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. 12,024
APPLICATION OF YATES PETROLEUM CORPORATION FOR AN UNORTHODOX WELL LOCATION AND SIMULTANEOUS DEDICATION, LEA COUNTY, NEW MEXICO	)	ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: MICHAEL E. STOGNER, Hearing Examiner

August 6th, 1998

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, MICHAEL E. STOGNER, Hearing Examiner, on Thursday, August 6, 1998, 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

August 6th, 1998
Examiner Hearing
CASE NO. 12,024

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A P P E A R A N C E S

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By: WILLIAM F. CARR

ALSO PRESENT:

MARK W. ASHLEY
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* * *

WHEREUPON, the following proceedings were had at 10:23 a.m.:

EXAMINER STOGNER: At this time call the hearing to order and call Case Number 12,024.

MR. CARROLL: Application of Yates Petroleum Corporation for an unorthodox well location and simultaneous dedication, Eddy County, New Mexico.

EXAMINER STOGNER: Call for 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 two witnesses.

EXAMINER STOGNER: Any other appearances?

Will the witnesses please stand to be sworn?

(Thereupon, the witnesses were sworn.)

EXAMINER STOGNER: Mr. Carr, please continue.

BRENT MAY,

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. Brent May.

Q. Where do you reside?

A. Artesia, New Mexico.

Q. By whom are you employed?

A. Yates Petroleum.

Q. And what is your current position with Yates Petroleum Corporation?

A. I'm a geologist.

Q. Have you previously testified before this Division?

A. Yes, I have.

Q. At the time of that testimony, were your credentials as an expert in petroleum geology accepted and made a matter of record?

A. Yes, they were.

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

A. Yes.

Q. Have you made a geological study of the area which is the subject of this Application?

A. Yes, sir.

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

A. Yes, I am.

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

EXAMINER STOGNER: They are.

Q. (By Examiner Stogner) Mr. May, would you would briefly state what Yates seeks in this case?

A. We're seeking an order authorizing the simultaneous dedication of Yates' proposed Little Box Canyon AOX Federal Number 2 and its existing Little Box Canyon AOX Number 1 to the existing spacing unit, covering the west half of Section 7, Township 21 South, Range 22 East, Eddy County, New Mexico.

We're also asking for an exception to the provisions of the New Mexico Oil Conservation Division General Rule 104.C.(2)(b) to permit the Little Box Canyon AOX Federal Number 2 to be drilled at an unorthodox location 1980 from the north line and 1190 from the west line of the same Section 7.

Q. And why is this an unorthodox location?

A. It's crowding the interior quarter-quarter section boundary line.

Q. How large is the spacing unit which Yates proposes to dedicate to the new well?

A. It's 278.9 acres.

Q. And was that nonstandard spacing unit approved by Division Order 1792, entered on July 9th, 1998?

A. Yes, it was.

Q. Would you refer to what has been marked for

identification as Yates Exhibit Number 1 and simply identify those for the Examiner?

A. This is a 1998 or 1990 memo from Mr. William J. LeMay concerning the simultaneous dedication of wells in nonprorated pools.

It prohibits the simultaneous dedication of wells in nonprorated gas pools, provides that applications to produce both wells continuously and concurrently will be approved only after notice and hearing and upon compelling evidence that the Applicant's correlative rights will be impaired unless both wells are produced.

Q. Are these wells in a prorated gas pool?

A. No, they're not.

Q. So we're here today to present evidence to establish that unless we have the two wells on this unit, the correlative rights of Yates will be impaired?

A. Yes, we are.

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

A. This is a land map of the area in question. Notice in the center of the map it shows Section 7 of 21 South, 22 East, the irregular section that we're talking about here. There's a black dot showing the location for the Little Box AOX Number 2.

On the south -- In the southwest quarter of that

section there's a gas-well symbol that shows the location of the Little Box AOX Number 1, and if you'll note, there's a "5" by it, because that well was originally named the Little Box Canyon Unit Number 5 and then was later renamed. That well currently is a marginal Morrow gas well.

The Little Box Number 2, the well -- the location marked by the black dot is currently drilling at this time. We believe that -- and I'll talk about this a little bit further, but we feel like that it's going to be away from some of the water production in the Morrow and it should be a better completion because of that.

Also showing the offsetting spacing units on this land map, and the offsetting operators which is denoted by the colors, which on the second page shows the index for the colors. Yates-operated acreage is shown in yellow.

Q. And if the Application to simultaneously dedicate these wells is not approved, Yates will be in the position of either having to abandon the Number 1 or work out an arrangement whereby they're produced on an alternating basis, something of that nature?

A. Yes, we'll have to do something different.

Q. What rights does Yates own under the subject spacing unit?

A. In this west half of Section 7, only the Morrow.

Q. Let's go to what has been marked Yates Exhibit

Number 3, your stratigraphic cross-section, and I'd ask you to review the trace of that cross-section and then the data on it for Mr. Stogner.

A. This is a stratigraphic cross-section A-A'. It's basically a south-to-north stratigraphic cross-section. It's mostly the lower Penn section. There's a location map on the lower right-hand corner showing all the wells denoted on the cross-section.

The datum is the top of the lower Morrow, and that is marked. Also the top of what I call the Morrow clastics is marked, along with the top of the Chester.

Also, I have a zone colored in orange, which I loosely call the Mescal sand, and that is our main target in this area. I'd like to point out that that is -- note how thick, and the reservoir -- very good reservoir characteristics of that sand, high porosity, good perm, plus being very thick.

Also, up above that sand, within the Morrow clastics section, there are other Morrow sands. In fact, one is even colored on one of the wells in question.

Starting on the left-hand side of the cross-section is the Yates Pet Mescal SE Fed Number 1, located in Section 18 of 21 South, 22 East. This was the original well that drilled into this Mescal sand and discovered it. It was perforated and brought on line.

It IP'd for a little over 2 million cubic feet of gas a day. It eventually made a little over 2 BCF and about 83,000 barrels of water.

This well did start to produce water after a while. And in fact, it -- the resistivity log shows -- which is not shown here, but the resistivity log shows a gas-water contact in this well.

Note the perforations on it. Yates only perforated the upper part of the sand, because of the gas-water contact in this well, and that's why it eventually started cutting water.

This well was later one of the Morrow clastic sands, higher up around 8000 feet, it was completed and produced a small amount of gas, and this well is currently abandoned in the Morrow and completed out of the Cisco formation. And again, I want to emphasize that this well is the well that has the gas-water contact identified in it.

The next well on the cross-section is the Yates Little Box Canyon AOX Federal Number 1 in Section 7, 21 South, 22 East. It's 800 from the south line, 1600 feet from the west line. This is the well that was originally named the Little Box Canyon Unit Number 5.

Again, it has this, quote, Mescal sand in it. In fact, it's even a little bit thicker. Basically, the whole

interval of that sand was perforated in this well.

It IP'd for almost 6 million cubic feet of gas a day. It has produced about 5.5 BCF and also has made about 377,000 barrels of water. Currently I believe this well is doing close to a half a million in gas and a couple hundred barrels of water.

This well, again, originally did not start cutting water. We do not show that originally it had the gas-water contact in it, but we feel like that maybe we have pulled the water up through production.

Q. And that's the existing well on the spacing unit?

A. Yes, that is the existing producing Morrow producer in the proration unit.

The next well in the cross-section is the Cities Services. I believe it now is operated by Nadel and Gusman. But it's the Little Box Canyon Number 3 in Section 7 of 21 South, 22 East. It's located 660 from the north, 1980 from the east line. It's in the east half of Section 7.

This well caught just a tiny piece of the Mescal sand. They also had a Morrow clastics sand, which is what they perforated. They did not perforate the Mescal sand. That evidently do much, because they immediately abandoned the Morrow and went up and made a Cisco well, and that's what this well has produced from, is the Cisco, though it's

currently plugged.

The next well on the cross-section is the Stevens and Tull Sweet Thing Federal Unit Number 1, Section 6, 21 South, 22 East, 1980 from the north line, 1320 from the west line.

This well penetrated all the way through the Morrow. They totally missed this Mescal sand. But they did have other Morrow sands which they did complete from. And this well IP'd for almost 2 million cubic feet of gas a day and has not quite made a BCF yet.

The last well on the cross-section is Stevens and Tull Sweet Thing State 36 Number 1 in Section 36 of 20 1/2 South, 21 East, located 850 from the north line, 300 feet from the east line.

This well hit the Mescal sand again. You can see -- it's quite evident on the cross-section -- you've the nice, thick section again, the nice, tight porosity. They perforated a majority of the sand, and it IP'd for 6.5 million cubic feet of gas a day, and this is a fairly new well.

I might also add that here recently, within a few months, Stevens and Tull drilled another well just due north of this in the next section up, hit the Mescal sand again. And I'm not sure of the IP. From what I've seen of it, it sounds very similar to their Sweet Thing State 36

Number 1.

Q. In the east half of Section 7, there are two Nadel and Gusman wells?

A. That is correct.

Q. Did either of those wells encounter the Mescal sand and obtain commercial --

A. Both of them caught just tiny pieces of them, but there was no commercial production from the Mescal sand.

Q. Anything else with Exhibit 3?

A. I believe that's it.

Q. Let's go to your structure map, Yates Exhibit Number 4. Would you review that for Mr. Stogner?

A. This is a structure map on top of the lower Morrow, which was also the datum on the cross-section.

I've shown the proposed Yates location in red, in the west half of Section 7. You can also see several red gas-well symbols scattered throughout the area. The wells that are the Nadel and Gusman wells in the east half of 7, those two wells are currently produced or have produced out of the Cisco.

The well in the southwest corner of 7, which is the Little Box AOX Number 1, that is a Morrow producer.

Most -- In fact, the only other Morrow producers on this map are up in Section 6 of 21 South, 22 East, and in the east half of Section 1, 21 South, 21 East, and then

the Stevens and Tull well up in 36 of 20 1/2-21. Most of these other gas-well symbols, gas wells either are not currently producing or are producing from the Cisco.

This structure map is showing a nose and also a small closure. The nose is plunging down to the south or southeast. You can see a closure around the Little Box AOX Number 1 in the south half of Section 7.

The proposed location is probably not going to be quite as high as the Number 1, but it will be higher than the Yates Petroleum Mescal Number 1 down in Section 18 of 21 South, 22 East. And remember, the Mescal in Section 18 is the well that did have the gas-water contact in it.

Also shown on this structure map is a proposed location. From what I understand, Nearburg has proposed to re-enter the well in the northeast quarter of Section 12 of 21 South, 21 East, and kick that well off to a bottomhole location, located approximately 990 from the east line and 6- -- excuse me, 990 from the north line and 660 from the east line.

This map is prepared totally from well subsurface data.

The wells -- There's two penetrations down in Section 17 of 21-22. Those wells both penetrated the Mescal sand, but they were downdip and wet. There was no production out of them. Again, like I said, the Mescal in

Section 18 started off initially water free, but then started producing a large quantity of water, and it is the well that has the gas-water contact in it.

And then Little Box Number 1 in Section 7 eventually started cutting water too, but it never originally showed a gas-water contact.

Q. Mr. May, the Nearburg location in Section 12 would be an unorthodox location on a laydown unit; is that right?

A. That's what I believe, yes.

Q. And Yates and Nearburg have exchanged waivers of objection, Nearburg waiving objection to your Application in this case, and Yates waiving objection to that proposed bottomhole location if they decide to drill?

A. That's correct.

Q. Let's go to what has been marked as Yates Petroleum Corporation Exhibit Number 5, the isopach, and I'd ask you now to review this with Mr. Stogner.

A. This what I loosely call just a sand map, and it's of the Mescal sand, the lower Morrow Mescal sand only. What I've done is, this shows the thickness of a clean gamma-ray, basically, of 50 -- less -- 50 API units or less on the gamma-ray.

Again, the Yates -- proposed Yates location is shown in the west half of Section 7, along with the

proposed Nearburg location in Section 12. You can see that this is a fairly thick but narrow Morrow channel.

Note on the Little Box Number 1, down in the south half of 7, I have 66 feet there, and just not too far to the northeast, the old -- the Nadel and Gusman, or the old Cities Service well, only had five feet. And then the other well in the east half of Section 7 only had five feet. So you can see how dramatically it thins in a short distance.

The Mescal, the Yates Petroleum Mescal Number 1 down in the north half of 18, had 43 feet, and the two wells down in Section 17 had good thicknesses of over 40 feet, 40 and 50 feet. Those were the wells that were downdip and definitely wet.

Looking up to the north, this channel snakes through a couple of wells that Stevens and Tull drilled up in Section 6 of 21-22 and also Section 1 of 21-21, and then it goes on up to hit the Stevens and Tull State 36 Number 1 in Section 36 of 20 1/2-21, where they hit the Mescal sand again.

I believe that what we're seeing, from engineering data -- and engineering testimony will elaborate on this, that even though I think the Stevens and Tull wells up to the north that hit the sand are in the same sand, we feel like that they are in a different

reservoir because of the pressure differences.

I feel like between the two wells in Section 6 and Section 1, that sand pinches down far enough to where you lose reservoir quality, and it possibly may even pinch off completely. But it is the same sand, it was laid down at the same time, they do correlate.

I have a small little channel over to the west of this main one. It never gets really thick. Going off geologic data that I've seen and experience I've seen with these Morrow channels, even though that sand to the west in Section 12 and Section 13 of 21-21 does appear to be in the same stratigraphic interval, I don't think it's part of this sand.

Based on that, I feel like that this sand basically over Section 7 is only appearing in the west half. Yates feels like that the -- and it will be supported by engineering data a little bit further -- that the original well, the Little Box AOX Number 1, will not sufficiently drain the west half of Section 7. We feel like that there are going to be reserves left behind in the northwest quarter, especially since the Number 1 is already starting to cut water.

So we feel like that we need to drill the Number 2 in the northwest quarter where it covered those reserves in the northwest quarter of Section 7.

Q. Mr. May, if you are permitted to drill and simultaneously dedicate these wells, you will have a better completion in the new well; is that not correct?

A. Yes, we feel like we'll have a better completion because we feel like we'll be getting out of the water.

If you look back on the last exhibit, the structure map, you'll note -- and keeping in mind the shape of this channel, all the wet wells are down to the south and southeast.

We feel like that even though we may not be getting much higher -- in fact, we may -- Excuse me, if I can spit this out. Even though we're going to be a little bit lower structurally than the Number 1 well, the Little Box AOX Number 1, we're going to be away from the aquifer. The aquifer is to the south and southeast, and we feel like we will not encounter the aquifer. There will be a few other exhibits showing that a little bit better with the engineering data.

Q. Will your engineering witness review how continuously producing the wells will tend to dewater the reservoir, thereby increasing recovery?

A. Yes, yes.

Q. Were Exhibits 1 through 5 prepared by you, or have you reviewed them and can you testify as to their accuracy?

A. Yes, I can.

I'd like to say one more thing about this exhibit with the sand map, is that noting the Nearburg location, they -- I believe they don't have much of this reservoir on their lease.

We feel like that we are going to be in a competitive situation, possibility of a competitive situation, if they tap into a thin piece of this sand. There's a possibility that they could be tied into the reservoir, and they could be draining a lot of the reserves from underneath the northwest quarter of Section 7.

Now, the wells in the east half of Section 7 caught a piece, but a lot of those were never completed. From my experience, Yates has seen this exact thing happen in some of their own wells. We have drilled thick Morrow channels, offset them one way or another, only caught a thin piece of them, went ahead and fracture-stimulated them, and we did get into the reservoir.

So we feel like that is a possibility, and we could be in a possible drainage situation here.

Q. That would be without the Number 2 well?

A. Yes, if we do not have the Number 2 well producing from this Mescal sand.

Q. Anything else?

A. I believe that's all.

MR. CARR: At this time, Mr. Stogner, we would move the admission into evidence of Yates Exhibits 1 through 5.

EXAMINER STOGNER: Exhibits 1 through 5 will be admitted into evidence at this time.

MR. CARR: That concludes my direct examination of this witness.

EXAMINER STOGNER: Thank you, sir.

EXAMINATION

BY EXAMINER STOGNER:

Q. Well, my first question is, the Mescal sand, is that a recognized name in the geology out here, or is it a Yates nomenclature?

A. No, that's a very informal Brent May nomenclature.

Q. Brent May nomenclature. May I inquire about what stimulated that particular name?

A. That was the original -- You remember the Yates Petroleum Mescal Number 1? That's the first well that this sand was identified in, so that's why I called it the Mescal sand.

Q. Okay, I'll leave it at that.

A. There's no other background stories on the Mescal there.

Q. Good, good.

This gas-water contact, now, let's go down to the Yates well in Section 18. Is that well still producing, and what's the water cut?

A. It is producing currently in the Cisco formation. It has been abandoned from the Morrow formation. But I believe --

Q. Was it completed in the Morrow, or did you just test it and it was wet?

A. It was originally completed in the Morrow and did produce from the Morrow. I believe -- cross-section -- It made approximately 2 BCF in gas from the Morrow and 83,000 barrels of water.

I might also note that that -- those cumulative numbers are for the whole Morrow, because there's another zone that was opened up. But most of that -- the majority of that production was from Mescal sand, because the second sand that was perforated higher up was not as good.

Q. Okay. So then let's go to the other well in the south part of Section 7, and you're starting to get some coning effect? Is that what I'm understanding?

A. I believe so, because originally, looking at the logs on that well and looking at the structure, we were higher than the Mescal, especially higher than the identified gas-water contact.

We looked at the resistivity log; it did not show

a gas-water contact.

It also originally started off water-free, and it was perforated the whole interval of the sand, and the Little Box Number 1 was perforated, whereas in the Mescal we only perforated the upper part of the sand.

Q. Are we seeing this water encroachment coming in from the south, following this drain -- or the old streambed, I guess we would call it, or do you see it at a particular contour, everything below a certain contour? What's the nature of this gas-water contact?

A. Originally, it was at a particular contour, probably -- Let's see, it was around a minus 3675, off the top of my head. But of course I think it has encroached some, and the engineering data will talk about that a little bit more.

EXAMINATION

BY MR. ASHLEY:

Q. Mr. May, I think you've already said this before, but I need some more clarification. In the southeast quarter of Section 7, what is the current status of that well?

A. I believe that well -- That well never produced, if I remember right, never produced out of the Morrow, I believe; it only produced out of the Cisco.

And it may be currently plugged right now. I

could be wrong on that; it still could be producing in the Cisco.

But it was -- I feel very confident it was a Cisco producer and did not produce out of the Morrow, at least not out of this Mescal sand.

Q. Okay. But the land maps mention a Morrow discovery on there, and I didn't know if that was --

A. That --

Q. -- an error or --

A. -- may have -- There's another sand in the Morrow clastics, and it may have been out of that one.

Q. Okay. But right now it's either in the Cisco or plugged?

A. Yes, that's correct.

Q. Okay. What about the well in the southeast quarter of Section 12, 21-21?

A. I believe that well was also a Cisco producer.

Q. And what's the status of that well?

A. I'm not sure off the top of my head.

MR. ASHLEY: Okay.

EXAMINER STOGNER: If there's no other questions, Mr. May may be excused. We might have some additional questions --

MR. CARR: He'll be available, and at this time we'll call Dave Pearson.

EXAMINER STOGNER: Mr. Carr?

DAVID PEARSON,

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 Pearson.

Q. And where do you reside?

A. Artesia, New Mexico.

Q. By whom are you employed?

A. Yates Petroleum.

Q. And what is your position with Yates Petroleum?

A. I'm a reservoir engineer.

Q. Mr. Pearson, have you previously testified before this Division?

A. Yes.

Q. At the time of that testimony, were your credentials as an expert in petroleum engineering accepted and made a matter of record?

A. Yes.

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

A. Yes, I am.

Q. Have you made an engineering study of the area

which is the subject of this Application?

A. Yes, I have.

Q. Are you prepared to share the results of that study with Mr. Stogner?

A. Yes.

MR. CARR: Are Mr. Pearson's qualifications acceptable?

EXAMINER STOGNER: They are.

Q. (By Mr. Carr) Initially, could you review for Mr. Stogner what Yates' plans are for the future development of this particular spacing unit?

A. Yes, Yates plans to drill the -- or, in fact, is actually drilling the Little Box Canyon AOX Federal Well Number 2 and complete it in the lower Morrow Mescal sand.

If we're permitted to simultaneously dedicate both wells on a unit, the AOX Number 2 and the AOX Number 1, we will concurrently continuously produce a new well and the Little Box Canyon AOX Number 1 to depletion.

The Little Box AOX Number 1 right now is producing substantial volumes of water, and it's our intent, if the simultaneous dedication is granted, to put the well on artificial lift and increase -- roughly double the volume that we're producing today, in an effort to protect the AOX Number 2 from the aquifer encroachment.

My studies have indicated that continuing to

produce the AOX Number 1 in this manner will significantly lower the pressure in the aquifer and the invaded portion of the original gas-saturated reservoir, and reduce -- or improve the recovery efficiency for the sand as a whole. We estimate the additional recovery is going to be about 400 or 500 million cubic feet. And if we're not allowed to produce the AOX Number 1 to dewater the aquifer, we probably will lose all those reserves.

Q. And these are reserves that actually will be lost? This isn't just deferring this production to a later date?

A. That's correct. The trapped gas saturation of these reserves will be lost because of the increased pressure in the trapped gas saturation behind the flood front.

Q. Let's go to Yates Exhibit Number 6. Would you identify and review that, please?

A. Yes, Yates Exhibit Number 6 is entitled the "Little Box Canyon 'Mescal Sand' Pressure History". What it is, is a simple pressure-versus-time plot, pressure on the vertical axis, the years elapsed time on the horizontal axis.

In addition to the pressure points which were measured both -- The pressure points are shown as the diamonds. They were measured in both the Mescal and Little

Box Canyon Number 1 well.

And along the bottom of the chart you'll see the periods of time that the Mescal well was on production in the Mescal sand, and the period of time that the Little Box Canyon AOX Number 1 was on production, as it still is, in the Mescal sand.

The primary point from the exhibit is to show the decline in pressure, is to try to show the continuity between the Mescal and the Little Box Canyon Number 1, as evidenced by the decline in pressure in the Little Box Canyon while it was shut in awaiting permission to produce into the pipeline, as a consequence of the gas production in the Mescal.

The Mescal produced about 1.2 BCF of gas out of the lower -- or the Mescal sand, before the onset of water production, and before it was possible to bring -- We had difficulty getting pipeline hookup from El Paso Natural Gas, so Little Box Canyon Number 1 set there for three or four years, perforated basically as an observation well.

And what we saw was about 800 p.s.i. pressure drawdown for Mescal production before we brought the Little Box Canyon Number 1 on production.

One of the other things that's particularly significant on this plot is, you'll note a pressure point late in the year, in 1984. It was actually measured 10-2

of 1984, same day we measured pressures in the Mescal and Little Box Canyon, and they were within 3 p.s.i. of each other.

The other point I should have made at the beginning is that all these pressures were corrected to a common datum.

Q. Let's go to Exhibit Number 7, the Mescal log analysis. Again, would you review that for the Examiner?

A. Yes, Exhibit Number 7 is just an output from a commercially available log-analysis program. What you'll find is, in track one, the gamma-ray curve with the net sand shaded in yellow. Track three is the porosity curve with the corrected porosity for the sandstone on the curve, for sandstone, matrix on the track. The shading in red is porosity above eight percent.

What you'll draw your attention in particular to is the Morrow sand that we call the Mescal sand, from 8128 to approximately 8170. You'll see the good porosity down through the unit.

The right-hand track, or track four, is an Archie saturation display. There's nothing exotic about the Archie calculation. We use standard parameters of m and n 1 -- or m and n of 2, and we have water analysis that we use for the resistivity, .07 for the water -- formation water resistivity.

The salient point of the display is to identify the gas-water contact, the original gas-water contact, as it was when this well was logged in late 1982, at about 81-- arguably 8150 to 8152. This corresponds to a subsea depth, minus 3720.

Q. Now, Mr. May presented a stratigraphic cross-section. Your Exhibit 8 is a structural cross-section. Would you go to that and explain what it shows?

A. All right. Exhibit 8 is cross-section B-B'. It runs from left to right -- It south to north, from left to right. It shows two of the wells that were shown on Mr. May's stratigraphic cross-section, the Yates Petroleum SE Fed Number 1 and the Yates Petroleum Little Box Canyon AOX Fed Number 1, and it shows a stick section for our projected tops and thickness of the Yates Petroleum Little Box Canyon AOX Number 2, and this represents all of the wells in the southern -- or all the wells south of Township 20 1/2-21 that have the Mescal sand present in commercial thicknesses in them.

The left-hand well, Yates Petroleum Mescal Fed 1, shows the original gas-water contact at minus 3720. The structural is datum'd on that contact. You'll see there's about five feet of perforations in that well at the top of the sand. The well made -- As I stated somewhat earlier, the well made about 1.1 BCF of gas from this sand before it

began to cut water.

And then as Brent indicated, or Mr. May indicated in his testimony, we produced about 90,000 barrels of water from the well before we shut it in, set a plug at right about 8100 feet, and completed in the upper Morrow sand, which is not shaded on this cross-section, but you can see the perforations there at about 8000. It made about 600 million cubic feet of gas from that upper Morrow sand.

The cumulative production, then, from the lower Morrow sand, was about 1.7 BCF, with the additional production to get you to 2.2, coming from the upper Morrow sand.

The upper Morrow was abandoned, and the well was completed -- abandoned by setting a plug, and the well is now completed in the Cisco and has produced from the Cisco approximately 200 million cubic feet of gas.

The well to the right is the Little Box Canyon AOX Fed Number 1, the existing well in the southwest quarter of Section 7, and currently the only well in the area producing from the lower Morrow Mescal sand, with the exception of the new Sweet Thing well to the north.

Q. Can you estimate for us the extent of the updip movement of the aquifer?

A. Yes. One of the other points that I wanted to make, on the cross-section you'll see that we had

perforated the entire sand interval in the AOX Fed Number 1.

After the well had produced about 3.5 BCF of gas, the water had moved -- the aquifer had begun to encroach significantly, and the water had moved updip about 60 feet and areally, or laterally, about 2000 feet from the Mescal location over to the Little Box AOX Number 1.

And we produced -- 370? I think about 370,000 barrels of water out of this well to date. As Brent testified earlier, it currently produces about 500 MCF a day and about 220 barrels of water, and that's very near the point at which it will cease to -- is going to load up and die. We're not --

Q. Sixty feet updip and 2000 laterally; is that the movement you see?

A. I think so.

Q. Okay. Let's go to Exhibit Number 9, the Mescal well production plot.

A. All right. Exhibit Number 9 is an output from *Dwight's*. It's a simple production plot. The production rates are shown logarithmically on the left and right axes. The left axis shows the oil or condensate production rate in barrels per day and the water production rate in barrels per day. The right axis shows the gas production rate in MMCF per day, with time on the X axis.

Salient points from this plot would be the initial -- The initial rate of production from Mescal was approximately 2 million a day. It produced for about a year and a half before the water encroachment moved up some 15 to 20 feet and began to make a significant amount of water, mid-year 1984.

The other particularly important point to make from the plot is to note that the water production ceased in early 1987 when we recompleted the well from the lower Morrow sand to one of the upper Morrow -- to the upper Morrow sand that you can see at about 8000 feet on the cross-section.

Earlier you had asked Brent what the water cut had gone to in the well. The peak water production rate was about 300 barrels of water a day, when the well was lifting about 700 MCF -- it was using about 700 MCF of gas a day to lift that.

The other thing I might comment on here is that the water-hauling cost out there has been very significant. It's not located near a place where we can dispose of the water, and up until -- or even today, we still are trucking the water out, and it has had a pretty significant impact on the economics of producing these to depletion. We're currently in the process of laying a new gas line and a water line out there that will carry the water to a

disposal well and materially reduce the disposal costs.

Q. Mr. Pearson, let's now go to the production plot on the Little Box Canyon AOX Number 1 well, which is Exhibit 10. Would you review that, please?

A. This is the same type of production plot on the Little Box Canyon AOX Number 1. Water and condensate or oil production shown in barrels per day on the left axis, gas production shown in MCF per day on the right-hand axis, with time on the X axis.

Important points to note from this plot: The onset of production in Little Box Canyon Number 1 was early in 1986. There was a slight overlap in the production between the Mescal and Little Box Number 1.

You'll note that in 1986 and early in 1987, Mescal was producing significant volumes of water while it was on production. Little Box AOX came on with no initial water production, even though it was perforated in the entire sand interval. From that we would conclude that the aquifer had not moved updip into the lower part of the perforations in AOX Number 1 as of early 1986.

However, by late 1987 the well began to produce water and was producing at a high water -- or a significant amount of water by early 1988, indicating to us that the -- both a lateral and vertical movement of the aquifer into the lower perforations in AOX Number 1.

From there on, you can see the steady decline in the gas production rate. The slight increase in 1992 is due to a significant reduction in line pressure out there. The water cut, however, has continued to increase through the production history of the well, and finally stabilized in late 1993 at approximately 200 barrels a day, at which it -- where it's remained since then.

Today the well produces between 500 and 600 MCF a day in the compression, and approximately 200 or 220 barrels of water a day. It varies a little, month to month.

Q. Mr. Pearson, Exhibits 11 and 12 are both P/Z plots on the Mescal sand. Let's go first to Exhibit Number 11, and we'll review what that exhibit shows, and then we'll go to 12 and review the additional information on this plot. So let's go to Exhibit Number 11.

A. All right. Exhibit Number 11 is the -- a P/Z plot for the combined data from Mescal and Little Box Canyon Number 1. The Y axis is pressure divided by supercompressibility factor, X axis is the cumulative production of the well, of the two wells together, in MCF. And that cumulative production includes only the lower Morrow production; it doesn't include the upper Morrow production for Mescal.

The diamonds are the actual observed pressure

points. The upper line that you see running through those diamonds is the history-match simulation of the reservoir. The lower line that you see departs from the diamonds right there after about 2 BCF have been produced, is the simulation if there weren't an aquifer attached to the reservoir.

Q. Now let's go to Exhibit 12.

A. Exhibit 12 is the same basic data, with the addition out at about 7.5 BCF production of two new scenarios, the simulation of two new scenarios.

The slightly heavier line -- I'm sorry I don't have them in color. The slightly heavier line that you see there is the extension of the current operating practices, assuming that we drill Little Box AOX Number 2, shut in Little Box AOX Number 1 -- actually, we drill and find the sand that we're expecting to find in AOX Number 2, shut in the Number 1 and produce the reservoir to an average P/Z abandonment pressure of about 600.

The line that departs at about 7.5 BCF from the history-match simulation including the aquifer and joins the simulation without the aquifer at zero P/Z point is the simulation of what happens if you increase the water production rate at AOX Number 1, in effect stopping the water encroachment and, in fact, producing the aquifer faster than the aquifer is able to put it into the upper

part of the reservoir.

What that will do is result in a significantly lower average abandonment pressure for the reservoir and produce approximately 400 million cubic feet, between 400 and 500 million cubic feet, of additional reserves as a consequence of dewatering the sand.

It's shown with the two horizontal lines. The upper of the two on the right-hand side is the abandonment P/Z, the average P/Z for the reservoir if you don't dewater it but produce out of Little Box 2. The lower of the two lines is the much lower 400 -- if you will, 400 p.s.i. average abandonment pressure at Little Box 2 with dewatering.

Q. Okay. When we look at this exhibit and we look at the upper curve and we go to the abandonment P/Z of the Little Box 2 without dewatering, what is the recovery you're projecting at the time of abandonment from that well?

A. The total recovery from the reservoir, including the Mescal, the Little Box 1 and the Little Box 2 production, would be 8.3 BCF.

Q. All right, 8.3 BCF without dewatering. Then if you dewater the reservoir by accelerating the water production in the Little Box Canyon Number 1, what is the total reservoir recovery when you hit the abandonment with

the dewatering?

A. 8.7 BCF.

Q. And that is additional recovery from the reservoir by virtue of concurrently producing the wells?

A. That's correct.

Q. If you produce them on an alternating basis, would you achieve this effect?

A. No, you won't.

Q. So that is the circumstance by which -- or that you are offering in support of the request to concurrently produce the Number 1 during its remaining life?

A. Yeah. The unique circumstance here that requires both wells to be on production is, you have to have a downdip well that's behind the flood front so that you can reduce the pressure in the aquifer and therefore the pressure in the trapped-gas saturation behind the aquifer flood front.

Q. Mr. Pearson, what will be the impact on Yates if the Application is denied?

A. If the Application is denied, we will not be able to produce the additional 400 to 500 MCF of gas, 400 to 500 million cubic feet of gas, and I believe our correlative rights would be impaired.

Q. If both wells are allowed to produce from the Mescal sand, will Yates be given an opportunity to produce

remaining reserves, an opportunity that otherwise would be lost?

A. Yes. If we can produce both of them simultaneously, we'll produce significant reserves, about 450 million cubic feet, that we wouldn't be able to produce if we produce either one independently or were forced to delay -- produce one until it's depleted and then produce the second one.

Q. Will the correlative rights of any other operator in the pool be impaired by the approval of this Application?

A. No, we don't believe so. On the basis of Mr. May's mapping and testimony, we feel like the sand underlies only the western half of the proration unit, and in addition to that we have received a waiver from Nearburg that states that they're comfortable with our -- that they won't contest this.

Q. Your testimony is that if the Application is denied, Yates will lose the opportunity to produce 400,000 to 500,000 million cubic feet of gas; is that right?

A. That's correct, we will lose the opportunity to produce between 400 and 500 million cubic feet.

Q. And will those reserves ultimately be wasted and never recovered?

A. That's correct.

Q. Were Exhibits 6 through 12 prepared by you or compiled under your direction?

A. Yes.

MR. CARR: At this time we would move the admission into evidence of Yates Petroleum Corporation Exhibits 6 through 12.

EXAMINER STOGNER: Exhibits 6 through 12 will be admitted into evidence.

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

EXAMINATION

BY EXAMINER STOGNER:

Q. Mr. Pearson, this 400,000 additional -- million cubic feet of gas, is that going to be economical for the drilling of this second well, stand-alone?

A. No. The second well we're drilling on a stand-alone basis simply because we can get away -- there will be an additional -- Let me rephrase it for you.

We believe the abandonment point of the reservoir with the existing well now is going to be about 100 p.s.i. lower than where we are today, lose the ability to make the well flow.

The second well, if you'll note carefully on the structural cross-section, the top will probably be not higher or equivalent to what's there in Fed Number 1 right

now. But if you note, the sand we're expecting to be somewhat thinner, and the base of the sand should be updip from the existing perforations now.

In addition, we'll not perforate the entire sand, perforate only the upper portion.

The combination of having the additional vertical separation from where we believe the current gas-water contact is in Little Box AOX Number 1, and the areal separation, will allow us to reduce the pressure in the reservoir another 300 pounds and produce reserves that will be sufficient to make it economical. The well will be economical on a stand-alone basis.

If -- I'd estimate about 7.8 BCF if we did not drill the Little Box Canyon Number 2, and I believe we'll recover about 8.3 BCF if we do drill and complete. It's somewhat marginal, but economical nonetheless.

Q. Is there a secondary zone for this proposed well?

A. Yes, there is. Our hope is that we'll encounter the upper Morrow sand that has been observed in most of the Morrow wells in the area. The Little Box Canyon Number 1 has a secondary Morrow zone in the upper Morrow. Mescal had an upper Morrow completion. The OXY-operated well -- Or at the time it was operated by OXY; it's currently operated by Nadel and Gusman, well in the southeast quarter of Section 7 had a Morrow sand that made -- had an upper

Morrow sand that made about 400 million cubic feet.

Another secondary objective would be the Cisco/Canyon, but we don't have the rights to that, on the west half of Section 7.

Q. The Little Box Canyon Federal Number 1, now, its present completion is down there only in the Mescal, right?

A. That's correct.

Q. Does it have potential in the upper Morrow?

A. It does. If you'll look on the structural cross-section, you'll see a sand that begins at about 7938 and runs down to about 7960 or -62. There are three curves on that. The left-hand-most curve is the PEF curve, and I'm sorry that I didn't shade it but there's a -- the top of the sand would be about 7950, and there's about ten feet of an upper Morrow sand there that has not been completed and produced yet.

Q. Are you proposing that if this Application is approved that not only the Mescal sand be simultaneously dedicated, but the rest of the Morrow?

A. It's not our specific objective, but we -- because it's not separated into two pools, I would assume that that would be the consequence of it. Our particular objective is just to be able to produce water, produce the lower Morrow portion of AOX Number 1 simultaneously with producing the lower Morrow sand in AOX Number 2.

It would -- We won't complete the upper Morrow in the AOX Number 1 because the pressure differential between the two would negatively impact. It wouldn't be able to lift water out of the lower Mescal sand.

Q. Okay, try and go back to the Mescal here and make sure I understand --

A. Okay.

Q. -- what the proposal -- or what is going on here.

A. Okay.

Q. The perforations in the Number 1 well would not change?

A. In the -- ?

Q. In the Mescal. I'm just strictly talking about the Mescal right now.

A. Okay. The nomenclature is confusing. In the Mescal sand or the Mescal well?

Q. I'm talking about the Little Box Canyon AOX Federal Number 1 --

A. Okay.

Q. -- you've got the perforated interval, and I'm referring to Exhibit Number 8. You've essentially got that whole sand perforated?

A. Perforated, that's correct.

Q. Okay. Could the same dewatering process occur if the bottom portion was squeezed and only the upper portions

be perforated, or remain open?

A. In principle, I think it could. It would depend somewhat on whether or not you could re-establish good communication with the sand after you had squeezed it. And then on exactly where the contact is.

At this point we can't identify conclusively where the current gas-water contact is. We know that it has run updip far enough to be in the bottom five or ten feet of the perforations, but we don't have a definitive handle on where the contact is in the sand there.

We're very concerned. We looked at the alternative -- Rather than drilling the updip well or the attic-type well, we looked at the alternative of simply squeezing or reperforating maybe the top five feet of the sand. We felt like the productivity would be satisfactory.

We were concerned about two things. One, that mechanically when you go in and you squeeze you don't put a very small amount -- you just can't put a very small amount of cement in there. So we were concerned that we might have difficulty re-establishing communication after the cement job.

The other point would be that the potential for coning exists. We had a pretty good experience in Mescal -- in the original discovery well, the Mescal SE. But it -- You would not recover all the gas, irregardless

of dewatering, that drilling the attic location that you were trying to with AOX Number 2 will recover.

Q. And of course the other portion on this is, shut the Federal Number 1, the Little Box Canyon Number 1, down, and then just produce from your proposed new well. I'm on the verge of seeing this, but I'm not quite getting there. Why wouldn't that accomplish the same thing, just shut the Number 1 in?

A. Because what you're trying to do is reduce the pressure. The whole point of it is to reduce the pressure in the trapped gas saturation behind the flood front. So you've got to reduce the pressure and the vertical height of the aquifer, to the degree that you can.

The original contact was at about 3520, and we now have about 60 to 80 feet of the zone that has been swept and has a residual gas saturation of maybe 35 percent. And that residual gas saturation is in pressure equilibrium with the water around it.

And if you can, in effect, cause the water -- the current gas-water contact to go back down -- we have a fairly good idea -- one of the conclusions you can draw from the P/Z plot is, we have a fairly good idea of the rate of water influx. And if we can take water out faster than that, which mechanically we can do pretty easily, then we'll cause that flood front to retreat a little bit.

And that trapped gas saturation, both because the reduction of pressure will get higher and become mobile again, and also to a lesser degree because you can probably cause the current gas-water contact or the position of that flood front to go back downdip a little bit, you'll allow that gas to be produced either through Little Box AOX Number 1 or through Number 2. You get gravity segregation, and the gas will move updip into one of the two wells.

Q. So when you drill into this Mescal sand with the Number 2 well, you're expecting to see the same pressure at this point; is that correct?

A. Correct. We would expect to see it at 950 or 1000 pounds, which is the pressure we just recently measured down in AOX Number 1.

Q. Now, with that second well in there, are you going to be able to -- Okay, with that second well in there, what kind of a pressure drop are you anticipating?

A. As you're producing the well?

Q. Yes, as you're producing both wells.

A. As we're producing both wells, we would anticipate being able to draw the average pressure above the original gas-water contact down to about 400 pounds.

If we're not able to produce both wells because of the much greater density of the water, we expect the average pressure above the original gas-water contact at

abandonment of the reservoir to be about 600 to 700 pounds, probably closer to 650 or 700.

Q. Okay, so we bring that down to 400 pounds --

A. -- and that's what gives you the additional recovery.

Q. Okay. Is that going to be sufficient pressure to pull the water up with the Number 1 well, or are you going to have to have --

A. No, we'll have to use artificial lift to lift that. That's the real key, is that we can put some type of artificial lift on the well.

Q. Now, is artificial lift in there now?

A. No.

Q. Can this be done utilizing artificial lift on the Mescal Federal Number 1 at a lower point?

A. It could. We would probably need to go in and reperforate the well. There are a number of concerns. The wellbore has been perforated in a couple places, and we'd have to go back and squeeze those. There's some mechanical complexity.

My principal concern would be that the working interests are different and the royalty interest owners are different down at that well than what you have under the proration unit.

And it would be mechanically -- The other factor

is that it would be mechanically quite a bit simpler for us just to use the existing well. It's not impossible, though. There are just more complications associated with it.

Q. Okay, if we're successful in getting the pressure down to 400, between that 500- and 400-pound range, are you anticipating either or both of these wells at this time would be perforated in that upper zone, in the upper Morrow?

A. We would not be able to complete in the upper Morrow zone until after we had abandoned the lower Morrow zone, because of the pressure differential.

Q. Okay.

A. And we couldn't -- we would just see a lot of -- It would be, I think, not a good idea; we'd see a lot of crossflow.

Q. That's where I was leading up to --

A. Yeah.

Q. -- on that crossflow.

What kind of pressures are you seeing in that upper Morrow at this time?

A. I don't know, because we don't have a well currently completed there. The pressures -- An estimate of the abandonment pressure in Mescal would be probably 1100 pounds or 1000 pounds. At the time it was abandoned, we

didn't have the compression out there, and the line pressures were somewhat higher.

The original pressure should be about 3650 or something in that ballpark.

Q. And how would this affect if all of a sudden crossflow, you had these different pressures, comminglings, say, with each other. What would occur?

A. It would depend on the volume of gas that was in the upper sand. The pressure in the lower -- If you did commingle them, the pressure in the lower sand should go up.

Whether it would be enough that you would notice it if -- You've got an original gas in place in the lower sand of about 9.5 BCF, maybe a skosh more. And so you put, you know, half a BCF or a BCF back in that tank, and it's not going to be a big pressure change.

Q. Have we seen anywhere else out in Eddy County where you're having to dewater, or this type of production, or this type of setup is occurring, is occurring now?

A. I'm not familiar with anyplace in Eddy County where it's been done. It's very common in the Gulf Coast of Texas where they have gas reservoirs on aquifers.

I think the reason it's not done out here is, most of the production is not -- the continuity of the sand itself is not sufficient to have a fairly large -- an

aquifer that gives you much meaningful pressure support, and this is a little bit of a unique case in that sense.

Q. What kind of a lifting cost are you looking at?

A. I don't have the exact number, but we're guessing about 12 to 15 cents a barrel. We'll probably use the leased gas itself to run an engine and run a pumping unit from that engine, from the Big Ajax.

Q. And what would be the deposition of this water after you get it up?

A. It was going to go -- it will go into -- We run a disposal system at Dagger Draw, and it's going to go -- most of it will be gravity-fed downhill; we've got one little bit we have to pump it over -- and it will go into -- I believe it's Devonian wells that the disposal system goes into out there.

We've had some interest expressed from the offset operators in also disposing of some of their water. There's -- A couple of the Cisco completions produce some water.

Q. Are you two collaborating on an SPE paper at this point? Don't answer that.

A. It's actually pretty common engineering practice in the Gulf Coast.

Q. And the coal gas for that matter.

How concerned are you about this Nearburg

location with -- in essence, to the -- just the Mescal, we're looking at the Mescal --

A. Yes.

Q. -- sand.

A. If they drill it, succeed in completing it in a timely fashion, find the sand, which Brent -- we think is pretty unlikely, but manage to tie into the sand, it's going to very negatively impact everybody's economics because there's just a finite amount of gas left to come out of the reservoir.

Most of the gas lies under our proration unit, and what you're going to do is, you're going to drill -- you're going to split it in half, roughly, depending on how productive their well is. But certainly they could go and frac, and I think they'd have a high likelihood of making a fairly productive completion, even if they find a thin amount of sand.

So the short answer would be, I'm very concerned.

Q. Wouldn't that kind of serve to help -- Looking at just the technical aspects, wouldn't that serve to help this dewatering process?

A. Yes. In fact, the two things you're trying to do, there's two ways to fight the aquifer. One, you can take the water out of the aquifer itself, kind of a brute-force approach. The other one is to increase the total

withdrawal rate out of the reservoir. The aquifer only moves in at a certain rate, as a function of the amount of pressure drawdown.

From the overall reserve recovery standpoint, you'd be somewhat better off having two wells up there than one. The down side would be that neither of the wells would be as economically attractive for the companies that drilled them. The capital efficiency would be worse.

Q. Is this a widespread -- Well, obviously not, not in this -- such a little stringer. What I was trying to get to, would it be better just to change the pool rules out here to allow everybody a second well, as opposed to looking to this one little area, or --

A. My personal opinion is that it needs to be looked at on a case-by-case basis. If you -- I could -- You could draw a scenario where, yes, it would be -- you could generalize about them. If you have a sand that has an aquifer that someone can show is active, moving, then yes, it would be better to be able to have multiple wells per proration unit.

You just have to set up some hurdle criteria, you know, for showing that there's an aquifer and that the aquifer is encroaching upon the existing gas.

Again, my personal experience is, there's not that many Morrow wells with active aquifers --

Q. Okay.

A. -- that this is unique in that respect.

Q. When would Yates be ready to set a pump out there on this Number 1 well?

A. Literally, it just depends -- We're surveying for the water line and the gas line right now. We're not going to physically build the gas line until we have completed the AOX Number 2, but we expect within 60 days of the time we have it completed to have the lines in and as soon as -- thereafter, we can get the equipment.

Year end would be a good guess. I made a short answer long.

Q. Now, Yates is already drilling this well?

A. That well, correct.

Q. Okay. I'm assuming that it's going to go down, regardless of what happens, down into the Mescal sand.

A. Correct.

Q. What's the consequences if this Application is not approved?

A. If this Application is not approved, we'll abandon -- Assuming that we make a completion in AOX Number 2 that doesn't lift very much water, we'll abandon AOX Number 1 temporarily and produce AOX Number 2 until depletion, and at that point we'll have to make a decision about whether to complete AOX Number 1 in the upper Morrow

sand, or assuming that there are some upper Morrow sands present in AOX Number 2, which of those two we would like to complete.

Q. What's the criteria of it being a successful well, that Number 2 well?

A. In an economic sense?

Q. In an economical sense or a technical sense. What are you going to have to see for this dewatering process to occur?

A. In a technical sense what we would need to see would be basically encountering the sand at the pressure we expect, at about 950 or 980 ponds, and that we would not have a significant amount of water present in the sand at that location.

If we've either misjudged the structure or the thickness of the thing and we turn out to have a significant amount of water present there, we might go the opposite direction and use that as the dewatering well and produce AOX Number 1.

The trick is just to find one that's down in that contact and one that you can make essentially a water-free, gas-producing completion.

EXAMINER STOGNER: Any other questions?

THE WITNESS: I have some data on the production for the questions you had asked Brent earlier that Brent

didn't have in his hand, and if some of those you're still interested in -- I think maybe they were -- I didn't write down which ones you were asking about, but...

EXAMINATION

BY MR. ASHLEY:

Q. The Morrow -- or excuse me, the well in the southeast quarter of Section 7?

A. It produced about 400 million cubic feet from the upper Morrow and about 300 million cubic feet from the Penn carbonates Cisco completion, and I believe that it's still on production there, although the rate was very low.

It's just changed hands, and they were going to install compression and do all the little things that you normally do when you buy something new to try to get the rate up.

Q. So it's producing in the Penn right now?

A. It's producing in the Cisco, the upper Penn carbonates.

Q. And the other one was in the southeast quarter of 12 -- Section 12, 21-21?

A. Okay, southeast quarter of Section 12, 21-21, it was -- It has no cumulative production, to my knowledge. It was Morrow-tested, it was wet over there. Or if it was, it was insignificant. I think anything less than 100 million cubic feet I didn't put on my maps.

Q. Not currently producing anything?

A. It's not currently producing at all. I believe it's plugged.

Q. Okay.

A. I'm not certain about it being plugged, but I believe it's plugged.

Q. That brings up one other question I had. Where do you estimate the current gas-water contact to be?

A. It's a difficult question, but I -- My current estimate would be somewhere between 81- -- on the Yates Fed AOX Number 1, I believe it's somewhere between 8100 and 8110, and that should be about 3650 subsea.

The difficulty comes in understanding -- There's just no really good way to get that right today. It's too close to the bottom of the well for me to be able to get the right logging tools across it.

MR. ASHLEY: I don't have any other questions.

EXAMINER STOGNER: I have a lot, but more curiosity than anything so I'll not ask them.

Any other questions of this witness or Mr. May?

MR. CARR: Nothing further of this witness, Mr. Stogner.

I would offer my notice and affidavit confirming that notice was provided to all operators identified on Exhibit 2 in accordance with OCD rules.

And that concludes our presentation in this case.

EXAMINER STOGNER: Then this matter will be taken under advisement. Well, 024.

Thank you, Mr. Carr.

(Thereupon, these proceedings were concluded at 11:45 a.m.)

* * *

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 12024, heard by me on 6 August 1998.

, 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 August 29th, 1998.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 1998