

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. 12,381

APPLICATION OF DAVID H. ARRINGTON OIL)
 AND GAS, INC., FOR AN UNORTHODOX GAS)
 WELL LOCATION, LEA COUNTY, NEW MEXICO)

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

May 4th, 2000

Santa Fe, New Mexico

CO MAY 23 AM 5:30

OIL CONSERVATION DIV

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH, Hearing Examiner, on Thursday, May 4th, 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.

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 Examiner Hearing
 CASE NO. 12,381

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A P P E A R A N C E S

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MILLER, STRATVERT and TORGERSON, P.A.
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By: J. SCOTT HALL

* * *

1 WHEREUPON, the following proceedings were had at
2 4:52 p.m.:

3 EXAMINER CATANACH: At this time we'll call Case
4 12,381, the Application of David H. Arrington Oil and Gas,
5 Inc., for an unorthodox gas well location, Lea County, New
6 Mexico.

7 Call for appearances in this case.

8 MR. BRUCE: Mr. Examiner, Jim Bruce of Santa Fe,
9 representing the Applicant. I have two witnesses to be
10 sworn.

11 EXAMINER CATANACH: Additional appearances?

12 MR. HALL: Scott Hall, Miller Stratvert
13 Torgerson, Santa Fe, appearing on behalf of Merit Energy
14 Company and Permian Resources, Inc., with one witness.

15 EXAMINER CATANACH: Will the witnesses please
16 stand to be sworn in?

17 (Thereupon, the witnesses were sworn.)

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

21 DIRECT EXAMINATION

22 BY MR. BRUCE:

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

24 A. Dale Douglas.

25 Q. What is your occupation?

1 A. I'm a petroleum landman.

2 Q. What is your relationship to Arrington in this
3 case?

4 A. I perform contract land services for Arrington.

5 Q. Have you previously testified before the
6 Division?

7 A. Yes, sir.

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

10 A. Yes, sir.

11 Q. And are you familiar with the land matters
12 involved in this case?

13 A. Yes, sir.

14 MR. BRUCE: Mr. Examiner, I tender Mr. Douglas as
15 an expert petroleum landman.

16 EXAMINER CATANACH: Any objection?

17 MR. HALL: No objection.

18 EXAMINER CATANACH: Mr. Douglas is so qualified.

19 Q. (By Mr. Bruce) Mr. Douglas, could you briefly
20 identify Exhibit 1 and tell the Examiner the location of
21 the well we're seeking approval for?

22 A. Yes, sir, Exhibit 1 is a land plat which depicts
23 the area of where the property is located. It's in
24 Township 16 South, 35 East. The colored tract, being the
25 east half of 14, is the proposed 320-acre unit for this

1 well, which is proposed to be drilled at a location 330
2 feet out of the northeast corner.

3 Q. Okay. Now, Yates is the offset to the north, is
4 it not?

5 A. That's correct.

6 Q. And they have an unorthodox well in the southeast
7 southeast of Section 11 which our next witness will
8 discuss; is that correct?

9 A. That's correct.

10 Q. What is Exhibit 2 and how does it relate to this
11 case?

12 A. Exhibit 2 is a copy of a letter, a stipulation
13 and waiver of objection, that Arrington entered into with
14 Yates regarding the drilling of their well, which is at a
15 mirror location to the one proposed by Arrington.

16 Q. And it provides that, what, Arrington waived
17 objection, and in return Yates will not object to this
18 location, and it provides for penalties; is that correct?

19 A. That's correct.

20 Q. In combination with Exhibit 1, does Exhibit 3
21 list the offset operators or lessees to your proposed well?

22 A. Yes, it does.

23 Q. One thing for the Examiner, Section 13 listed as
24 Merit Energy Company, Permian Resources, our opponent here
25 today, is acquiring Merit's interest, to the best of your

1 knowledge?

2 A. That's our understanding.

3 Q. Was notice of this Application given to all of
4 the offset interest owners?

5 A. Yes, sir, it was.

6 Q. And is Exhibit 4 my affidavit of notice?

7 A. Yes, it is.

8 Q. And what is Exhibit 5?

9 A. Exhibit 5 is a waiver letter that we obtained
10 from Chesapeake Operating.

11 Q. One of the offsets?

12 A. One of the offsetting operators, which waives
13 objection to this proposed location.

14 Q. And then one final question, what is the -- This
15 well is being drilled up into the Mississippian, I believe?

16 A. It is Mississippian, yes.

17 Q. Okay.

18 A. 12,700 feet.

19 Q. Okay. I believe that's it for Mr. Douglas.

20 Mr. Douglas, were Exhibits 1 through 5 prepared
21 by you, under your direction or compiled from Arrington
22 company business records?

23 A. Yes, they were.

24 Q. And in your opinion, is the granting of this
25 Application in the interests of conservation and the

1 prevention of waste?

2 A. Yes, sir, it is.

3 MR. BRUCE: Mr. Examiner, I tender the admission
4 of Exhibits 1 through 5.

5 MR. HALL: No objection.

6 EXAMINER CATANACH: Exhibits 1 through 5 will be
7 admitted as evidence.

8 Mr. Hall?

9 CROSS-EXAMINATION

10 BY MR. HALL:

11 Q. Mr. Douglas, to your knowledge is there any
12 surface obstruction or topographical consideration that
13 prevents the drilling of this well at a standard location?

14 A. From the surface standpoint, none to my
15 knowledge.

16 Q. Is there any other special circumstance that, in
17 your view, justifies the unorthodox location?

18 A. Yes, it's based on geological and geophysical
19 evidence.

20 Q. Purely geological, then; is that correct?

21 A. And geophysical, yes.

22 MR. HALL: Nothing further.

23 EXAMINATION

24 BY EXAMINER CATANACH:

25 Q. This is a mirror to a Yates well in Section 11;

1 is that correct?

2 A. That is correct.

3 Q. And that well has been penalized?

4 A. Yes, it has, it's been penalized by one-half,
5 which was the percentage of encroachment to the lease line.

6 Q. Fifty-percent penalty, okay.

7 Do you know if Sections 12 and 13 -- are there
8 any Mississippian wells in those sections that you know of?

9 A. Sections 12 -- I defer that to the geologist.
10 Not that I'm aware of.

11 Q. Okay. Has anyone else that was notified of this
12 Application expressed any concern about the location to
13 you?

14 A. No, sir.

15 Q. Now, you show on your land exhibit, Section 13,
16 the Merit Energy Company; is that the entire section?

17 A. Yes, Merit Energy is the operator of Section 13.

18 EXAMINER CATANACH: Okay, that's all I have.

19 MR. BRUCE: Mr. Examiner, I will state for the
20 record, I looked at the well files in Section 12. I
21 believe in the southwest quarter there was a Morrow well
22 drilled that was plugged back to the Strawn, I believe, in
23 the east half of 12.

24 JOHN R. McRAE,

25 the witness herein, after having been first duly sworn upon

1 his oath, was examined and testified as follows:

2 DIRECT EXAMINATION

3 BY MR. BRUCE:

4 Q. Please state your name and city of residence.

5 A. John McRae, Midland, Texas.

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

7 A. I work for Arrington Oil and Gas. I'm the
8 exploration manager of the west district.

9 Q. Have you previously testified before the
10 Division?

11 A. Yes.

12 Q. As a geologist?

13 A. Yes.

14 Q. Were your credentials as an expert accepted as a
15 matter of record?

16 A. Yes.

17 Q. And are you familiar with the geology involved in
18 this Application?

19 A. Yes.

20 Q. In fact, with the geology in this West Lovington
21 Townsend area?

22 A. Very well.

23 MR. BRUCE: Mr. Examiner, I'd tender Mr. McRae as
24 an expert petroleum geologist.

25 MR. HALL: No objection.

1 EXAMINER CATANACH: Mr. McRae is considered
2 qualified.

3 Q. (By Mr. Bruce) Mr. McRae, could you move on to
4 your Exhibit 6 and discuss the reason for the proposed well
5 location and a little bit of the Morrow geology in this
6 area?

7 A. Exhibit 6 is a structure map on top of the Morrow
8 lime. It shows our proposed location in the northeast
9 northeast of Section 14. It's a mirror location to the
10 Yates well, located in the southeast southeast of Section
11 11.

12 As you can see on the structure map, there's a
13 high ridge that runs east-west through Section 14. As you
14 go to the north and approach our location, there is a
15 structural low.

16 Then you cross and east-west-trending fault and
17 go downthrown in Section 11. There's two prominent
18 structural features in Section 11. There's a north-south-
19 trending low approximately in the center part of that
20 section, left of that north-south fault. Then there is
21 also another low in the southeast corner of that section.

22 The Yates well, located in the southeast
23 southeast of Section 11, was an old well that was re-
24 entered and deepened, and they encountered a Morrow sand at
25 the very base of the Morrow section, right on the

1 Mississippiian unconformity.

2 Because of the penalty imposed on that particular
3 location, they backed up -- set a plug and backed up and
4 did a sidetrack to the northwest. And when they
5 encountered that unconformity of the basal Morrow section,
6 there was no sand, essentially no sand.

7 Q. So that was at an orthodox bottomhole location?

8 A. Yes, yes. That well was plugged back, and the
9 original well was then re-entered, deepened back to the
10 original location at 330 from the corner, to produce the
11 sand that was found at the basal Morrow section.

12 Q. What is the status of that well at this time, to
13 the best of your knowledge?

14 A. That well has been completed, and personal
15 communication with Yates Petroleum, the well was frac'd
16 either yesterday or today. So they are proceeding ahead to
17 complete and produce that well.

18 Q. Okay, let's move -- Go ahead.

19 A. Okay, the only other comment, I just wanted to
20 point out, is that that well is located in that low in the
21 southeast corner of Section 11.

22 Q. In this area, do you want to drill the structural
23 lows?

24 A. Yes. What we found is that there's been numerous
25 periods of movement along these faults, and on top of the

1 Mississippiian unconformity or the basal part of the Morrow
2 section, there has been sand deposited in these structural
3 lows, and several wells in the past 12 months have been
4 drilled specifically for these lows.

5 Q. In what? Sections 10, 11 and to the north of
6 there; is that correct?

7 A. Yes, that's correct.

8 Q. And when you're in the high area you don't get as
9 good a well, or you don't make a well at all?

10 A. That's true.

11 Q. Let's move on to your Exhibit 7. What is that?

12 A. Exhibit 7 is an isopach of the Austin Morrow pay.
13 It's the sand at the basal part of the Morrow section,
14 lying right on top of the Mississippiian unconformity.

15 As you can see, the Yates well had a sand
16 thickness of 21 feet. The sidetrack had two feet. And
17 we'll look at a cross-section in a minute, another exhibit.
18 If you use a 10-percent cutoff for the sand value, the
19 sidetracked well had no sand, no pay, zero. And that sand
20 thickness lays along and on the downthrown side of that
21 east-west-trending fault.

22 Also in Section 14, in the northwest northwest
23 corner, Arrington Oil and Gas drilled a well for a Strawn
24 anomaly. We took it deep, and we encountered seven feet of
25 sand at the basal part of the Morrow section, lying

1 directly on top of the Mississippian. That well is
2 currently completed, and we're producing half a million a
3 day from that particular zone. Again, the sand is lying
4 right against the fault on the downthrown side.

5 Q. Even at your proposed location the sand looks
6 pretty thin?

7 A. That's correct.

8 Q. Very high-risk project?

9 A. Well, the Yates sidetracked, moved north and was
10 also in the low and has no sand. So there is substantial
11 risk that there may be very thin or tight sand, or no sand,
12 at that location.

13 Q. But certainly moving to the south you will get
14 nothing at all?

15 A. You cross the fault, the entire section thins,
16 and we will see that on the seismic lines that will be
17 shown in a minute. The entire section thins, and the risk
18 is significantly higher that there will be no sand.

19 Q. Let's move on to your cross-section, Exhibit 8,
20 and could you explain that for the Examiner?

21 A. This is a cross-section, A-A'. It's a
22 stratigraphic cross-section hung on top of the Morrow
23 limestone, which is the contour horizon for Exhibit 6.

24 The map is not clear as to where this cross-
25 section goes, so let's start with the center well, which is

1 the Yates Number 1 Burns "ATL". It's located 330-300 from
2 the corner, southeast corner, of Section 11. And as you
3 can see, that well encountered 21 feet of sand at the basal
4 part of the Morrow, right on top of the Mississippian
5 unconformity.

6 The sidetracked well, which was drilled in a
7 northwest direction from this Burns Number 1 well, is the
8 well on the left side of the cross-section, and you can see
9 that using a 10-percent cutoff there is no pay. There is
10 just a slight hint of sand in that well at the same
11 location as the Austin pay in the original vertical Burns
12 well.

13 Our location is located on the right side of the
14 cross-section, and we're drilling at a 330 location so that
15 we will be downthrown and also in the same fault block as
16 the Burns well.

17 The top of the cross-section, we have the
18 distances. The center well is the R.L. Burns Number 1, the
19 sidetrack was 330 feet to the northwest. The section line
20 is 330 feet to the south of the Burns well, and our
21 location is 330 from the section line, also to the south.

22 Q. Let's move on to your final exhibit, Mr. McRae.
23 It's got several things on it. Why don't you describe what
24 it is for the Examiner and then maybe go from picture to
25 picture and tell him what it shows.

1 A. All right, Exhibit 9 is a montage taken right
2 from our 3-D seismic. And I didn't mention before that all
3 of these exhibits are based on our 3-D seismic, and we've
4 pulled out two arbitrary lines here, a time map and just a
5 base map to show the location of the lines.

6 Let's start in the lower right-hand corner with
7 the time structure, also on top of the Morrow Lime, which
8 is the contour horizon on Exhibit 6, and the marker that's
9 highlighted in blue on the cross-section, which is Exhibit
10 8.

11 On this time map, the color code, purple is the
12 deepest, lowest portion of the map, and the yellow is the
13 highest. The white shows the location of the faults, and
14 our geophysicist went through and interpreted each line,
15 north-south, east-west, and arb lines northeast-southwest
16 and northwest-southeast, in an effort to, as accurately as
17 possible, map the location of these faults.

18 The reason the faults are kind of stairstepped,
19 it's the pixel width of the resolution.

20 Let's look at cross-line 153, which is in the
21 upper left-hand corner of the montage. That seismic line
22 is a north-south line that goes right through the Yates
23 vertical well, across the section line through our proposed
24 location and shows the location of the fault.

25 The red line, which is labeled on the right-hand

1 side, Morrow lime, that's the location of the Morrow lime,
2 based on a synthetic end of Yates' Burns well.

3 It's very difficult to see, but immediately below
4 the red line, which is the Morrow lime, the next peak down
5 is a blue line, and that represents the top of the
6 Mississippian unconformity.

7 Q. Is what you're talking about between the red line
8 at 1.600 and then -- in between that line and the green
9 line?

10 A. Yes.

11 Q. Okay.

12 A. On the left-hand side, you can see that there's a
13 well developed trough below the Morrow lime, and then you
14 go into the Austin, which is a peak, and also designated by
15 a blue marker. The location of the fault is marked by the
16 heavy dark line.

17 And then you go upthrown, and you can notice that
18 the interval from the Morrow lime to the top of the Austin
19 thins significantly, showing that the entire Morrow section
20 is thinned on the upthrown side of that fault.

21 This seismic line also shows the section line in
22 red. It shows the Yates-Burns location, labeled 1-ATL, and
23 it shows our location 330 off the line and immediately
24 downthrown to that fault, labeled 7-14.

25 The other arbitrary line that we have displayed

1 is one that goes through the Yates vertical well, the Yates
2 sidetrack, and through the extreme southeast corner of
3 Section 11 and going into and through the location -- or
4 let's put it this way, a mirror location in the northwest
5 northwest of Section 13.

6 We've highlighted the Burns vertical well, the
7 black line. It's labeled 1-ATL. We've also located the
8 location of the sidetrack, and that is labeled ATLsdtrk.

9 As you can see, there's essentially no difference
10 on the Austin horizon, which is the blue line, and that
11 would be about 1.63 seconds -- between the vertical well
12 and the sidetracked well. We cannot see these sands on the
13 seismic. All we can do is say, we're low or we're high,
14 we're downthrown, we're upthrown, and we can pick the
15 location of the faults.

16 As you go further to the right, you'll see the
17 section line again in red, and approximately one trace
18 southwest of the section line -- I'm sorry, southeast of
19 the section line, you go upthrown onto that south fault
20 block.

21 Q. Based on the seismic, is the location 330 feet
22 from the north line the only way you can be on the
23 downthrown side of this fault?

24 A. Yes, that's true. Even where we have picked the
25 fault on the cross-line 153 is risky. Some geophysicists

1 would even pick it further north than where we have. This
2 is a high-risk location. There's a very good chance we may
3 end up being upthrown. But we see enough reason to show
4 that we will be downthrown and have potential to be in the
5 same sand that Yates is producing from, that we're willing
6 to drill the well.

7 Q. And again, in order for that Morrow sand to
8 accumulate, you have to be in a structural low?

9 A. You have to be on the downthrown side of that
10 fault, yes.

11 Q. Okay. In your opinion, is the granting of this
12 Application the only reasonable opportunity for Arrington
13 to have a reasonable chance of drilling a commercial well
14 in this acreage?

15 A. Yes.

16 Q. In your opinion, is the granting of this
17 Application in the interest of conservation and the
18 prevention of waste?

19 A. Yes.

20 Q. On your exhibits, Mr. McRae, I notice Bill
21 Baker's name. Is he a geologist at Arrington?

22 A. Right, we have two geologists, Bill Baker and
23 myself. Bill prepared these exhibits, along with Lou Lint,
24 our geophysicist. I was involved in the process all along.
25 His daughter had surgery today, and he was not able to be

1 here, so I'm here representing Arrington. I've been very
2 involved in this entire area, and I was involved in the
3 preparation of these exhibits.

4 Q. And you have reviewed all the data?

5 A. Yes.

6 Q. And you agree with their interpretation?

7 A. Yes.

8 MR. BRUCE: Mr. Examiner, I'd move the admission
9 of Arrington Exhibits 6 through 9.

10 MR. BRUCE: No objection.

11 EXAMINER CATANACH: Exhibits 6 through 9 will be
12 admitted as evidence.

13 Mr. Hall?

14 CROSS-EXAMINATION

15 BY MR. HALL:

16 Q. Mr. McRae, so the record is clear on the
17 circumstances here, unlike the Yates well, this is a new
18 drill, correct?

19 A. Yes, that's correct.

20 Q. So you don't have that special circumstance where
21 you're re-entering a previously drilled well, and it's a
22 different set of economic circumstances that are involved?

23 A. That's correct.

24 Q. And I understand you to say that you're not
25 basing your interpretation from any data from the Yates

1 well, that's simply unavailable at this point, correct?

2 A. No, that's not. We have access to all of the
3 Yates data. We're in that well, we have a small percentage
4 of that well.

5 Q. Is there any production data yet?

6 A. No, they have just -- They completed the well,
7 perforated the well several weeks ago at the rates that I
8 was told were about 300 MCF a day. They had good
9 bottomhole pressure, they were waiting on a frac,
10 communication with Yates today. They either frac'd the
11 well yesterday or today, and he hadn't heard.

12 Q. Now, you said it's your hope, based upon your
13 seismic interpretation, that you are seeking to drill on
14 the down side of the fault?

15 A. That's correct.

16 Q. And from your seismic you can't really tell, as I
17 understood you to say, the direction of the throw on the
18 fault; is that --

19 A. Oh, you can tell the direction, it's up to the
20 south, down to the north.

21 Q. Can you tell the amount of the throw from your
22 seismic?

23 A. You can take time velocities and convert it to an
24 amount of throw. I don't know what that is. Our
25 geophysicist didn't do that.

1 Q. Yeah, that's not been done here. Can you
2 determine whether or not the fault is a sealing fault for
3 this location?

4 A. Our interpretation is that the sand exists on the
5 downthrown side of the fault and does not exist on the
6 upthrown side. So the fault really has not bearing as to
7 sealing or not sealing. We know the trap is there. The
8 Yates well is productive from it.

9 Whether the fault seals it is really not the
10 question. There's a trap there, and we want to drain our
11 fair share.

12 Q. I understood you to say -- You're talking now
13 about basically a 20-foot Morrow sand section here?

14 A. That's what's present in the Yates well.

15 Q. And I understand you to say that you can't really
16 see that with the seismic you have?

17 A. No.

18 Q. And therefore this location is risky?

19 A. That's correct.

20 Q. Is it any more or less risky than a location at a
21 standard location?

22 A. It is much more risky, because you'll be upthrown
23 and there's numerous well control, primarily up in Section
24 3 of this township, to show that when you're high the sand
25 is nonexistent or very, very thin, and in the low the sand

1 is thicker.

2 This is an unconformity. The sands were
3 deposited on an erosional surface, and they tend to be
4 deposited in lows.

5 Q. On your Exhibit 9, your cross-line 153 there,
6 where you've attempted to locate the fault, now, is that
7 your location or the geophysicist's?

8 A. This is Lou Lint, our geophysicist's, location.
9 But I'm in agreement as to where it should be placed. And
10 this is one line, cross-line 153 -- as you can see, we --
11 Let's see. Look at the time map. There are multiple lines
12 back to the west where we see the same fault placement.

13 Q. Well, explain to me how this ought to be read if
14 your wellbore is the heavy black line. That's your
15 proposed location, correct?

16 A. Which exhibit are you looking at?

17 Q. Exhibit 153,

18 A. Cross-line 153 on Exhibit 9.

19 Q. Yes.

20 A. Our location is -- At the very top, see where it
21 says 7-14?

22 Q. Correct.

23 A. And then right below it is a blue line.

24 Q. Yes.

25 A. That is the location of our wellbore. The heavy

1 black line immediately to the right of that is the location
2 of the fault.

3 Q. And is there any reason, based on this cross-
4 line, why that fault line isn't located even further north,
5 based on the data displayed on that cross-line?

6 A. The criteria I use, and that Lou uses, we map the
7 peaks and the troughs that we are very clear on. And if
8 you'll start on the left side of that cross-section, let's
9 go down to the Chester top, which is the green line, the
10 green pick. You can see that all the way through the Yates
11 well, through the section line, and right up to where we
12 have our location picked, the reflection on the Chester is
13 very strong and clear.

14 Then there's a couple traces right where our
15 wellbore is going to be, where that Chester is not clear.
16 But starting where the fault is located and further back to
17 the right, the Chester is a very strong, very clean pick.
18 The fault zone is right there in that area where the two
19 traces are very dim.

20 Q. So is it --

21 A. Our interpretation of the location of the fault
22 is based on this line, numerous other lines, arbitrary
23 lines through the 3-D data set, and this is the best
24 interpretation that we see as to where the fault is
25 actually located.

1 It is our hope that the sand might be even
2 thicker right along the downthrown side of that fault in
3 that dead zone. We've seen that other places. So it's
4 possible that the sand might be thicker there, and that's
5 why we're drilling in that particular spot.

6 But as far as the location of the fault, I can
7 give you a zone -- and that's what Lou has done on this
8 map, the time map, and the little white spot is basically
9 that dead zone where we think the fault is located. But we
10 can't pick it exactly. That's why this is a risky
11 location.

12 Q. Isn't it accurate to say, then, that it's equally
13 probable that the fault could be located north of your
14 proposed wellbore location, based on these traces?

15 A. I would say that the fault zone, however wide
16 that is, will vary somewhere through that dead zone.

17 Q. That was my next question. When you're speaking
18 of zone, how large an area are you talking about? Can you
19 say?

20 A. I have seen many, many field outcrops. I've seen
21 faults basically the width of a knife blade, and I've seen
22 fault zones, you know, a few hundred feet thick, numerous
23 faults -- That's why I call it a fault zone. Those are the
24 areas of weakness areas that are easily eroded, and those
25 are areas where sand generally is deposited.

1 We are in the fault zone on the downthrown side,
2 according to our interpretation, and that's where we think
3 the sand will be.

4 We do not want to be on the upthrown side,
5 because the sands generally do not exist on the upthrown
6 side.

7 Q. Look at your Exhibit 8 in that regard. If you
8 look at the Austin Morrow pay section you've shown there,
9 what is the basis for it to be shown as thinning to the
10 south, toward the section line?

11 A. Good question. I don't know why Bill did that.
12 We know the sands thicken and thin. It could be thicker,
13 it could be thinner than that. We don't know. We know the
14 sand -- The probability of finding sand is much higher on
15 the downthrown side of the fault than the upthrown side.
16 Yates has a 330 location, and it has sand, nice, thick
17 sand, and 330 is the only location that we can use to
18 protect our correlative rights, and also, we're just barely
19 on the downthrown side of the fault.

20 Q. Looking at your Exhibit 6, the well in the
21 southwest quarter there, is that an Atoka well or a Morrow?

22 A. South -- I'm not sure --

23 Q. Southwest of 14.

24 A. The southwest southwest of 14?

25 Q. It looks like it's in the northeast southwest.

1 A. Northeast southwest. That well penetrated the
2 Morrow lime, did not penetrate the Morrow Austin zone. The
3 one that's colored red?

4 Q. Yes, sir.

5 A. Yes, it topped the Morrow lime and quit at that
6 point, and they did not go deep enough to test this
7 particular zone.

8 Q. You testified briefly that you thought your
9 location was necessary to protect your correlative rights,
10 and I assume you mean from drainage by the Yates well in
11 Section 11?

12 A. That's correct.

13 Q. You don't have enough information on hand, today
14 anyway, to say with any certainty that that well will be
15 draining across the section line?

16 A. We feel that the sand -- if the sand is present
17 at our location at the top of the Mississippian, there is a
18 very high probability that we'll be in communication with
19 the Yates well.

20 Q. If there is producible sand to the south of the
21 fault line as you've drawn it, will the fault protect you
22 from drainage?

23 A. Would you repeat that question, please?

24 Q. If there is a producible Morrow sand section
25 south of the fault line where you've drawn it there --

1 A. South of the fault line?

2 Q. Yes, sir.

3 A. We don't want to drill south of the fault line.

4 Q. Well, follow my question, though.

5 A. Okay.

6 Q. Assuming that you could get a commercial well in
7 a Morrow section south of that fault line, would that
8 production be protected from drainage by the fault?

9 A. No, because we think the fault cuts up into the
10 Morrow lime section -- I mean the Morrow section, somewhere
11 up into the Morrow. How far up, I'm not sure.

12 Our geophysicist has drawn the fault cut up above
13 the Morrow lime. I'm not sure if that's based on a very
14 detailed interpretation to time the fault, but it certainly
15 cuts above the Austin, the unconformity.

16 Q. Is Arrington willing to produce the underlying
17 raw seismic data and interpretation to Permian for further
18 evaluation?

19 A. That's a management decision that would have to
20 be made by Mr. Arrington, and I'm not at liberty to make
21 that decision.

22 MR. HALL: Mr. Examiner, we would say that we are
23 entitled under Rule 705, New Mexico Rules of Evidence, to
24 such data, so that we can have an opportunity to evaluate
25 that data and conduct further examination of the geologic

1 and geophysical witnesses.

2 MR. BRUCE: Mr. Examiner, I think the Division
3 has ruled in the past that that's confidential and
4 privileged information, that it will not order to turn
5 over.

6 MR. HALL: I think the rulings in the past have
7 been where a witness testifies that a well location is
8 based solely on seismic, as it is here, and that's the
9 reason for the pick, then they are obliged to disclose
10 their underlying data, particularly where they're basing
11 expert opinion testimony on it.

12 MR. BRUCE: This is not based solely on seismic.
13 There is the Yates well, there are other wells on this map.

14 THE WITNESS: We have provided arbitrary line
15 seismic 1 to do that very thing, to show where we see the
16 fault and how it pertains to Section 13.

17 EXAMINER CATANACH: Exactly what data are you
18 requesting, Mr. Hall?

19 MR. HALL: We'd like the raw data from the shoots
20 for all of the lines that they're basing their testimony on
21 today, and their process data and any interpretation that
22 is the basis of their testimony here today.

23 EXAMINER CATANACH: What seismic lines are the
24 basis of your testimony here today?

25 THE WITNESS: Cross-line 153 and arbitrary line

1 number 1, as we've presented.

2 MR. BRUCE: Mr. Examiner, Arrington went to cost
3 to acquire this, as I said, it's been privileged and
4 confidential, and we believe that at a West Lovington-
5 Strawn hearing Mr. Hall himself went to District Court to
6 fight turning over such data to the parties, and I
7 believe -- I don't know what the final resolution was, but
8 the data was never turned over.

9 MR. HALL: Confidentiality is not a problem. I'm
10 willing to craft a confidentiality agreement, and I think
11 we can limit the data to the northeast corner of Section
12 14, northeast quarter.

13 MR. BRUCE: Mr. Examiner, there's enough data for
14 them to look at here today and for you to make a decision.
15 They're just trying to get free data. We would object to
16 turning it over.

17 THE WITNESS: I might point out that the base map
18 located in the lower left-hand corner of Exhibit 9 is our
19 base map and has our cross-lines and -- all noted as to
20 exactly where the location of these wells are, and they're
21 free to have a geophysicist independently interpret this
22 data. I mean, we have all our shot points noted. So we've
23 basically provided seismic right here.

24 EXAMINER CATANACH: I'm sorry, Mr. McRae, are you
25 saying that they have all the data they need to make their

1 own interpretation?

2 THE WITNESS: Yes, I am. Base map, shot points
3 labeled and two seismic lines fully labeled as to the
4 locations. So...

5 I didn't mention that about the base map, that we
6 have a base map provided right here.

7 EXAMINER CATANACH: I think I'm going to deny the
8 request, Mr. Hall, for that data.

9 MR. HALL: I have no further questions of this
10 witness.

11 EXAMINATION

12 BY EXAMINER CATANACH:

13 Q. Mr. McRae, have you -- Is Arrington proposing any
14 kind of production penalty on this well?

15 MR. BRUCE: Mr. Examiner, it would be in
16 accordance with Exhibit 2.

17 THE WITNESS: I would prefer to defer that to our
18 landman or Jim Bruce.

19 MR. BRUCE: It does provide for a footage-based
20 penalty. So for instance, if the bottomhole location is
21 330 feet, there would be a 50-percent penalty on the well's
22 ability to produce.

23 EXAMINER CATANACH: So it's the same penalty
24 that's applied to the Yates well?

25 MR. BRUCE: Yes, sir.

1 EXAMINER CATANACH: Fifty percent production
2 penalty, based on the well's ability to produce?

3 MR. BRUCE: Which is why Yates drilled the
4 lateral portion on its well, to try to avoid that penalty.

5 EXAMINER CATANACH: Okay, I have no further
6 questions of this witness.

7 MR. BRUCE: I have nothing further in this
8 matter.

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

12 DIRECT EXAMINATION

13 BY MR. HALL:

14 Q. For the record, please state your name.

15 A. Robert Marshall.

16 Q. Mr. Marshall, where do you live and by whom are
17 you employed?

18 A. I live in Midland, Texas, and I'm an owner in
19 Permian Resources, Inc.

20 Q. And what is your professional background?

21 A. I'm a geologist by education.

22 Q. Have you previously testified before the OCD in
23 New Mexico?

24 A. No, I have not.

25 Q. Would you please give the Hearing Examiner a

1 brief summary of your educational background and work
2 experience?

3 A. I have approximately 28 years of work experience.
4 I graduated from Tulane University in 1972 with a bachelor
5 degree, graduated in 1974 from the University of New
6 Orleans with a master's degree, both in geology.

7 Q. And are you familiar with the geology in the area
8 of the subject lands in this Application?

9 A. Yes, I am.

10 Q. And you're familiar with the proposed well
11 location; is that correct?

12 A. Yes, I am.

13 Q. You conducted a geological study of the proposed
14 location?

15 A. Yes.

16 MR. HALL: At this time, Mr. Examiner, we tender
17 Mr. Marshall as a qualified petroleum land geologist.

18 MR. BRUCE: No objection.

19 EXAMINER CATANACH: Mr. Marshall is so qualified.

20 Q. (By Mr. Hall) Mr. Marshall, why does Permian and
21 Merit oppose the Arrington Application?

22 A. First of all, Merit originally approved any 330
23 exception last year because the -- it was an administrative
24 overview on their part because they were in the process of
25 selling all their production, and we are in the process of

1 acquiring that production.

2 Permian objects to the 330 exception because we
3 are afraid of any type of drainage which might occur to our
4 correlative rights.

5 Q. Is it your opinion that there are economic
6 reserves that may be recovered by Arrington's well at a
7 standard drilling location within the drilling window?

8 A. Yes, it is.

9 Q. Let's look at what has been marked as Permian
10 Exhibit 1, please, sir, if you would take that in front of
11 you, and what does that exhibit entail?

12 A. This is a subsurface map of the Atoka section,
13 which sits on top of the Morrow.

14 Q. And what does this exhibit show?

15 A. It just shows a gentle northeast nose.

16 Q. Does exhibit establish that there are drillable
17 locations within the standard drilling window in Section
18 14?

19 A. If we're going for the Atoka, yes.

20 Q. All right, let's look at Exhibit 2. Would you
21 identify that, please, sir?

22 A. That's a Morrow sand isopach map.

23 Q. Now, does Exhibit 2 demonstrate the existence of
24 drillable Morrow locations within the standard drilling
25 window for Section 14?

1 A. In my opinion, yes.

2 Q. If you would look at the Arrington Exhibit 6 and
3 compare that with your Exhibit 2, please, sir, can you
4 explain the difference in interpretation?

5 A. Well, my -- His 6 with my 2? They're two
6 different maps. One is a structure map on the top of the
7 Morrow lime, showing an east-west fault down to the north,
8 and my map is just an isopach of the gross sand thickness
9 of the Morrow sand.

10 Q. Now let's look at Arrington Exhibit 7. Would you
11 compare that with your Exhibit 2?

12 A. Okay. Now, this is comparing like things now. I
13 did not have -- You have to realize, I did not have the
14 Yates well, which was re-entered, but I came pretty close
15 to it, I think, on my mapping.

16 I personally think that there are -- these
17 channels are north-south-aligned channels, can be some
18 northeast-northwest alignment. I talked to other
19 geologists who had expressed the same thing. I think that
20 there is a channel that runs in from the northeast.

21 He shows some sand coming in from the east on his
22 Exhibit 7, in the south half of that Section 12. I show it
23 coming in from the northeast, wrapping around to the
24 production that's in the southwest quarter, which I call
25 Morrow sand. I believe John calls that Atoka -- or

1 Brunson, yeah, Brunson-Atoka producer. But laying the lots
2 down side by side, they appear to be the same sands.

3 Q. All right. Do you agree with Mr. McRae's
4 testimony that seismic is not a reliable way to detect
5 Morrow sands of this particular thinness?

6 A. Well, I agree you can't identify the sands on the
7 seismic section, that's correct.

8 Q. How do the Morrow sands --

9 A. Not in this area. You can do it down in Eddy
10 County very easily.

11 Q. Let's look at Exhibit 3, if you would identify
12 that, please sir.

13 A. This is a Mississippian structure map, just drawn
14 with available subsurface data, and it shows some north
15 dip, basically, across the questioned acreage. I did not
16 have access to any seismic data when I drew these maps.

17 Q. I understand. Does Exhibit 3 tend to demonstrate
18 the existence of drillable within the standard drilling
19 window for the west half of Section 14?

20 A. I think it does, combined with the isopach map of
21 the Morrow sand.

22 Q. Mr. Marshall, have you had an opportunity to
23 review the structure map and the isopach and seismic
24 exhibits that were utilized in Case Number 12,291, which
25 was the Application for the Yates well in Section 11?

1 A. Yes, I have.

2 Q. Let me hand you what's marked Exhibits 4, 5 and 6
3 from that case.

4 MR. BRUCE: What are they from, Scott?

5 MR. HALL: The Yates Application. Let me see if
6 there's another copy in here, Jim.

7 Q. (By Mr. Hall) Would you review those exhibits
8 for the Hearing Examiner? Bear in mind, he doesn't have a
9 copy, so if you'd like to get up and show those in front of
10 him, feel free to do so.

11 A. I assume it was Yates Petroleum's consultant or a
12 third party did these. We just located these just
13 recently. But they are a Mississippian structure map, a
14 Morrow isopach map and then a montage of some seismic data,
15 and their seismic interpretation of the area. The well
16 that we were just talking about is this well that was
17 circled right there and has a white dot near it.

18 Q. Now, does the geophysical and geologic
19 interpretation in Case 12,291 generally agree with your
20 conclusions with respect to the availability of other
21 drilled locations in Section 14?

22 A. Yes, this Mississippian map, which underlies the
23 Morrow sand, looks very similar to my map.

24 Q. Now, with respect to the seismic exhibit, what is
25 the exhibit number there?

1 A. Exhibit Number 6 in Case 12,291.

2 Q. What does that show with respect to the location
3 of any fault?

4 A. The way that it shows here on this 3-D map is
5 that it shows some crowded contour lines well within a 330-
6 foot location on Arrington's acreage, which could indicate
7 a fault right there.

8 Q. So it's located further north than where
9 Arrington has shown it on their exhibit?

10 A. That's correct. And if that is correct, then he
11 would be on the upthrown side.

12 Q. Mr. Marshall, let me ask you, you're aware, are
13 you not, of the Division's policy of strict interpretation
14 for Rule 104, well locations, now?

15 A. Not really --

16 Q. Well, let me some specific questions.

17 A. -- I'll be honest.

18 Q. Are there any unusual circumstances here that
19 justify the Arrington request?

20 A. Not that I'm aware of.

21 Q. There's no topographic or surface situation which
22 justifies the location?

23 A. I'm not aware of any.

24 Q. And based on what you're seen with respect to the
25 Arrington geology, geophysical interpretation, do you

1 believe that that constitutes a special circumstance
2 justifying the request?

3 A. No, because compared to this seismic, they would
4 be on the upthrown side.

5 Q. And is it accurate to say that the Arrington
6 interpretation is highly interpretive?

7 A. I haven't looked at all of it other than what was
8 presented to me.

9 Q. All right, based on what they presented here
10 today?

11 A. Well, it looks a little odd, the little fault
12 that comes and makes a little dip to the south looks a
13 little odd to me. But that's why we are all drilling
14 different wells.

15 Q. Based on your geology, the Arrington geology and
16 the geology that was shown in the Yates case, can you say
17 whether all drillable locations within the standard
18 drilling window in Section 14 have been eliminated?

19 A. No.

20 Q. Do you believe that there are locations available
21 that ought to be drilled?

22 A. I believe, using my interpretation, that there
23 are some, but they are on the upthrown side. They believe
24 that they have to go on the downthrown side. I think
25 that -- I was unaware of any faults. I figured that the

1 northeast quarter, they're still locations for the Morrow.

2 Q. Other than the fact that the Yates well was a re-
3 entry, was there any other special circumstance involved in
4 that case?

5 A. I'm not aware of any, other than they cannot move
6 the borehole.

7 Q. Do you know if any other operators have expressed
8 a concern over Arrington's proposed location here?

9 A. No, I am not aware of any.

10 Q. If Arrington's request is granted, will it
11 trigger an application for a similar offsetting nonstandard
12 location by Permian?

13 A. Quite possibly, yeah.

14 Q. And if that is the case, will the established
15 spacing pattern for Morrow wells in the area be disrupted?

16 A. It will be disrupted quite a bit.

17 Q. In your opinion, is there any greater likelihood
18 that additional reserves will go unrecovered if the well is
19 drilled at a standard location?

20 A. Based on my interpretation, no.

21 Q. And in your opinion, will Arrington be able to
22 recover its fair share of resources at a standard location
23 within the standard drilling window?

24 A. I think so.

25 Q. Were Exhibits 1, 2 and 3 prepared by you?

1 A. Yes.

2 MR. HALL: We'd move the admission of Exhibits 1,
3 2 and 3, and we'd request the Examiner to take
4 administrative notice of Exhibits 4, 5 and 6 in Case Number
5 12,291.

6 EXAMINER CATANACH: Any objection, Mr. Bruce?

7 MR. BRUCE: No, sir.

8 EXAMINER CATANACH: Exhibits 1, 2 and 3 will be
9 admitted as evidence, and we will take administrative
10 notice of Exhibits 4, 5 and 6 in Case 12,291.

11 Mr. Bruce?

12 CROSS-EXAMINATION

13 BY MR. BRUCE:

14 Q. On your Exhibit 1, Mr. Marshall, does the
15 structure essentially mirror the structure on Arrington
16 Exhibit 6?

17 A. Can you hold that up again?

18 MR. HALL: Six?

19 THE WITNESS: Oh, here's 6, excuse me. Well, I
20 show -- Let's see. He shows a -- more or less a east-west
21 ridge running in the south half of 14, more or less east-
22 west aligned. I show just a gentle nose going northeast.
23 There could be a little, though, like he's showing up here
24 on the north side of his proposed fault.

25 Q. (By Mr. Bruce) What about the control point in

1 the northeast quarter of Section 23? What is the subsea
2 depth of that point?

3 A. I don't have it. These are -- In 23, the ones in
4 the northeast --

5 Q. Uh-huh.

6 A. -- or northwest northeast?

7 Q. Yes, sir.

8 A. I do not have it.

9 Q. Do you have any reason to dispute what's on
10 Exhibit 6 for that data point?

11 A. You're saying in 23?

12 Q. Section 23, immediately to the south of Section
13 14.

14 A. Well now, we're talking about two different
15 horizons here; we're talking about the top of the Morrow
16 lime and the top of the Atoka. So there is going to be a
17 big variance there, if they're two different animals. It's
18 apples and oranges.

19 Q. But there is south dip on the Morrow, however, is
20 there not?

21 A. That's what he shows here.

22 Q. And you show a low going through the northeast
23 quarter of Section 14, and so does Mr. McRae, does he not?

24 A. That's correct. Well, it's a real gentle low,
25 yeah.

1 Q. Okay. Let's move on to your Exhibit 2.

2 A. Okay.

3 Q. I'd like to talk about control points you're
4 using here. First off, are there any -- Okay, let's start
5 with Section 11, where the Yates well is, and ignore the
6 existing Yates well, the one we've been talking about here
7 today.

8 A. Okay.

9 Q. Are there commercial Morrow wells in Section 11?

10 A. I believe that the -- They call it Atoka, but
11 it's probably what I'm calling Morrow; it's up in the
12 northwest quarter. I don't know about the one in the
13 southwest quarter.

14 A. I don't have the information, it hasn't been
15 released. But those are the only two that -- Well, let's
16 see. And then I believe --

17 Q. So it hasn't been released, so you don't know if
18 it's commercial or not?

19 A. Yeah, I believe Number 2 was a dual -- according
20 to the scout ticket, was a dual -- in the southeast
21 quarter, was a dual Strawn-Morrow well. If I'm not
22 mistaken. I may be getting mixed up. I think that it was
23 the 2 "ASP".

24 Q. Do you have type logs on any of these?

25 A. No, I don't have anything.

1 Q. You don't have anything?

2 A. I just -- I go by scout tickets.

3 Q. Okay, so you don't --

4 A. It's not of public record yet.

5 Q. Okay. But you do not know of any commercial
6 Morrow well in Section 11, is what I'm asking you.

7 A. I haven't seen any production information, other
8 than what is reported in scout tickets.

9 Q. Okay. Do you know of any commercial Morrow wells
10 in Section 12?

11 A. In 12, none.

12 Q. Do you have any control in Section 12 for the
13 Morrow?

14 A. In the northeast quarter we have a well, the
15 American liberty well, which was a well drilled in the
16 Fifties. P-and-A'd 10-52.

17 Q. Okay.

18 A. And I see about 20 foot of sand in that well.

19 Q. What part of the Morrow? Upper, middle, lower?

20 A. It's probably a little higher in the section,
21 maybe middle. It's not up in the upper part.

22 Q. Okay.

23 A. It's not too far above the Miss.

24 Q. Okay, but that's the only one in this section?

25 A. There's another well that Yates drilled in the

1 southeast quarter, but I don't have any information.

2 MR. BRUCE: Mr. Examiner, I think the Division's
3 records, which I'd ask you to take notice of, say that that
4 well was completed in the Strawn and not the Morrow.

5 THE WITNESS: Which one?

6 Q. (By Mr. Bruce) Are there any --

7 A. Can I ask you which one you're talking about?

8 Q. I'm talking about the one in the southeast of 12.

9 A. Okay.

10 Q. Are there any commercial Morrow wells in Section
11 13, the section in which --

12 A. No.

13 Q. -- Permian is purchasing an interest?

14 Are there any commercial Morrow wells in Section
15 14 that you know of?

16 A. In what I've called the Morrow, yes, in the south
17 half there's two of them.

18 Q. So -- but -- Mr. McRae notes those as Atoka
19 producers, does he not?

20 A. I believe that's what he said, the Brunson zone,
21 yeah.

22 Q. Okay. And you're calling that Morrow?

23 A. Yeah they sit about -- less than a hundred feet
24 above the Mississippian lime.

25 Q. Do you have any type logs on those?

1 A. No. I have it on a work cross-section, but that
2 wouldn't be admitted.

3 Q. Let's go to your Exhibit 3 in the Mississippian.
4 Once again, rather than going section by section, Sections
5 11, 12, 13 and 14, first do you have any control? What are
6 your control points?

7 A. In 11, nothing. Oh, yeah, we have the well
8 that -- Excuse me, in 12 -- 11, in the southeast southeast,
9 8128.

10 Q. Okay, that's just the new Yates well?

11 A. That's correct.

12 Q. Okay. It's the only one there?

13 A. The only one that I have record of. Now, when I
14 go to record, I have to go through a log service, okay? So
15 they don't have it. And they don't have any other well
16 logs here that penetrated this zone.

17 Q. Okay, so in those four sections that's the only
18 data point?

19 A. That's correct, that I have.

20 Q. Okay. What basis do have to alter the structure
21 between the Atoka and the Mississippian, if you don't have
22 any well control?

23 A. There's one point that kind of sticks out. It's
24 that to -- You mean the difference in the maps? The only
25 difference is one point in the northeast quarter of 23,

1 which is really outside the area we're talking about but
2 still controls the -- It looks odd.

3 Q. Mr. Marshall, you were saying that potentially
4 the fault that Arrington shows running across the northern
5 part of Section 14 could be further to the north?

6 A. That's what it looks like on Yates' data.

7 Q. And if that's the case, Arrington doesn't believe
8 it would make a well, does it?

9 MR. HALL: Object, it calls for speculation on
10 what Arrington believes.

11 Q. (By Mr. Bruce) Then what's the harm in drilling
12 it, if there's no going to be any reservoir there, to you?

13 A. Well, our interpretation is that there is
14 reservoir there, and even if there is a fault there, if
15 it's in the upthrown side, it could drain our correlative
16 rights.

17 Q. How many Morrow wells has Permian drilled in New
18 Mexico?

19 A. None. However --

20 Q. Did --

21 A. However --

22 MR. HALL: Go ahead.

23 THE WITNESS: However, when I was at Getty, this
24 was my area with Getty. I worked with Florida gas here. I
25 probably drilled four.

1 Q. (By Mr. Bruce) Did Arrington offer to Permian
2 the same agreement it has with Yates, for an unorthodox
3 location?

4 A. Did he offer me the agreement?

5 Q. Did Arrington offer Permian Resources the same
6 agreement it has with Yates?

7 MR. HALL: I'm going to object. I think offers
8 of compromise and settlement are admissible into evidence
9 under Rule 408.

10 EXAMINER CATANACH: We'll uphold that objection.

11 MR. BRUCE: I have nothing further of the
12 witness, Mr. Examiner.

13 EXAMINATION

14 BY EXAMINER CATANACH:

15 Q. I have just a couple. This well, if drilled,
16 will be subject to a 50-percent production penalty. Do you
17 feel that that's not sufficient to protect your correlative
18 rights?

19 A. Well, we are afraid of the 330. The production
20 penalty would be great if the Commission does allow it, but
21 we are still afraid of the 330. I understand what their
22 interpretation is, but we have -- that's what makes this a
23 ball game. We all have different interpretations.

24 Q. So you still believe that the production penalty
25 will not sufficiently protect your interest?

1 A. No.

2 EXAMINER CATANACH: That's all I have of the
3 witness.

4 MR. HALL: Briefly, redirect?

5 REDIRECT EXAMINATION

6 BY MR. HALL:

7 Q. Mr. Marshall, in response to a question from Mr.
8 Bruce on your Exhibit 3, the Mississippian structure, I
9 believe you were asked whether you had any well control
10 outside of Section 11. Can you clarify that? Do you have
11 well control for your contours, other than the Yates well
12 of Section 11?

13 A. No, just the Yates well.

14 Now, back up. It was not the Yates well, it was
15 the Burns Number 1 width. I do not have a copy of the
16 Yates well.

17 Q. Mr. Marshall, are your Exhibits 1, 2, 3, in your
18 view, a reasonable interpretation of the geology in the
19 area?

20 A. Yeah, given the amount of control I have.

21 Q. Yes. And is your interpretation supported
22 generally by the Yates geologic interpretation in Exhibits
23 4, 5 and 6?

24 A. Except for the placement of the fault, yes.

25 MR. HALL: Nothing further.

1 MR. BRUCE: Nothing further.

2 EXAMINER CATANACH: Okay, this witness may be
3 excused.

4 MR. BRUCE: Mr. Examiner, I would like to ask
5 three questions of Mr. McRae.

6 EXAMINER CATANACH: Okay. We're going to count
7 them too.

8 MR. BRUCE: Maybe he can just answer them from
9 here, Mr. Examiner.

10 JOHN R. McRAE (Recalled),
11 the witness herein, having been previously duly sworn upon
12 his oath, was examined and testified as follows:

13 DIRECT EXAMINATION

14 BY MR. BRUCE:

15 Q. First of all, looking at Permian Exhibits 2 and
16 3, Mr. McRae, how can you draw these line with a virtual
17 lack of well control in this area?

18 A. Which is which here?

19 Q. Exhibit 2 is the Morrow, Exhibit 3 is the
20 Mississippian.

21 A. I have a real hard time with Exhibit 2. There's
22 no type log, there's no cross-section, there's no way to
23 tie the wells together to show what sands they are
24 discussing.

25 My knowledge of this area, there's several

1 different sands. You have the Austin Morrow, which is the
2 sand at the base of the Morrow that sits at the top of this
3 unconformity. There is the Brunson sand up in the Atoka
4 section.

5 Some of the wells that he's using as a control on
6 his Morrow sand isopach are Brunson wells and didn't even
7 penetrate into the Morrow clastics section. You cannot
8 contour a map unless you use all the same horizons and say
9 that it's a reliable isopach map of a sand.

10 Q. Second question, the Brunson Atoka you talk
11 about, that Atoka is a recognized pool up in Sections 10
12 and 11 and in this area, under OCD rules; is that correct?

13 A. That's correct. And those isopachs have been
14 submitted in the past.

15 Q. Finally, if Arrington drills its well, does it
16 object to a mirror location, mirror penalty, for Permian in
17 Section 14?

18 A. No, we do not.

19 MR. BRUCE: I've used up my quota.

20 EXAMINATION

21 BY EXAMINER CATANACH:

22 Q. Mr. McRae, let me ask you one. You targeted that
23 basal sand in the Morrow for your well. Have you
24 identified any Morrow sands up from that basal sand that
25 you think are there?

1 A. On Exhibit 8 it has the entire Morrow Section,
2 and it goes from the top of the Morrow lime to the base of
3 the Austin Morrow pay, and within that section there are no
4 additional pay zones. Most of it is limestone. So there's
5 -- In this particular area there's no additional sands in
6 the Morrow that are recognized.

7 Above the Morrow lime, approximately 30 to 40
8 feet is the Brunson interval, and in this particular well,
9 the Yates Burns "ATL" Number 1, there is no Brunson pay,
10 and there are no Atoka sands in this whole portion of the
11 log that's presented that appear to be pay.

12 So we see no Atoka pay and no Morrow pay in this
13 Yates well. We don't expect it in our well.

14 Q. Even if you end up on the upthrown side of that
15 fault, you don't expect to encounter any additional sands?

16 A. If we're on the upthrown side of the fault, we
17 would expect a thinner section than what's in this well,
18 and no sand, or very thin.

19 You don't know till you drill the well, but if
20 you do a detailed analysis of all the well control in
21 here -- and I've been involved in 20 to 30 wells in this
22 area -- every high well is thin. The thicker wells that
23 are in the lows have more sand. Some of those sands are
24 tight and some are productive.

25 If you drill a high spot, you've increased your

1 risk to have reservoir sand substantially. And we feel
2 that we can get on that downthrown side of the 330
3 location, and we're willing to take that risk, because some
4 of these Austin Morrow sands are very productive.

5 That's it.

6 EXAMINER CATANACH: Okay, I have nothing further.
7 Anything further?

8 MR. BRUCE: No, sir.

9 MR. HALL: Mr. Examiner, I wonder if you could
10 allow some flexibility. I need to clarify some of Mr.
11 Marshall's testimony. There's a possibility he may have
12 misunderstood a question I asked, or I misstated it. But
13 if I could briefly clarify that with him?

14 EXAMINER CATANACH: All right.

15 ROBERT MARSHALL (Recalled),
16 the witness herein, having been previously duly sworn upon
17 his oath, was examined and testified as follows:

18 DIRECT EXAMINATION

19 BY MR. HALL:

20 Q. Mr. Marshall, I asked you with respect to
21 Exhibits 2 and 3 whether you had any well control outside
22 of Section 11. Do you, in fact?

23 A. Yes, I do.

24 Q. Can you identify some of that?

25 A. There's wells in 12, there's three wells in

1 Section 13, there are three wells in Section 14.

2 Q. And that's for both Exhibits 3 and 2; is that
3 correct?

4 A. That's correct.

5 MR. HALL: Thank you, Mr. Examiner.

6 EXAMINER CATANACH: Anything further, gentlemen?

7 MR. HALL: Brief statement?

8 EXAMINER CATANACH: Brief. Mr. Hall?

9 MR. HALL: Mr. Examiner, I would request that you
10 take administrative notice of the Division's memorandum of
11 October 25, 1999, interpreting the new amendments to Rule
12 104.

13 I'd also ask you to take notice of Order Number
14 R-11,364 in Case Number 12,370, which so far as I'm aware
15 is one of the first cases interpreting and making
16 application of the Division's policy of what is, in fact, a
17 strict interpretation of the amendments to Rule 104. And
18 if you look through that order, it articulates the factors
19 that the Division is to look to when evaluating an
20 unorthodox location application.

21 And among those, you will see that the rule was
22 intended to decrease the number of applications for
23 nonstandard locations by granting operators greater
24 latitude in expanding the drilling window for standard
25 locations, and that was based -- took into consideration

1 improved 3-D seismic technology.

2 So what Arrington seeks has already been
3 accommodated by the order, and I think their application
4 runs counter to the intent of the order and that they think
5 the rule is not flexible enough.

6 The order also articulates that an applicant is
7 to show substantial justification or unusual circumstances,
8 and it sets forth some factors, the first and most
9 important of which is whether all locations within the
10 standard window have been eliminated.

11 And I think the evidence produced by Arrington in
12 this case falls short of that. To the contrary, the
13 evidence produced by Permian in this case shows that there
14 are drillable locations within the standard window.

15 The other factor you're to take into
16 consideration, whether there is geological justification,
17 and I think the testimony from all witnesses here is that
18 there is agreement that this is highly interpretive
19 geology, and it's based on highly interpretive seismic that
20 was produced by a third party nonwitness that we weren't
21 able to cross-examine today.

22 It's our view that that geology, the geologic
23 case presented by Arrington does not constitute the
24 substantial justification or the unusual circumstances
25 which justifies the request of Arrington.

1 That's all I have, Mr. Examiner.

2 EXAMINER CATANACH: Thank you, Mr. Hall.

3 Mr. Bruce?

4 MR. BRUCE: Do I have to?

5 EXAMINER CATANACH: No.

6 MR. BRUCE: Mr. Examiner, I've just seen this
7 order on the Marbob case. I'd just point out it states,
8 page 4, geologic considerations are not the basis for
9 Marbob's request. I'd toss that order aside.

10 Mr. Examiner, I know you haven't done all the
11 hearings in the Lovington Townsend area, but enough to be
12 painfully aware that Mr. McRae has been involved in this
13 area for years and years and years, and he is one of the
14 main reasons people are drilling successful wells out here,
15 is one of the primary reasons people are drilling
16 successful Atoka and Morrow wells in this area. He knows
17 what he's doing.

18 Absolutely, we need this unorthodox location to
19 have any reasonable chance of success. The unorthodox
20 location should be approved with the penalty as provided in
21 the Yates-Arrington stipulation, our Exhibit Number 2.
22 That is the only we can protect ourselves, number one, to
23 drill a commercial well, number two, protect ourselves from
24 drainage by Yates. We need it to protect our correlative
25 rights.

1 Based on the faulting that you see on these
2 exhibits, there will be zero effect on Permian in Section
3 13, because of the faulting.

4 We ask that the Application be approved as
5 applied for.

6 EXAMINER CATANACH: Okay. There being nothing
7 further in this case, Case 12,381 will be taken under
8 advisement.

9 And this hearing is adjourned.

10 (Thereupon, these proceedings were concluded at
11 6:20 p.m.)

12 * * *

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17
18 I do hereby certify that the foregoing is
19 a complete record of the proceedings of the
20 Examiner hearing of Case No. 12381
21 heard by me on May 4 1900.
22 David R. Catnach
23 Off Conservation Division
24
25

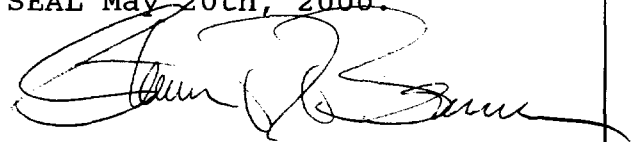
CERTIFICATE OF REPORTER

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

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

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

WITNESS MY HAND AND SEAL May 20th, 2000.



STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 2002