stratigraphic cross-section that the algal mound development that's colored in yellow, which gives reservoir-quality rock, is at the base of the Strawn.

The well to the southeast is a well that was drilled by Hanks in 1983. There was a thin interval of porosity or algal mound development in that overall Strawn, although it shows to be tight and was not tested, and that well was completed in the Wolfcamp.

At the proposed location of the Gandy you'll see that the interpretation reflects the development of algal mound at the top of the Strawn, as opposed to down within the Strawn. And it also coincides with the maximum

structural attitude, which is reflected on the structure map as well.

And so the proposed location is a place where both maximum development of algal mound at the top of the Strawn coincides with structural attitude at the top of the Strawn as well, at the proposed location.

Q. And based on your experience in the area, is the best porosity usually in the top of the gross Strawn interval?

A. Yeah, we've drilled about eight wells in the area, and we've found it to be very critical to find the algal mound development at the top of the Strawn rather than down at the base.

We've got two wells that we've drilled over in -- well, actually three wells we've drilled over in Section 20. The first one we drilled was called the Ruth. That was in the northeast of the northwest quarter of 20. That well ended up making quite a bit of water, and so water is a risk in this area also.

And then we also drilled the Patty, which today is producing water-free, although there's a water-transition zone in there.

And there's been a few wells where early on in our program out here we were a little bit casual in being very precise in locating the wellbores and have actually

missed the reservoir by not giving that type of attention to detail. And as a matter of fact, one that was drilled, operated by Yates, in the northeast of 20, is an example of that happening.

Q. Well, what about -- Based on what you've said, what about moving to the north somewhat? You know, 50, 100, 150 feet. How could that affect this particular well?

A. We -- our seismic indicates that the anomaly that we are interpreting here is only three traces, and so a maximum of 330 feet, and -- in a dip direction. So we just have to locate the wellbore in the middle of it to give us the highest probability of attempting to find both porosity at the top and the best structural attitude.

Q. So being off by 100 feet, even 50 feet -- you might say there's a fine line between success and disaster in these wells?

A. Yes, there is. We've experienced that already in two wells that we've drilled by not paying attention to that kind of detail.

Q. Based on what you've just testified, in your opinion should there be a penalty on Chesapeake's proposed well?

A. No, I don't there should be a penalty at all, because the entire anomaly lays off of the Marathon acreage. And we offered a penalty just in case our

interpretation is wrong, but we have confidence that it's not. And they rejected that penalty as well as a mirror offset, so --

Q. In your estimation, the reservoir is quite small in areal extent?

A. It is very small, and if we're not able to locate this based on an unorthodox location without a severe penalty, I don't know if it would be drilled, because of its size.

Q. And Chesapeake is absorbing all the risk in drilling this well, is it not?

A. Yes, sir.

Q. Mr. Hefner, in your opinion is the granting of Chesapeake's Application in the interests of conservation, the prevention of waste and the protection of correlative rights?

A. Yes, it is.

Q. And were Exhibits 4 and 5 prepared by you or under your direction?

A. Yes, they were.

MR. BRUCE: Mr. Examiner, I'd move the admission of Chesapeake Exhibits 4 and 5.

MR. CARR: Mr. Examiner, may I voir dire the witness on Exhibit 4?

EXAMINER CATANACH: I'm sorry, Mr. Carr?

MR. CARR: May I examine the witness on Exhibit Number 4 before it is admitted?

EXAMINER CATANACH: Yes.

VOIR DIRE EXAMINATION

BY MR. CARR:

Q. Mr. Hefner, could you take Exhibit 4 out, please? Do you have it in front of you?

A. Yes, I do.

Q. If I understand your testimony, this your interpretation of the Strawn structure in the subject area; is that right?

A. That's right.

Q. And what you have depicted on this exhibit is a small Strawn pod in the southwest of the northeast of Section 19; is that correct?

A. That is correct.

Q. Has -- It contains approximately what? Ten acres? Something in that neighborhood?

A. Within that structural closure, probably.

Q. And you have -- As you have drawn this or mapped this pod, you have it in sort of an east-west orientation, north of the Marathon tract; is that correct?

A. That is correct.

Q. I believe you testified that this map was prepared from well control and seismic information?

A. That is correct.

Q. If we look at the well control information, we have information on the Spectrum Jackson well north and west of the proposed location, do we not?

A. Yes.

Q. Anything from that well, or data on that well, that would tell you the size of the pod you're looking at?

A. No, what we're -- Well, it would, it would limit -- it would be a northern limit, because in that well there was no development of reservoir --

Q. It shows there's porosity, does it not, toward the proposed location? Doesn't it --

A. The Spectrum well does have some porosity at the base of the Strawn.

Q. Is there anything there, though, that would tell you that this is a 10-acre pod or a 20-acre pod?

A. The well control?

Q. Yes.

A. No.

Q. It wouldn't tell you whether the pod was exactly where you're showing it or 300 feet south of there, would it?

A. The well control would not.

Q. And the same would apply to the data you get from the Hanks Ruth Number 1 in Section 20; isn't that right?

A. That is correct.

Q. And so we are really looking at a map you have prepared from seismic work alone; isn't that right?

A. That is true.

Q. And you've elected not to show us that seismic work?

A. That is correct.

Q. And you're asking us, in essence, to trust your interpretation based on what you see looking at the seismic data?

A. That is correct, I'm --

Q. This is your interpretation?

A. -- under oath, so -- Yes, sir.

Q. Have you presented any evidence in any of your exhibits that you can point to that would confirm the size of this pod, other than just your telling us this is your interpretation?

A. I have not presented anything that tells the size of the pod, no.

Q. And you're not intending to show any of your seismic information here today?

A. No.

MR. CARR: Mr. Examiner, I object to the admission of Exhibit Number 4. We are not in a position to cross-examine this witness as to the location of the pod.

He's placed a 10-acre pod immediately north of our tract and oriented this pod in an east-west direction.

We recognize that there are reasons you don't present seismic. But when you are locating 117 feet from your offset, you have to show something.

And for that reason we object to the admission of Exhibit 4, because there has been no proper foundation laid, there is nothing we can look to to support this interpretation or to cross-examine. And it is the only evidence presented in support of this unorthodox location, absent the penalty, and we object to its admission.

EXAMINER CATANACH: Any response, Mr. Bruce?

MR. BRUCE: Mr. Examiner, he's qualified as an expert geologist and he's testified that this was based on his interpretation of the seismic. I don't see any requirement that he submit the backup seismic. This is often done at hearings before the Commission, and I think this interpretation of his, which he has based on his own expert geologic background, is completely admissible.

MR. CARR: He can give his opinion, but I'm objecting to an exhibit which we can't cross-examine him on. He says, I've seen the data, you have not, and this is how it is. And that denies us the right to cross-examine and it violates our rights in this hearing.

THE WITNESS: Mr. Examiner, could I make a

statement, just on the interpretation?

EXAMINER CATANACH: Yeah.

THE WITNESS: This play out here that we're involved in, this project, we've risked quite a bit of money in seismic and acreage in the whole area, and the methodology that we're employing to utilize this tool out here, we feel, is proprietary to Chesapeake.

It is a stratigraphic play, it's not a structural play. So there's certain tools and methods that we use that we'd rather not share with a competitor to give him that same advantage that we now have, without doing that.

It's obvious from the seismic, you can see where the Strawn thickens and thins, as depicted by the structural cross-section -- stratigraphic cross-section. That is obvious in those traces. I've put on testimony that that anomaly is only three traces wide. That is located there to where it is on the map, and I am under oath.

Thank you.

MR. CARR: Mr. Examiner, the question is. They may have an investment here, so does Marathon. But the question is whether or not you can get an approval and see no penalty when you're 117 feet off of your neighbor's property and just say "trust me". They've got to show something.

And this exhibit is the basis for their case, and they have presented nothing that supports either the size of the pod, or the location of the pod, or the shape of the pod, or the fact that it doesn't extend under Marathon's acreage. And having failed to do that, they haven't proved their case. And this exhibit is inadmissible unless they present something to support the interpretation that we can evaluate.

I'm not saying that they're telling us a lie. I'm saying we have a right to know what they base this on.

MR. BRUCE: Mr. Examiner, I mean, we've offered them a mirror offset, same deal. They did not subpoena the data.

EXAMINATION

BY MR. CARROLL:

Q. Mr. Hefner, you can't limit the raw data just to this 40 acres or --

A. The problem is that it displays the methodology that we use, and --

Q. In what?

A. In interpreting the stratigraphic --

Q. I'm not talking about the interpretation; I'm talking about the raw data.

A. But to satisfy Mr. Carr, he's wanting to see it on Marathon's acreage, I think.

MR. CARR: I'm wanting to see what they base this location on and what they use to say they have an east-west pod that nicely avoids the Marathon tract. That's all.

EXAMINER CATANACH: Well, Mr. Bruce, I tend to agree with Mr. Carr on this. I mean, there's not a whole lot of information that we can look, and --

THE WITNESS: Could I just show one line rather than several? I will agree to do that if we will agree that --

MR. CARROLL: You can begin with one line.

THE WITNESS: -- this would be representative.

MR. CARROLL: And Jim, you're asking for no penalty?

MR. BRUCE: Well, we've made two offers. We said no penalty or a reasonable penalty. It's my understanding from Mr. Carr's exhibits that they're going to ask for 65-, 70-percent penalty.

MR. CARROLL: Based upon -- ?

MR. BRUCE: Footage.

MR. CARR: That's right, that's what we're going to ask.

EXAMINER CATANACH: And Mr. Carr, when he brings in this seismic line what are you going to be able to do with it?

MR. CARR: We're going to take a look at and the

we'll tell you. I can't tell you without seeing it. And it may or not shed light on this. I don't know.

MR. CARROLL: Mr. Carr, your witness is qualified to --

MR. CARR: -- review seismic information, yes, sir.

MR. CARROLL: Okay.

MR. CARR: I gather from that you thought I might not be.

DIRECT EXAMINATION (Continued)

BY MR. BRUCE:

Q. Mr. Hefner, everybody's been handed a sheet of paper. Could you identify that for the Examiner?

A. Yes, this is a cross line, a vertical seismic section out of a 3-D volume that is oriented north-south through the proposed location.

Q. What does it show?

A. Okay, you'll note at the top a little -- a small circle, which is where the actual proposed well is located. And every one of those little marks along the top is a trace.

And as you come down along that section, you can see what is annotated in blue, being the top of the Strawn, and annotated at the bottom in green is the base of the Strawn, or the Atoka shale.

You can see as you go away in both the north and south direction that that interval thins and is represented by an area that's colored in black. That is what, in the area, is nonreservoir rock. Where that top of the Strawn builds upward, as you approach the proposed location, is reflected in the structure map that you have before you as Exhibit 4, and also in the stratigraphic cross-section, as Exhibit 5. And the shape of that wavelet, where it thickens, indicates that the porosity has developed at the top.

And if you go one trace to either side of that proposed wellbore, your traces begin to collapse and go back to regional, so that there is no --

Q. There's little room for error?

A. Little room for error, and it is the basis on which the structure map was generated.

Q. And what you show here, your interpretation would be identical for any other seismic line run in this area?

A. Exactly.

MR. BRUCE: I pass the witness.

MR. CARR: Are you going to move the admission? I have no objection.

MR. BRUCE: Move the admission. I haven't marked it as -- I didn't mark it as an exhibit.

MR. CARR: It's Exhibit 6, I think.

EXAMINER CATANACH: Marked as Exhibit 6.

Exhibit Number 6 will be admitted as evidence.

Mr. Carr?

MR. CARR: Am I cross-examination now?

EXAMINER CATANACH: Pardon me?

MR. CARR: Was 5 admitted? I withdraw the objection to 5.

EXAMINER CATANACH: Exhibit Number 5 will be admitted as evidence.

MR. BRUCE: The objection was to 4.

MR. CARR: I'm sorry, I'm sorry. I withdraw the objection to 4.

EXAMINER CATANACH: Exhibits 4 and 5 will be admitted as evidence.

Did we admit everything else?

MR. BRUCE: Yes.

CROSS-EXAMINATION

BY MR. CARR:

Q. Mr. Hefner, when we looked at Exhibit Number 6, your seismic section, tell me which side of this is north.

A. North is to your right.

Q. And when I look at these waves coming down, how far apart are they?

A. Every trace is 110 feet.

Q. You have other seismic sections, vertical, across

this area?

A. Yes, sir, every 110 feet.

Q. And it is on that that you're basing the orientation of this particular algal mound?

A. Yes, sir.

Q. And so what you're telling us is that based on your geological interpretation of this data, you have a small anomaly --

A. Yes, sir.

Q. -- that is approximately what in diameter, 200 feet?

A. Three hundred at the most, yes, sir.

Q. You can't move to a standard location, is what you're saying, based on this interpretation?

A. Right, because the nature of the tool is, you're averaging a lot of rock volume. And so as you move away from a known it just increases that risk.

Q. And have you drilled other Strawn wells, or has Chesapeake, based on your geological interpretation?

A. Yes, sir.

Q. And how do you go about drilling these wells? Are they directional wells?

A. They -- No, to date they've been vertical wells.

Q. And do you use directional techniques to control the bit as you drill?

A. Yes, sir, we do.

Q. And so -- And will you be doing that in this case?

A. Yes, sir.

Q. So that the bottomhole location will, in fact, be in the center of what you've mapped this mound to be?

A. That's correct. There's an example of a well that was northwest of town in which the deviations were all going in one direction, which is unusual because usually they'll corkscrew. And so we went in with a motor and did a motor run and oriented it back to our target, and that was a successful effort, so...

Q. Have you calculated the reserves you think you can produce from this map?

A. No, I have not.

Q. Has Chesapeake done any volumetrics on it?

A. No, there's still a lot of unknowns that --

Q. You don't have an estimate as to how much oil you think you can recover?

A. Only using the historical statistics in the old play area.

Q. In other words, looking at other wells and not doing a volumetric --

A. Right.

Q. -- estimate on what you have here?

A. Exactly. Just statistically.

Q. And you are anticipating enough oil from this ten-acre mound to pay back $895,000 in cost?

A. And we don't know the size, the actual size of the mound. All we know is that it's oriented in a very narrow shape along that lease boundary.

Q. And that orientation is based strictly on your interpretation of the seismic interpretation?

A. Yes, exactly, from...

So I agree, it is small, and if there is a severe penalty it may not be drilled because of its size.

MR. CARR: That's all I have.

EXAMINATION

BY EXAMINER CATANACH:

Q. Looking at Exhibit Number 6, Mr. Hefner, the red line represents what on this display?

A. Oh, I'm sorry, that was -- I had a -- At the time that I printed this I had another line that was on my workstation. That represented that line. And so when I printed this it was captured. It has no significance on this.

Q. Okay, your actual well location would be represented by the open circle on the left side of the display?

A. Exactly. You can see where it's annotated at the

top, it says 50 and 50?

A. Uh-huh.

Q. The top one would be line 50, the bottom one would be trace 50. The lines go east-west, the traces go north-south. And since this is a north-south line -- or a north-south trace, the next line number, going to the south, would be 49.

Q. Okay.

A. And that well is located between line 49 and 50, between those two traces. And that's where you can see on the interpretation that you get the maximum structural development and the maximum thickness, in that interval.

Q. Okay, so when you talk about the thickness, you're talking about the distance between the blue and the green lines --

A. Yes, sir.

Q. -- in that interval?

Okay, so that's the maximum thickness?

A. Of the entire Strawn.

Q. And you also testified that by this data you can also tell that the porosity is at the top of the Strawn?

A. By the wave shape.

Q. Okay. And does this also tell you -- When you go further south, it begins to thin back. Does that also tell you that the porosity ends at some point?

A. That next trace to the south that I'm calling line 49, between that one and the next one is where all that diminishes.

Since the seismic tool is averaging a large volume of rock, it's not going to see the type of detail that you would expect to see in, let's say, a cross-section.

And we've drilled wells on traces that look like that, thinking, well, we're close enough. Well, in reality, we were not. It ended up being a dry hole. It's just because of the nature of the tool and its averaging.

Q. And do you have similar lines that tell you the east and west extent of this --

A. I've got --

Q. -- structure?

A. Yeah, the survey covers the whole section --

Q. Okay.

A. -- and more, and we've got a line north-south every 110 feet and a line east-west every 110 feet.

Q. Okay.

A. And that's what this structure map was generating, utilizing that, using this methodology.

EXAMINER CATANACH: Okay, I have nothing further of the witness.

MR. BRUCE: I have nothing further in this case.

MR. CARR: At this time, Mr. Examiner, we would call David Rawlins.

DAVID RAWLINS,

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 Rawlins.

Q. Where do you reside?

A. Midland, Texas.

Q. By whom are you employed?

A. Marathon Oil Company.

Q. And what is your current position with Marathon?

A. My title is advanced senior geologist with Marathon.

Q. Mr. Rawlins, have you previously testified before the Oil Conservation Division?

A. No, I haven't.

Q. Would you briefly review your educational background for Mr. Catanach?

A. Okay, I have a bachelor of science degree in geology from Jordan Southern College that I received in 1975 and a master of science in geological engineering from South Dakota School of Mines and Technology in 1978.

Q. Could you briefly review your work experience following graduation?

A. Okay. I went to work in 1978 for Exxon and Exxon Company USA in Tyler, Texas, then assignments from there to Houston, Oklahoma City, and then in 1986 I was transferred to work the Permian Basin for Exxon. And I worked with Exxon up until 1995, and then I started working for Marathon. So I've worked the Permian Basin for 11 years.

Q. Are you familiar with the Application filed by Chesapeake in this case?

A. I am.

Q. And are you familiar with the geology in the area of the proposed well?

A. I am.

Q. In your work with Marathon do you also -- are you called upon to interpret seismic information --

A. Yes.

Q. -- from time to time?

A. Right.

Q. Is that a tool you generally or frequently work with as part of your professional work as a geologist?

A. That's correct.

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

EXAMINER CATANACH: Any objection?

MR. BRUCE: No objection.

EXAMINER CATANACH: Mr. Rawlins is so qualified.

Q. (By Mr. Carr) Mr. Rawlins, what does Marathon seek in this case?

A. We seek the imposition of a penalty on the production on this proposed Chesapeake Gandy 19-1 to offset the advantage gained by virtue of its unorthodox well location on the offsetting Marathon spacing unit.

Q. When did Marathon first discuss the development of the northeast quarter of Section 19 with Chesapeake?

A. We were contacted, and it's already been brought up, in December of 1996 concerning forming a proposed working interest unit in there. We were agreeable to do that. All that we asked to do was to see the seismic data, to see that we were giving up equally prospective acreage -- or throwing in equally prospective acreage as they were in that working interest unit.

Q. And what response did you receive?

A. We never heard back from them. And we contacted them on numerous occasions, both myself and our landman, to see if they were still interested in doing this, and did not have any response.

Q. Let's go to Marathon Exhibit Number 1. Would you just briefly note what that is?

A. This is a land plat of Section 19, 16 South, 36

East, Lea County, New Mexico, showing the wells that have been drilled in that section and also showing what we believe to be the current ownership, and that's based on our Midland Map Company map that we received back in June. We pulled the ownership off of that.

Q. Now, Mr. Rawlins, what are the pool rules which govern the development of the Strawn formation in this area?

A. It's 40-acre spacing and 330-foot setbacks.

Q. Now, you were present for the presentation here this afternoon by Chesapeake, were you not?

A. That's correct.

Q. I would ask you to take out or refer to what was introduced as Chesapeake Exhibit Number 6. You have that before you, do you not?

A. That's correct.

Q. The red line on that map is the location of the proposed Gandy 19 Number 1; is that your understanding?

A. That's correct.

Q. I believe Mr. Hefner testified that each of those lines was 110 feet apart, correct?

A. That's correct.

Q. And on the -- The left hand of the exhibit goes south, right?

A. Correct.

Q. Now, if you look at this line alone, how far can you see porosity? Recognizing that each of those traces is 110 feet apart, how far to the south of the location can you actually find evidence of a porosity pod or an algal mound in the Strawn formation?

A. Well, I'm not sure, you know, that's based on Mr. Hefner's interpretation of what it is. But based on his interpretation, using the -- you know, the black reflectors there, it looks like it goes at least three hundred and -- three traces over, you know, or approximately 320 feet --

Q. And how --

A. -- 330.

Q. -- much of that is on the Marathon tract? 117?

A. Yeah, I mean, this proposed location is 117 feet off our tract. So it looks like it goes another -- at least a couple hundred feet onto our acreage.

Q. Based on the evidence that you have seen on this and your expertise as a geologist, can you conclude that the reservoir into which they're projecting the Gandy 19 is, in fact, contained solely on acreage operated by Chesapeake?

A. No, I can't do that. I mean, I see the interpretation and what they're using to say where the anomaly is. I mean, that's pretty well known in terms of people that are working the Strawn. But we've seen very

often times where the porosity does extend out further than what you think the actual pod is mapped, so...

Q. Based on what you see on this exhibit, is it possible that the mound extends as much as 200 feet on to Marathon?

A. Just looking at this seismic line, yes, it could extend as much as 200 feet, and then even more, because a lot of times the porosity and the algal mound development is below the resolution of the seismic.

Q. Let's go to what has been marked as Marathon Exhibit Number 2. Would you identify that, please?

A. Exhibit Number 2 is what we feel like is the recommended -- should be the recommended penalty for this proposed location. The location is 117 feet off our lease line. The State requires it to be 330 feet off the lease line.

So this location has encroached 213 feet towards our lease, and so we feel like the recommended penalty should be 213 feet divided by 330 feet, which is a 65-percent penalty.

Q. And would this penalty even be inconsistent with the seismic interpretation that you have before you?

A. What's that?

Q. Is it consistent --

A. Oh --

Q. Would it be a consistent --

A. Right.

Q. -- penalty --

A. Yes.

Q. -- based on that data?

A. That's correct.

Q. If the penalty is to be effective, what do you suggest it be applied against?

A. I'd say it be applied against, you know, the depth bracket allowable, or the initial potential, whichever is the lesser of the two.

Q. In your opinion, is the imposition of the penalty on production from the Gandy 19 Number 1 well as recommended by Marathon necessary to protect the correlative rights of Marathon?

A. Absolutely.

Q. Is this penalty necessary to offset the advantage that is being gained by Chesapeake by virtue of this unorthodox location?

A. Absolutely.

Q. Were Exhibits 1 and 2 either prepared by you or compiled at your direction?

A. That's correct.

MR. CARR: At this time, Mr. Catanach, we move the admission into evidence of Marathon Exhibits 1 and 2.

EXAMINER CATANACH: Exhibits 1 and 2 will be admitted as evidence.

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

EXAMINER CATANACH: Mr. Bruce?

CROSS-EXAMINATION

BY MR. BRUCE:

Q. Mr. Rawlins, has Marathon sought to do its own seismic in this area?

A. Yeah, we do have a seismic proposed in this area.

Q. Proposed?

A. Proposed. It hasn't been shot.

And we thought -- And one of the tracts we were going to shoot was this Section 19, and we thought by contacting Chesapeake earlier this week and offering to purchase that seismic at the market value for the seismic we would be able to drill this well without shooting our own 3-D across this area.

Q. On Exhibit 6 are you aware that the red line has no meaning?

A. The red line, I assumed, was the proposed location.

Q. I believe Mr. Hefner testified that the little dot by the 50-50 marks is the well location.

A. This one right here?

Q. Yes, sir.

A. So it moves over half a trace. Okay, I didn't hear that.

Q. Now, you said that this particular porosity pod could extend 200 feet onto Marathon acreage.

Is Marathon willing to drill 117 feet out of its lease line?

A. If we had seismic, we might. We would have to have something to base that prospect on.

Q. With or without a penalty?

A. We would have a penalty, just like the one that you have.

Q. Is Marathon willing to drill a well, 11,800-foot test, $900,000, with, say, a hundred-barrel-a-day allowable?

A. I don't think Marathon would be willing to drill a 10-acre anomaly. I don't think it's economic.

Q. Do you agree that the anomaly is about 10 acres.

A. No, I do not. I do not have enough data that tells me what the size of the anomaly is. If I had all the data --

Q. You can't say it's not ten acres?

A. That's right. I mean, I've only seen one seismic line --

Q. Has Marathon --

A. -- and with this one seismic line I can't tell you where the southern boundary of that anomaly is.

Q. How many Strawn wells has Marathon drilled in Lea County?

A. We have participated in several Strawn wells over the last 10 years, most of them being in the Lovington-Shipp area, and a lot of those were TXO. You know, Marathon had merged with TXO, so a lot of that expertise came from TXO.

Q. Were any of them Pennzoil wells that you participated in?

A. I don't recall. That was before I came to work for Marathon.

Q. How many Strawn wells has Marathon drilled in, say, 16 South, 36 East; 16 South, 35 East, over the last five years?

A. No, we haven't drilled any. Now, we have been acquiring acreage to drill Strawn wells.

Q. But to date you haven't drilled any?

A. That's correct.

Q. And you have no current proposal to drill a well on your acreage in the southeast quarter of this section?

A. No, not at this time.

MR. BRUCE: I have nothing else, Mr. Examiner.

MR. CARR: Just a follow-up.

REDIRECT EXAMINATION

BY MR. CARR:

Q. If we work off that circle at the top of the exhibit instead of the red line, then they'd have 150 feet on the Marathon property? Is that how you read it?

A. Those are 110 feet. All you've done is just move it over 50 feet.

MR. CARR: That's all I have.

MR. CARROLL: I have a couple questions.

EXAMINATION

BY MR. CARROLL:

Q. If you were shown Chesapeake's seismic information and then you agreed with that information, would you still be recommending a penalty in this case?

A. If we were to interpret the seismic ourselves?

Q. Yeah, and you agreed with their interpretation that the anomaly is situated as it is on Chesapeake's map.

A. I'd have to -- You know, I really couldn't tell you until I see the seismic data. Seismic data --

Q. I mean, if you did see it and you agreed with it, would you be recommending a penalty?

A. I would have to be 100-percent sure. And as you know, well know, with seismic interpretation you're generally never 100-percent sure.

Q. You referred to the market value of Chesapeake's

seismic. What is the market value of the seismic?

A. Well, it would be the -- I'm not sure of the exact -- I would have to get with a broker. But there is a value of 3-D seismic that's going, you know, per square mile.

Q. In this particular area?

A. Yeah, in this area. That would be easy to find out. But we -- You know, if Marathon said we were willing to pay whatever the market value is for the seismic, the 3-D seismic...

MR. CARROLL: That's all I have.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Rawlins, in your estimation you believe you've got at least 150 feet of porosity on your -- that falls on your acreage?

A. Well, I think some of it extends on to our acreage. I couldn't tell you -- You know, I don't know where this stops, where this black line stops, I mean where the porosity stops, because a lot of times the porosity is below the resolution of the seismic.

So it could extend for some distance onto our acreage. I just can't tell you from this one line out of the data cue that, you know, that's where it stops. But at least I think it does extend onto our acreage for some

distance.

Q. Is there any way of knowing how much of that porosity that extends on your acreage would contribute -- or would contain oil and gas reserves?

A. I don't think you would know that until -- you know, until you drill a well. And then you try to tie, you know, what you see in the well back to the seismic and say, Okay, I think maybe the porosity extends a little further, or maybe it doesn't extend as far.

You just -- Once you work it, you run your sonic logs through there, you go back and do some synthetics and modeling to try to determine how far it extends.

Q. Is there also the possibility that there may be an oil-water contact on this structure?

A. There's a possibility, there's always a possibility. But, you know, like you mentioned, one of the wells that he had, that the Strawn in their first well had some water in the bottom of it and the second well didn't. And I think you're -- the way our interpretation is, that you're structurally higher than either of those two wells.

So I think that it's probably more likely that you won't have a, you know, water contact there.

EXAMINER CATANACH: I guess that's all I have.

MR. CARR: I have a very brief statement. It is brief.

MR. BRUCE: I have a short statement.

EXAMINER CATANACH: Go ahead, Mr. Carr.

MR. CARR: May it please the Examiner, the issue here is not what Marathon would do *if* it had data. The issue here is what Chesapeake with its data is proposing to do. And I think this underscores why in areas like this, perhaps a working interest unit is the appropriate way to go, but we don't have that either.

We have a location 117 feet away from us, 65 percent too close. And even the seismic information that they've presented today, interpretive as it is, tends to support Marathon's position that this reservoir extends onto its acreage and doesn't stop in the middle of the section as mapped by Chesapeake.

To protect our rights, protect us from the advantage they're gaining by being 117 feet from us instead of 330, we ask you to impose a penalty. And we're asking it for 65 percent, because that is the only hard number we can come up with for you here today.

So that's what we're asking you to do. And we believe if you do that, our correlative rights will be protected. If you don't, we believe they'll be impaired.

MR. BRUCE: Mr. Examiner, first thing on seismic, Marathon offers to buy it. You know, there's something else, there's a competitive value to that seismic. These

companies are competitors in this area. You can't just put a dollar figure on that.

Now, regarding this well, Chesapeake is the one in this immediate area that has the expertise. It's drilled a number of wells. It's had a number of successful wells. They're based on 3-D seismic. It knows what it's talking about.

Marathon proposes a penalty -- I don't even think they'd drill a well with that type of penalty. It's much too large. Chesapeake made a reasonable offer for a reasonable penalty.

Mr. Rawlins mentioned something about they had a few wells in the Shipp-Strawn area. Back in the mid-Eighties, when a number of these wells are being drilled by Pennzoil, by Phillips, by others, what the Division did back then was base the penalty on productive acreage in the well unit, divided by the productive acreage in this particular porosity pod. I will provide you with copies of those orders that provided a reasonable penalty or a reasonable allowable that allowed a number of wells to be drilled without using a simple footage distance, which just doesn't make sense in these Strawn porosity pods.

For better or for worse, Mr. Examiner, you've been involved in a number of these Strawn cases in Lea County over the last couple years, and you know how

variable these porosity pods are. Just by assessing a footage-based penalty is unreasonable, and all that will accomplish is that no well will be drilled out here.

Frankly, drilling this well may help Marathon decide whether there's something on its acreage. So there is benefit to Marathon in having this well drilled.

I don't think it benefits anyone, whether the working interest owner or the royalty interest owners, anyone, to not have this well drilled.

We would urge your to approve the location. We don't think, based on Mr. Hefner's testimony, a penalty is necessary, but if one is imposed, it should be a reasonable penalty, not a severe 65-percent penalty.

Thank you.

EXAMINER CATANACH: Let me just ask Mr. Rawlins a question or two again.

FURTHER EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Rawlins, if a well was drilled, I mean, would you be able to use the data from that well, and do you think that would let you effectively map the extent of this pod?

A. Not without seismic.

Q. Well, I mean, if you drill the well in conjunction with the seismic data that you have, I mean,

could you effectively map the pod?

A. I think you would have a better feel for that than without -- you know, without the well there.

But, you know, as in all this, you know, with these pods you really don't know the actual extent of those. You have some production data that might help you out determining, you know, how big a reservoir might be, and you just try to work all that data together.

But, yeah, you probably won't know precisely how big it is.

Q. So even if a well is drilled, there's still going to be some question as to how much of that pod resides on the Marathon acreage, in your opinion?

A. Yeah, there's always going to be a question of -- there's going to be interpretation on how big and where that pod resides.

EXAMINER CATANACH: Okay. I have nothing further.

Anything further?

MR. CARR: Nothing further.

EXAMINER CATANACH: There being nothing further in this case, Case 11,844 will be taken under advisement.

(Thereupon, these proceedings were concluded at 2:10 p.m.)

* * *

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 11844, heard by me on September 4 1997.

David R. Catanach, 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 September 7th, 1997.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 1998