NEW MEXICO OIL CONSERVATION DIVISION

EXAMINER HEARING

SANTA FE, NEW MEXICO

Hearing Date SEPTEMBER 7, 2000 Time 8:15 A.M.

NAME	REPRESENTING	LOCATION
W. Kellahin	Kellahin & Kellahin	Santa Fe
William F. Carr	Campbell, Carr, Berge & Sheridan	Santa Fe
Lyssa Townsend	Chesapeake	OKC
Randy Gascoyne	Chesapeake	OKC
ROBERT A. HEFNER IV	CHESAPEAKE	OKC, OK
Jeff Clement	Saga	Midland, TX
Bill Chalfant	CPI	Midland
Michael H. Feldewert	Campbell, Carr, Berge & Sheridan	Santa Fe
Ramon Reyes	HEYCO	Roswell
Vernon Dyer	"	"
Paul Thompson	COLEMAN OIL & GAS	FARMINGTON
Alan Emmendorfer	Coleman O&G	Denver
Mike Mullins	Texaco	Midland
Robert Martin	Texaco	"
Danielle Carpenter	Texaco	"

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NAME	REPRESENTING	LOCATION
Brian Wood	Permits West	Santa Fe

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. 12,482
APPLICATION OF CHESAPEAKE OPERATING, INC., FOR POOL CREATION AND POOL CONTRACTION, LEA COUNTY, NEW MEXICO	)	ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

September 7th, 2000

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 7th, 2000, 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.

* * *

I N D E X

September 7th, 2000
Examiner Hearing
CASE NO. 12,482

* * *

E X H I B I T S

Applicant's	Identified	Admitted
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Exhibit 2	8	11
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* * *

A P P E A R A N C E S

FOR THE DIVISION:

LYN S. HEBERT
Attorney at Law
Legal Counsel to the Division
2040 South Pacheco
Santa Fe, New Mexico 87505

FOR THE APPLICANT:

KELLAHIN & KELLAHIN
117 N. Guadalupe
P.O. Box 2265
Santa Fe, New Mexico 87504-2265
By: W. THOMAS KELLAHIN

FOR YATES PETROLEUM CORPORATION:

CAMPBELL, CARR, BERGE and SHERIDAN, P.A.
Suite 1 - 110 N. Guadalupe
P.O. Box 2208
Santa Fe, New Mexico 87504-2208
By: WILLIAM F. CARR

* * *

WHEREUPON, the following proceedings were had at 8:15 a.m.:

EXAMINER CATANACH: Call the hearing to order this morning for Docket Number 25-00. Let me call the continuances and dismissals first.

(Off the record)

EXAMINER CATANACH: At this time we'll call first case, 12,482, which is the Application of Chesapeake Operating, Inc., for pool creation and pool contraction, Lea County, New Mexico.

Call for appearances in this case.

MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of the Santa Fe law firm of Kellahin and Kellahin, appearing on behalf of the Applicant, and I have three witnesses to be sworn.

EXAMINER CATANACH: Any additional appearances?

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 Yates Petroleum Corporation in this matter, and I have no witness.

EXAMINER CATANACH: Okay, will the witnesses please stand to be sworn in?

(Thereupon, the witnesses were sworn.)

MR. KELLAHIN: Mr. Examiner, I do not have, unfortunately, enough sets of the exhibits after we

collated them last night. I have three complete sets, and after the hearing, then, I will supply others with additional copies. But if you and Ms. Hebert would not mind sharing one for purposes of presentation, then I'd like to proceed.

Mr. Examiner, let me give you a brief introduction of what we're asking you to consider. I've handed you -- and it's not marked as an exhibit, there is a stapled pool locator plats. There's four of them. I took them out of the pool plats this morning downstairs, and I'm going to use the first on here to illustrate what we're trying to ask you to do.

The first one is what your records show to be the North Shoe Bar-Atoka Gas Pool. It is a 320-acre gas pool. It currently consists of the entire Atoka.

For this pool we're asking you to consider separating out the lower Atoka. The principal producing formation is what we've identified as the Brunson interval. And I know you'll recall and be familiar with the Ocean and Yates wells in this area that we're trying to have success finding the Brunson interval.

So that is the pool area. I need to tell you, however, that in Section 10 the Division records here show the northwest quarter is in the pool. However, our search of the Artesia records does not show that extension.

South of here, if you'll turn to the next page, is the south Shoe Bar-Atoka Gas Pool, and it is contiguous in part to the southern boundary of the North Shoe Bar-Atoka Gas Pool. I show this to you because when you see the technical displays and Mr. Hefner starts identifying for you as a geologist those Atoka wells which are producing from the Brunson interval and should be included in this new Brunson interval pool, there are Brunson wells producing in the South Shoe Bar-Atoka Gas Pool. I wanted you to see how that pool is reported on your records.

South of that, then, so that you can see that, the last displays are the Shoe Bar-Atoka Gas Pool, and it's further south. The records here match the Artesia records. For whatever reason, the display we're going to show you from the Artesia office has omitted the center pool, which was the South Shoe Bar-Atoka Gas Pool, but in fact it does exist, and its boundaries as I believe them to exist are described on the handout I've just given you.

We have three witnesses. We have a land witness to describe for you who we think are the operators and people affected that required notification, a geologic witness to show you the geologic arguments, and then an engineering presentation to validate what we think is an appropriate subdivision of the current pool into two separate pools.

LYNDA F. TOWNSEND,

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Mrs. Townsend, for the record, ma'am, would you please state your name and occupation?

A. Lynda Townsend, and I'm a landman with Chesapeake Operating and have been so since January of 1997.

Q. On prior occasions, Ms. Townsend, have you testified before the Division and qualified as an expert petroleum landman?

A. Yes, sir, I have.

Q. Concerning this particular Application, I asked you to identify based upon a search of the records those individuals or companies you believe to be operators in the pool. Have you done that?

A. Yes, sir.

Q. In addition, have you searched to the best of your ability to determine who were the offset operators of Atoka wells within a mile of that boundary?

A. Yes, sir.

Q. In addition, have you had a search made of the Artesia -- I'm sorry, this is Hobbs, isn't it?

A. Uh-huh.

Q. This is the Hobbs office. -- the Hobbs office OCD records to see what they reported to be the boundaries for this pool?

A. Yes, we have.

Q. All right, let's turn to the first display, then. Is this Exhibit 1 an accurate depiction of what you have been advised are the records from Hobbs?

A. Yes, sir.

MR. KELLAHIN: Mr. Examiner, at this point we tender Mrs. Townsend as an expert petroleum landman.

EXAMINER CATANACH: She is so qualified.

Q. (By Mr. Kellahin) Describe for us what Chesapeake has found from the Hobbs office concerning the boundaries of the pool that's the subject of this hearing.

A. All right, in the North Shoe Bar-Atoka field we found that they have designated in Section 2 of 16-35 lots 9, 10, 15, 16 and the southeast quarter. They have also designated all of Section 11 and the east half of Section 10, all in 16-35.

Q. Do the Hobbs office records show the inclusion of the northwest quarter of Section 10?

A. No.

Q. All right, let's turn to Exhibit Number 2 and talk about that. All right, let's take 2 and now let's compare it to Exhibit 7. If you'll go to the certificate

of mailing that I've handed you --

A. Uh-huh.

Q. -- which is the last exhibit in the exhibit package, there's a typed list of operators to whom notice was sent?

A. Yes.

Q. Did you assist in the preparation of that list?

A. Yes.

Q. If you turn to Exhibit 7 and turn to the second page, then, you'll find a list of six operators. Would you take a moment, looking at Exhibit 2, and identify for the Examiner where those operators have their wells in the pool?

A. All right, Yates Petroleum is located in 11, 12, 13, 14 and the southwest quarter of Section 2.

Q. Okay.

A. Ocean Energy is in Lots 9 and 10, 15, 16 and the southeast quarter of Section 2.

In Section 11 we have Yates in both the east half and the west half.

In Section 10 the east half is Yates Petroleum, the west half is Ocean Energy.

In Section 14, the west half is Arrington, David Arrington Oil and Gas.

In the east half of 15 it is Chesapeake

Operating.

I don't believe there's an operator in the west half of 15, in the Atoka Gas Pool.

EOG Resources was down in 22, I believe.

Q. Okay. Let's take this information and compare it to the Division records in Santa Fe that I handed you earlier this morning --

A. Uh-huh.

Q. -- and looking at the first page, then, it describes what the Santa Fe Division Office describes to be the boundaries of the North Shoe Bar-Atoka Gas Pool?

A. Right.

Q. All right. Exhibit 2, where are the wells operated by Chesapeake?

A. The wells operated by Chesapeake are in the east half of Section 15.

Q. All right. It is within a mile of the current boundary, then, of the North Shoe Bar but not yet extended to be included in that pool as currently described by the Division?

A. Yes, sir.

Q. The well that you have in the Brunson interval --

A. Yes.

Q. -- to be included in this new pool if it's approved, is which well?

A. It is the Boyce Number 3. It's located in the northeast quarter of Section 15, is the actual well spot.

Q. All right. And that would, if the Examiner approves the Application, be in the Lower Atoka Pool?

A. Yes, sir.

Q. What happens to the Boyce Number 1 well? What pool would that be in?

A. That's in the North Shoe Bar-Atoka.

Q. So that would stay in the upper Atoka --

A. Yes, sir.

Q. -- in the pool if it's subdivided?

A. Yes, sir.

Q. Have you received any objections or complaints from any of the operators listed on the notice of hearing?

A. No.

MR. KELLAHIN: That concludes my examination of Mrs. Townsend, Mr. Examiner.

We move the introduction of Exhibits 1, 2 and 7.

EXAMINER CATANACH: Exhibits 1, 2 and 7 will be admitted as evidence.

EXAMINATION

BY EXAMINER CATANACH:

Q. Up in Section 2, both Yates and Ocean operate wells up in Section 2?

A. Yes, and I believe that's split out, as I said,

in Lots 9, 10, 15, 16 in the southeast quarter, which are included in the pool boundaries. Those are operated by OSHA. And Yates is on the west side.

Q. And I believe you said that -- Well, let's see. How about in Section 14? Who's the operator?

A. Arrington is the operator in Section 14, David Arrington Oil and Gas.

Q. Is that the west half?

A. Yes, sir.

Q. Or the whole section?

A. Well, I think they operate the whole section now.

Q. Basically, you notified all operators in the pool and all operators of Atoka wells within one mile of the pool --

A. Yes.

Q. -- is that correct?

A. Yes, uh-huh.

Q. The Boyce Number 1 and 3, are those both Atoka wells at this point?

A. No, the Boyce Number 3 is the Townsend-Morrow.

Q. The Boyce Number 3 is the Townsend-Morrow?

A. Yes, sir.

EXAMINER CATANACH: Okay. I think that's all I have of this witness.

MR. KELLAHIN: Mr. Examiner, to clarify the

status of the Boyce 3 well, it currently is approved in the Morrow formation by Division Order R-11,432, and if the Division approves the new Brunson interval pool, we will then make application to have approval to produce the Number 3 well out of the Brunson interval, but it requires further processing because it is unorthodox as to that pool.

EXAMINER CATANACH: Okay.

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. KELLAHIN:

Q. Mr. Hefner, for the record sir, would you please state your name and occupation?

A. My name is Robert Hefner, and I'm a geologist for Chesapeake Operating in Oklahoma City.

Q. Mr. Hefner, has it been your responsibility as a geologist for your company to make a geologic investigation about the geological data available in this area?

A. Yes, it is.

Q. Based upon that review of the data, have you now a geologic about how the Division should handle the Atoka reservoirs that are currently within the North Shoe Bar-Atoka Gas Pool?

A. Yes, sir, I do.

Q. Pursuant to that opinion, have you prepared certain displays for introduction to the Examiner this morning?

A. I have.

MR. KELLAHIN: Mr. Examiner, we tender Mr. Hefner as an expert witness.

EXAMINER CATANACH: He is so qualified.

Q. (By Mr. Kellahin) Mr. Hefner, let me have you take Exhibit 3, and let's talk about the geologic justification for the vertical subdivision of the current pool. If you'll unfold that...

A. It might be helpful to kind of look along at the Exhibit 4. We'll come to it later, but it shows where this particular cross-section goes.

Q. Do you want to use Exhibit 4 as a locator?

A. As a locator for the cross-section.

Q. Okay, let's start, then, at that point. And without looking at the technical data on Exhibit 4, show me which line of cross-section relates to Exhibit Number 3.

A. Exhibit Number 3. Exhibit Number 3 on this plat is represented by the cross-section that's denoted with the red squares that are connected up. It starts on the west side of that plat with the Ocean Carlisle well, and then the second well is the Yates Brunson, which we're using as

the type well for this particular field, and then it goes to the Yates Big Flat, also in Section 10, and then on to the Boyce Number 1 to the south, then to the Boyce Number 3 further south, and then it comes up and catches the Mayfly in the northwest-northwest of 14, and then comes down to the old Mesa Well in 14 and then comes back north into Section 11 and catches the Runnels well and Lusk well operated by Yates.

Q. All right, let me ask you this, Mr. Hefner: By taking all of those wells, do you have a sufficient population of wells that you could relate them on a cross-section to make a decision about whether it's logical to separate out the Brunson interval from the current pool?

A. Yes, it represents a majority of the wells producing from this member.

Q. Okay. Let's go to Exhibit 3. Let's find the type well, and let me ask you some questions about that. Which one is the type well on Exhibit 3?

A. The type well is the second well on the cross-section. It's the Yates Brunson well.

Q. Have you related some of this information to Mr. Paul Kautz, the Division's district geologist in Hobbs?

A. Yes, sir, as a matter of fact, I sent him a copy of this exact cross-section that we've discussed, over the telephone, about what we were hoping to accomplish here

today.

Q. All right. Did you receive Mr. Kautz's preliminary approval that it was logical to separate out -- at least geologically logical to separate out the Brunson interval?

A. Yes, sir, he followed along with the logic.

Q. All right. And did you have previous conversations prior to that with regards to how to locate and identify the Townsend-Morrow Gas Pool?

A. Yes, sir, we did, and on this particular cross-section what's represented in the stratigraphic column, starting at the top, would be the Strawn formation. That's that top blue line. And then the top of the Atoka formation is that green line that's the third line coming all the way across the cross-section.

Q. All right. I'm looking at the type log, and I have found a point just below 11,500 feet where the yellow shading begins.

A. That's correct, that would be the top -- representing the top of the Atoka formation.

Q. And that's the current top of this pool?

A. Yes.

Q. Let's go down the log, and find me the current base of the North Shoe Bar-Atoka Pool.

A. The base of the North Shoe Bar-Atoka Pool would

be represented by that orange line that comes across the cross-section, which is locally designated as the top of the Morrow formation.

Q. So the current pool includes the yellow area and the green area?

A. Yes, sir.

Q. All right. The green area is representative of what, sir?

A. That's the vertical interval that we're wanting to designate as the lower Morrow that's represented locally by what's known as the Brunson member of the lower Atoka.

Q. Okay. Within the green interval, there is an area that's shaded yellow that correlates to various perforations in these wellbores. What does that represent?

A. The yellow is the gross sand represented in this portion of the lower Atoka, and the little red triangles that you see or red squares are perforations and production tests that have been conducted on these wellbores.

So as you look across the cross-section, you can see which ones of the wells have been opened in the Brunson member and have produced from the Brunson member.

Q. Describe for me your geologic reason to have the entire green area, including the yellow, defined as the vertical limits of this new pool, as opposed to restricting the pool limits to the yellow area.

A. The main producer in the lower Atoka in this area is this Brunson member. It's what most of the operators historically have been drilling for as an objective. And it appears from the well control that it is a depositional unit that can be separated from the upper Atoka. It has a regional datum represented by this top of the Morrow, and then also you can see where you come into the Brunson shale, and you can also correlate regionally.

So it's a unique depositional package.

Q. Is it easier geologically to correlate the top and the bottom of the Brunson shale, which is inclusive of the sand producing interval?

A. Yes, sir, it is.

Q. Do you think that's a more appropriate way to define the pool limits, vertically, rather than trying to specifically pinpoint the actual producing sand member?

A. Yes, sir, it would be.

Q. Give us a general geologic conclusion, then, about your opinion concerning whether this Brunson interval constitutes a common source of supply as a reservoir that is separated from any of the Atoka production above the green line.

A. Well, one, that you can map this unit separately. You can map -- It has a unique geometry to this particular depositional unit, as opposed to some of the upper Atoka.

And in some cases you can find that it can be in communication, and so it is a genetic unit and is not --

Q. In communication within the Brunson interval, as opposed to the upper and lower being in communication?

A. That's correct, exactly. And from testing that we've done on our Boyce Number 1, for example, we found that when we attempted to produce the Brunson member in our Boyce Number 1 well, it proved to be noncommercial, and then we came up and perforated the upper Atoka in that particular wellbore and had a completely different pressure profile and economics than the Brunson.

Q. Is there sufficient geologic separation between the Brunson interval and what we're describing as the upper Atoka?

A. Yes, there is.

Q. Do you see any evidence of open faulting or any other connections between the upper and lower Atoka that would put wellbores in each pool in communication?

A. No, from the evidence that I've been able to review it appears that the faults are not a conduit for communication and effectively seal -- are sealing faults, and so do not provide a conduit.

Q. Okay, let's count over from the left and find the fourth wellbore. It's the Boyce "15" 1?

A. Yes, sir.

Q. And the next one is the Boyce "15" 3?

A. Yes, sir.

Q. Let me give you this situation. In the Boyce "15" 1, if that is produced in the upper Atoka, and if the Boyce "15" 3, then, is produced in the Brunson interval, you would have two wellbores, each of which would be in a separate source of supply?

A. Yes, sir, you would.

Q. Okay. Without that opportunity -- Those two wells are in the same quarter section, are they not?

A. Yes, they are.

Q. So you have to select one of these wellbores to produce out of either of these pools, the way they're currently arranged?

A. That's correct.

Q. Okay. Identify on Exhibit 3 those wells that you consider to be in the Brunson interval and therefore to be included in the new pool if it's subdivided into the Brunson pool.

A. On this particular cross-section it would be the Yates-Brunson well, represented by well number two. Well number three is the Yates Big Flat well. The fourth well, our Boyce, we ended up putting a bridge plug, so it is not producing from that member.

The next well that is, is the Arrington Mayfly,

which is well number six on the cross-section. It is currently producing from the Brunson member, as well as the Monsanto well, which is well number seven, is producing from the Brunson member. And the Runnels well was producing from that member but has since been plugged back and producing from the Strawn. And then the Yates Lusk well, this well was redrilled and is now producing from the Brunson member. So that would be --

Q. In addition to the wells on Exhibit 3, are there any other wells that you consider to be Brunson interval wells?

A. If we were to turn to Exhibit 4 --

Q. Okay, let's do that.

A. -- there are a couple other wells.

What you will notice on this exhibit, there's some red lettering by the Atoka-Morrow producers. And what the lettering represents -- Let's start in Section 2, in the southwest quarter, and use this as an example. The Yates Field APK well, as per the records that I was able to get from the OCD, that well is currently classified as a wildcat Morrow, and it is, from my examination of the subsurface, producing from the Morrow.

If you look at the Townsend Number 1 that's to the northeast of that well -- it's operated by Ocean -- that particular well is classified by Hobbs as a wildcat

Atoka, and it's producing from an upper Atoka member.

if you come down to the west, to Section 3, there's a well that was recently completed by Arrington called the Parachute Adams. It's been classified as a Wildcat Morrow, but it is currently producing from the Atoka-Brunson. That would be another well that you would possibly put in that same field.

Q. All right, let me do this another way. We're looking at Exhibit 4.

A. Uh-huh.

Q. If I find those wells that say "Atoka (Brunson) producer", that would represent a wellbore which you would consider should be put in this new north Shoe Bar-Lower Atoka Gas Pool that is the Brunson interval?

A. Yes, sir.

Q. Are there any of these that are not so identified that should be included on Exhibit 4? Did you get all those so he can find them?

A. Well, I did except for the Mayfly Number 1. It got so busy in there I wasn't able to put that designation. But the Mayfly 1, as we see in the cross-section, is producing from that Brunson member.

Q. All right. Mayfly 1 is in the extreme northwest-northwest of 14?

A. Yes, sir.

Q. And that's the only other well on this display that doesn't have the appropriate Atoka-Brunson producer notation?

A. Well, the Yates Jones -- I just got a log on it, and that's in the southwest of Section 11 -- is producing from the Atoka-Brunson. So that would be another designation.

Q. I'm trying to find it. Section 11?

A. Southwest of Section 11.

Q. Is that the directional -- or horizontal well?

A. No, it's the one above that, to the north.

Q. I've got you. So that one that's an open circle right now --

A. Yes.

Q. -- has been drilled?

A. Drilled and recently completed.

Q. And so you think that's a Brunson producer?

A. Yes, sir.

Q. All right. Let's go back now and look at some additional cross-sections that you are submitting to help further delineate the Brunson interval. Let's set aside Exhibit 4 as the locator for a moment and look at what we've marked as Exhibit Number 5. What is Exhibit Number 5?

A. Exhibit Number 5 also ties you into the same

wells back to the west, the Carlisle, the Big Flat and the Brunson well by Yates, which is our type well, and then goes off to the northeast to give you a representation of the other members producing in Section 2. And again, the interval representing the Brunson designation is the green line down to the orange line. So that's the same interval as we go off to the northeast.

And the Yates Field APK, as we discussed earlier, is producing from some Morrow intervals down below that orange line represented by those perforations. The Brunson has not been tested in this well. As you can see that it's structurally very low, and as you go off in this direction, it becomes water wet and not productive.

And then well number five is the Ocean Townsend, representing an upper Atoka member and has no Brunson in that particular wellbore. And then the last well on that cross-section, the Ocean Townsend Number 9, has a Morrow producer with none of the Atoka members developed, nor the Brunson.

Q. Exhibit 5 shows the Yates Brunson "AQK" State well?

A. Yes, well number three on the cross-section, which is our type well.

Q. Yeah, this is a type well, right?

A. Yes, sir.

Q. Let's look at the type well log, then, on Exhibit 5, and show me why, in your opinion, this is a useful benchmark for geologists to make the separation between the Brunson interval and the upper Atoka.

A. For example, looking at the Brunson well itself, if you refer to the log that's on the left side, which is a resistivity log, you can see as we come into the Atoka, the upper Atoka is pretty high resistive rock, and then the curve shifts to the left pretty dramatically, representing the top of the Brunson shale. And that section is pretty consistent all the way down to the top of the Morrow, representing a similar depositional unit, and this one that has the sand located in the middle of that shale unit.

And so it's easily identified in a vertical sense and is separate from the upper Atoka, plus the Atoka represents an entire package, about 500 feet, and we're putting the Brunson into about a 100-foot interval.

Q. Okay. Would the type well, then, serve as a useful means for other geologists to make a correlation to the type well and, with accuracy and without unusual difficulty make a correlation and locate the top of the Brunson pool?

A. Yes, I think through both these prospects.

Q. Okay. Let's finally talk about the horizontal area. The current pool is described, as we've discussed

earlier this morning, as being portions of Sections 2, 11 and 10. What recommendation do you make to the Examiner as to what wells, then, should be added to the North Shoe Bar-Lower Atoka Pool to be those, then, within the population of wells that are producing from the Brunson interval? Would they be those that you identified earlier?

A. Yes, they would.

Q. Okay. Let's go back and have you describe Exhibit 4, now, in terms of the isopach. What are you isopaching, and describe for us what conclusions you have reached about the isopach?

A. This isopach represents the gross sand interval of the reservoir. There appears to be two separate pods developed in this particular unit. It appears to be a fluvial-type unit coming off the Central Basin Platform to the southeast coming into the Basin, going to the northwest. And from correlations and pressure information, the pods seem to be unique and separated.

And it shows just the depositional strike of the Brunson member across the sections that we're discussing.

Q. Okay. Let me show you the handout earlier, so I can focus your attention on the southern boundary of the current North Atoka Pool.

A. Okay.

Q. All right. When we look at the Santa Fe Division

records on the North Shoe Bar and compare it to the South Shoe Bar, and then look at what to do with the wells that are in that area, we need to have you tell us how you would extend or contract either pool so that all the Brunson-interval wells are in the right pool.

For example, if you'll turn to the second sheet and look at the South Shoe Bar-Atoka Gas Pool --

A. Uh-huh.

Q. -- currently it's the west half of 14 and the south half of 15. When I look at your Exhibit 4 in 14, you've identified the Arrington Mayfly well up in the northwest-northwest as a Brunson well, yet under this nomenclature it appears to be in the south Shoe Bar-Atoka Gas Pool?

A. Yeah, it does appear that way from this map. The records that I looked up have it in the Townsend-Morrow. So there's -- I think what happened historically was that the early wells that were drilled in this township were put in that Townsend-Morrow, and they continued to be put in there, and then these Atoka fields, I guess, were created, and the consistency was not carried through, or there wasn't any reclassification of some of the early nomenclature, and so that got carried down through here.

That's why, for example, these wells in 14 are in the Townsend-Morrow, as opposed to the South Shoe Bar-

Atoka.

Q. Would it be your recommendation, then, that the Division office in Santa Fe and the Division office in Hobbs make an examination of the classification of these wells so that they're appropriately reclassified to get them in the right pool?

A. Yes, sir.

Q. As to the Chesapeake wells in the northeast quarter of 15, describe for me how you would classify each of those two wells. We have the Boyce 1 and the Boyce 3.

A. Yeah, the Boyce Number 1 would be -- I guess it would be, if we're going to redesignate the North Shoe Bar-Atoka as the upper Atoka, that it would go into that field and is producing from the upper Atoka. Right now the Boyce 3 is producing, actually, from the Morrow, so that classification as the Townsend-Morrow is appropriate.

If we were to come up and try a completion attempt in the Brunson, then at that time I would put it in the new pool, designate it for the lower Atoka, or Shoe Bar-Lower Atoka.

MR. KELLAHIN: That concludes my examination of Mr. Hefner.

We move the introduction of his Exhibits 3, 4 and 5.

EXAMINER CATANACH: Exhibits 3, 4 and 5 will be

admitted as evidence.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Hefner, what is the purpose of doing all this? Is it to accommodate the Boyce wells?

A. Well, there's confusion in the nomenclature and fields through here, and just trying to get that -- I guess the number one objective would be to be consistent in the nomenclature and the field designations.

Q. Well, I mean, can't that be straightened out through other means by the District office looking at the logs and determining whether or not a well is a Morrow or Atoka producer?

A. Yeah, that would --

Q. I mean, that's some of the confusion, isn't it?

A. It is, it is, definitely. And then the second part of that is that the main Atoka member producing in this township is the Brunson, and therefore it qualifies to stand on its own merit and be its own field. That would then allow industry the opportunity to try to develop the upper Atoka, which would be -- have its own unique characteristics and different geometries and depositional system than the Brunson does.

Q. Would that involve drilling separate wells to --

A. For the upper Atoka?

Q. For the upper and the lower?

A. Yes, sir. That would allow industry to do that.

Q. Is it economically feasible to drill a separate stand-alone well to the upper Atoka?

A. It appears through here, and I think we'll have additional testimony, that the Morrow, lower Atoka and upper Atoka all have similar economic characteristics and can stand alone, just as the Morrow does right now, versus the Atoka.

Q. Why would it be necessary for an operator to drill two wells? Why can't these wells be produced singly within both Atoka intervals?

A. This is a stratigraphic trap, and because of the nature of the stratigraphy they have different geometries that are unique to each member. And so one geometry doesn't necessarily lend itself to be the optimum location to produce the other, and so this would allow industry the freedom to locate wells based on the uniqueness of each geometry separate of each other and not be tied.

Q. Most of the wells currently are producing from the Brunson interval?

A. Yes, they are. And the two recent completions in the upper Atoka, that show that it can stand alone economically, would be the Ocean Townsend Number 1-2 in Section 2 and our recent completion in the Boyce Number 1.

So that member can stand on its own economically and -- But being a younger member, it has a different depositional characteristic. You start to -- As you come up through the section you have additional drowning of the area, the marine environment coming in, and the upper Atoka tends to be more of a strand-line deposit, as opposed to -- and so would strike opposite to this fluvial system represented by the lower Atoka.

And so you have completely different geometries, although there's not enough well control at this time to substantiate that. But from log characteristics it appears that way. And it would allow industry to develop that separately.

Q. So basically what you're saying is, you're going to have situations like the Boyce situation where you can't access both of the sands at one location?

A. Right, exactly.

Q. How many other areas of this pool are going to be comparable to this Boyce situation?

A. I think that's yet to be seen since industry, in a sense, their hands have been tied in trying to determine that. I think that would free industry up to prove that out. I think it's probably a little early to say with these two recent completions.

Q. Okay, the recent completions, again, were the --

A. The Ocean Townsend 1-2.

Q. And where is that?

A. It's on that second cross-section, and it's in Section 2. It's well number five on that second cross-section. And there's a blue line on the map plan that designates where that cross-section goes. It's the one that goes up to the northeast, so it would be the next-to-the-last well on that cross-section.

And then the other one is the one that we operate in the northeast-northeast of Section 15, represented by the Boyce Number 1.

Q. So you don't think, given the geological data that you guys have, that it's possible to locate a single well in a location to access both the upper and lower?

A. No, I mean, you've got different strikes, or what I'm suggesting would be different strikes, to both of these depositional systems, and so they would both be unique. You'd have to locate -- Your optimum locations would not coincide with each, necessarily.

Q. Now, this affects also the South Shoe Bar-Atoka Gas Pool, because there are some wells in that pool that are in the Brunson?

A. Well, according to this plat, it shows Section 22, which there are no -- There are no currently producing wells in the Atoka or Morrow.

There's a recent completion in the northwest of Section 23, but actually that's a Morrow producer and has been put in the Townsend-Morrow. So really, the only wells that potentially would be affected would be the wells in the west half of 14, which, from what I was able to find, suggest they've been put in the Townsend-Morrow, as opposed to the South Shoe Bar-Atoka.

Q. And that would be the Mayfly --

A. -- and the Monsanto.

Q. -- and the Monsanto?

A. Yes, sir.

Q. Those have both been put in the Townsend-Morrow?

A. That's what I was able to pull up. Now, there may have been something filed more recent than I've been able to get that has changed that, but...

Q. Well, have the Boyce wells been put in any pool yet?

A. Originally the Boyce Number 1 that we drilled was put into the Townsend-Morrow. And then when we made a completion attempt in the Morrow, in that well, and that failed, and we came up and ended up trying the Brunson, and that failed, then we came up to the upper Atoka. And my understanding is that we were then put into this North Shoe Bar-Atoka. But see, I had a dialogue with Paul Kautz about that, trying to determine what pool we were going to be put

in, since that designation was a recent designation.

Q. Does Chesapeake plan additional development in this area?

A. We have nothing currently on the drilling schedule. It would depend on these rule changes coming into effect and then me going back to my management and discussing the opportunities. But as of right now we do not have anything to be drilled.

Q. So approval of this Application in some form would allow you to produce both the Boyce wells?

A. Yes, that would.

Q. The Boyce 1 being produced from the upper and the 3 being produced from the lower?

A. Yes, sir.

EXAMINER CATANACH: Mr. Carr, did you have any questions?

MR. CARR: No, I do not.

EXAMINER CATANACH: Okay. I think that's all I have of this witness, Mr. Kellahin.

MR. KELLAHIN: Okay, thank you.

RANDY G. GASSAWAY,

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Gassaway, for the record, sir, would you please state your name and occupation?

A. My name is Randy Gassaway, I am a petroleum engineer with Chesapeake Operating in Oklahoma City. I am responsible for the completion efforts in Lea County, New Mexico, and the production of the wells after completion.

Q. Does that responsibility include the two Boyce wells in the northeast quarter of 15?

A. Yes, sir.

Q. In addition, have you examined the available production and engineering data for the other wells in this area, particularly focusing on the Brunson interval and then on what we've characterized as the upper Atoka?

A. Yes, I have.

MR. KELLAHIN: We tender Mr. Gassaway as an expert engineer.

EXAMINER CATANACH: He is so qualified.

Q. (By Mr. Kellahin) Let me ask you to take just a moment, Mr. Gassaway, and let's turn back to Mr. Hefner's Exhibit 4.

A. Okay.

Q. All right, on Exhibit 4, in Section 15, there's the Boyce 1 well, which is north of the Boyce 3?

A. Yes.

Q. The Boyce 1 well was tested in the Brunson

interval and was not successful?

A. It was tested in the Brunson interval and marginally successful, but --

Q. So then you came up the hole in the upper Atoka, and it's currently producing in the upper Atoka?

A. That is correct.

Q. Okay. In the Brunson "15" 3, it's currently in the Morrow?

A. It's currently producing in the Morrow.

Q. And looking at the engineering data, including the geologic data, you believe that there is a good opportunity in the Brunson interval to produce that gas that was not available to you in the Boyce 1?

A. That is correct.

Q. Okay. When we look at the competition that's set up in the offset, let's look at that. The Arrington well up in the northwest of 14, Mr. Hefner says, while it's classified in the Townsend-Morrow, in fact, is producing from Brunson interval, correct?

A. That is correct.

Q. Are you able under the current rules to meet that competition?

A. No, we're not.

Q. Do you have the opportunity to meet that competition if the Atoka is subdivided and you're allowed

to complete the Boyce 3 in the Brunson interval?

A. Absolutely.

Q. Okay. In order to meet the competition under the current rules, you would have to shut in the upper Atoka in the Boyce 1, would you not?

A. Under current rules we would have to do that, yes.

Q. And under the current rules, then, that would give you a chance to produce the Boyce 3 and meet the Arrington competition?

A. That's true.

Q. From that perspective, what do you recommend that the Division Examiner do?

A. I recommend that the currently North Shoe Bar-Atoka Gas Pool get separated into the upper and lower Atoka, as Mr. Hefner has discussed, separating the Brunson from the upper Atoka sand.

Q. Is there any currently available engineering data that is inconsistent with his geologic opinion supporting the separation?

A. No, sir, I have not found any.

Q. When we look at the analysis of the Morrow in this area, are you satisfied from an economic and an engineering perspective, including potential estimated ultimate recoveries, that the Morrow stands alone as its

own reservoir?

A. Absolutely.

Q. When we look at an analysis of the same methodology as applied to the Brunson interval, what is your conclusion?

A. That the Brunson is capable of standing on its own as well.

Q. And if the Atoka is subdivided where there is an upper Atoka exclusive of the Brunson interval, are you satisfied that it is sufficient size and shape to support itself as a separate common source of supply?

A. Yes, sir.

Q. If that rule change is made, then an operator could use a single wellbore and sequentially produce each of those pools?

A. That's true.

Q. Or they could try dual completions or something?

A. They could try dual completions, or multiple wellbores.

Q. Under the change, then, you would have the option of multiple wellbores?

A. That's correct.

Q. Let's look at the package Exhibit 6 --

A. Okay.

Q. -- and have you help us understand what you've

summarized here on the first two pages. What does this tell us?

A. Well, what we're doing here is, we're going through each one of the wells in Mr. Hefner's cross-section in sequential order, Wells one through nine.

Q. And you're looking at cross-section that's Exhibit 5?

A. Three?

Q. I'm sorry, no, that's Exhibit 3.

A. Exhibit 3.

Q. So you're using his numbering code for the cross-section, Exhibit 3, for your display?

A. That's correct.

Q. All right, sir, what have you concluded?

A. Basically what I've tried to do is summarize what the interval is producing from, what the current pool is, which coincides with Mr. Hefner's information, and tried to estimate from its production history not only its current cumulative production but what its ultimate recovery would be from that particular interval only.

Q. On the summary sheet, then, the Examiner can look at the second row. After the identification of operator, look at the second row and read over, and if you've labeled it "Morrow perforation", that explains the balance of the entry under that number?

A. That's correct.

Q. So the "Morrow perforations" relate to the EURs attached to that well?

A. That's correct.

Q. On well number two, the Yates well, that's a Brunson-interval well, and those calculations and estimates are directly related only to the Brunson?

A. That is correct, yes, sir.

Q. Okay. After we turn past the two summary sheets, you have a package of other data. Describe for us what you're including here.

A. This is just the data to support the summarized data on the front, to see the methodology employed.

Q. All right, sir. To get your EUR on the summary page, what did you do? How did you get that?

A. We took the industry-reported data through *Dwight's PI* and simply used a projection of its decline rate and current market conditions, as far as oil and gas prices, to estimate what the ultimate recovery would be, based on decline-curve characteristics.

Q. Okay, and then attached in the package is a typical well-cost estimate from Chesapeake that would be applicable to Chesapeake and other operators to get the cost component of the calculation?

A. Yes, sir, that would be the second to the last

page in the packet, it would be what we would say would be a typical-type AFE.

Q. And then finally in the package set you have the economic analyses that show that each of these three reservoirs has sufficient potential EUR to support the drilling of a well, should an operator choose to do that?

A. Yes, sir, this is just a generic type of what we think a typical Morrow -- whether it be a Morrow, Atoka or a Brunson interval would produce, based on the statistical average of not only these eight wells but a much larger sampling of Morrow or Brunson-type wells.

Q. Describe for me, Mr. Gassaway, what you consider to be the typical strategy of an operator in how they approach the upper, the lower Atoka and then the Morrow. They drill through all three, do they?

A. Yes, sir.

Q. The primary objective in this area is the Brunson interval, is it not?

A. That would be correct.

Q. And they drill down to the Morrow because there is an opportunity in the Morrow as well?

A. That's correct.

Q. If they're unsuccessful in the Brunson, then having penetrated the upper Atoka gives them an opportunity to produce that interval if it's present, and thereby

recover additional cost?

A. That's true.

Q. It would be not typical for an operator to simply stop in the upper Atoka and not continue downward, right?

A. No.

Q. So he would go all the way through the Morrow?

A. Yeah, it would be prudent to go ahead and take it to the Morrow.

Q. And as the circumstance exists for you in the Boyce "15" 1, what is the status with the Morrow production? It's still producing there, is it not?

A. The "15" 1 is -- both the Morrow and Brunson are isolated below a cast-iron bridge plug in that wellbore.

Q. And the Morrow has not appeared to be a highly developed reservoir, and therefore the remaining recovery is going to be limited in that wellbore?

A. That's correct.

Q. And you would like to recomplete this in the lower Atoka, in the Brunson interval?

A. Well, you mentioned "15" 1.

Q. I'm sorry, the "15" 3 is what I'm talking about.

A. Okay. Yes, the "15" 3 is currently producing from the Morrow interval as it's currently accepted, and its current production will not result in economic recovery for that wellbore. In fact, it will probably reach its

limit here in the next couple of months. And it would be our plan at that point in time, if we're successful in separating the two pools here, that we would recomplete in the Brunson and permanently abandon the Morrow.

Q. Okay. And that would give you an opportunity to produce the 160-acre portion of this spacing unit out of the Brunson interval?

A. That would be correct.

Q. And you wouldn't have to abandon the current production in the upper Atoka in the Boyce "15" well?

A. That's correct.

Q. So what do you recommend the Examiner do, Mr. Gassaway?

A. I recommend the Examiner approve the separation and establishment of a separate upper Atoka and a Brunson Pool within the North Shoe Bar -- currently accepted North Shoe Bar-Atoka Pool.

MR. KELLAHIN: That concludes my examination of Mr. Gassaway.

We move the introduction of his Exhibit 6.

EXAMINER CATANACH: Exhibit 6 will be admitted as evidence.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Gassaway, on your number two well, on your

Exhibit 6, the Yates Brunson AQK State Number 1 --

A. Yes, sir.

Q. -- that's a Brunson producer?

A. That is correct.

Q. And you've got estimated EUR of 638 million?

A. Yes.

Q. Is that an economic well?

A. In this environment, yes, it certainly is.

Q. It is?

A. Yes, sir. In fact, these wells will pay out after the production of approximately 300,000 cubic feet, with the current yield to the oil and gas ratio. You'll produce enough oil and gas to pay out the $1.1.

Q. So in this environment, would you drill a well to recover 638 million cubic feet of gas?

A. In this area I would, yes, sir, because of the upside. It's very difficult to determine the reservoir quality. The existence of the reservoir is probably much easier to ascertain.

Q. Is there any engineering reason that these two Atoka intervals cannot be produced singly in a wellbore, any pressure factors or anything like that?

A. It was our experience in the Boyce 1 "15" as we completed that, that there was a significant pressure differential between the Brunson interval and the Atoka.

The Brunson interval -- it had appeared that it had suffered some sort of pressure depletion, most likely from offset production within that interval; and that the upper Atoka at the time that we completed it, actually very similar to what we would consider to be virgin pressure in that sequence, if you will, making it -- at least in that wellbore I would not want to commingle those two intervals, simply because of the pressure differential.

Q. That's just in the Boyce "15" 1?

A. Yes, sir. And in the "15" 3, by the -- as the drill bit penetrated the Brunson member, it appeared to have a significantly larger pressure than what we would expect for the area, because of the way it acted when we had the mud up and we hit that interval to keep control of the flow.

That's how I come up with an estimate of roughly 5750 p.s.i. There's enough pressure differential there to indicate that it's significantly different than the Atoka, upper Atoka.

Q. So in the number three well, the lower -- the pressure in the lower was higher, and in the number one well the upper was higher?

A. Yes, sir.

Q. So you guys are contending that the Mayfly 14, over in Section 14, is draining your acreage in the Brunson

interval, or at least is producing from that interval and possibly draining your acreage?

A. Yes, sir.

Q. And you said the number one well was a marginal producer in the Brunson?

A. Yes.

Q. What did that produce? Do you remember?

A. We tested it at a rate of about 300 MCF a day, and it was not -- at that rate was unable to deliver into a high-pressure gas pipeline.

EXAMINER CATANACH: Okay, I believe that's all I have, Mr. Kellahin.

FURTHER EXAMINATION

BY MR. KELLAHIN:

Q. One last point, Mr. Gassaway, that I recognize I didn't ask you. If you go back to the locator map, 4, Exhibit 4 --

A. Okay.

Q. -- there's additional drilling in this area that I wanted to alert the Examiner to.

If you look in the southeast-southeast of 10, just north of the Boyce area, there's an open circle for a Yates location.

A. Yes.

Q. What do you know about that well? Has it been

drilled?

A. I'm not sure. I assume it's been drilled.

Q. All right.

A. I don't have knowledge of that.

MR. KELLAHIN: Okay. Let me recall Mr. Hefner to describe for you, Mr. Examiner, very briefly, the status of that wellbore. Let me call Mr. Hefner back to the stand.

ROBERT A. HEFNER, IV,

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Hefner, I remind you you're still under oath and sworn as a witness.

A. Yes, sir.

Q. On Exhibit Number 4, there are three open circles in 10 and 11.

I would like you to give the Examiner an update on the development in the area. Let's start with the southeast-southeast of 10, and look at the Yates 2 Big Flat "ASN" well that is the northwest offset to Arrington's Mayfly. What's the status of that well, to the best of your knowledge?

A. That well was drilled as a Strawn test, and a Strawn completion was made initially, and I assume it's

still a Strawn producer.

Q. Okay. Up in the -- over towards the southwest-southeast, there's the Big Flat 3-10. It's an open circle, another Yates well. What's that well?

A. That well is, as far as I know, currently drilling, maybe near total depth, and is testing the Atoka-Morrow section.

Q. All right, so that is potentially a well that would be impacted by the decision made in this case?

A. Yes.

Q. Over in Section 11, in the southwest quarter, there's an open circle for the Jones "ATK" 1-11 well. What's the status of that wellbore?

A. That well was recently completed in the Brunson member of the lower Atoka.

Q. All right, so the Brunson interval is being produced in the southwest of 11, in the northwest of 14, in the southeast of 10, but because of the relationship between the Boyce 1 and 3 is not currently able to produce in the northeast of 15?

A. That's correct.

MR. KELLAHIN: No further questions.

EXAMINER CATANACH: The witness may be excused.

Is there anything further, Mr. Kellahin?

MR. KELLAHIN: No, sir.

EXAMINER CATANACH: There being nothing further, Case 12,482 will be taken under advisement.

(Thereupon, these proceedings were concluded at 9:30 a.m.)

* * *

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 12482, heard by me on September 7 19 2000.

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 11th, 2000.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 2002