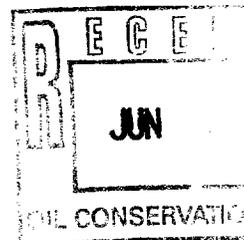


STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



IN THE MATTER OF THE HEARING)
 CALLED BY THE OIL CONSERVATION)
 DIVISION FOR THE PURPOSE OF)
 CONSIDERING:)
)
 APPLICATION OF MARBOB ENERGY)
 CORPORATION)
 _____)

CASE NO. 11,306

ORIGINALREPORTER'S TRANSCRIPT OF PROCEEDINGSEXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

June 15th, 1995

Santa Fe, New Mexico

This matter came on for hearing before the Oil Conservation Division on Thursday, June 15th, 1995, at the New Mexico Energy, Minerals and Natural Resources Department, Porter Hall, 2040 South Pacheco, Santa Fe, New Mexico, before Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

* * *

STEVEN T. BRENNER, CCR
 (505) 989-9317

I N D E X

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 Examiner Hearing
 CASE NO. 11,306

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* * *

A P P E A R A N C E S

FOR THE DIVISION:

RAND L. CARROLL
Attorney at Law
Legal Counsel to the Division
2040 South Pacheco
Santa Fe, New Mexico 87505

FOR THE APPLICANT:

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

* * *

1 WHEREUPON, the following proceedings were had at
2 8:59 a.m.:

3 EXAMINER CATANACH: At this time we'll call Case
4 11,306.

5 MR. CARROLL: Application of Marbob Energy
6 Corporation for directional drilling and an unorthodox
7 bottomhole oil well location, Chaves County, New Mexico.

8 EXAMINER CATANACH: Are there appearances in this
9 case?

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

13 We represent Marbob Energy Corporation in this
14 matter, and I have one witness.

15 EXAMINER CATANACH: Any additional appearances?
16 Please stand so that you can be sworn in.

17 (Thereupon, the witness was sworn.)

18 MICHAEL G. HANAGAN,

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. CARR:

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

24 A. Mike Hanagan.

25 Q. Mr. Hanagan, where do you reside?

1 A. Roswell, New Mexico.

2 Q. By whom are you employed?

3 A. Marbob Energy Corporation.

4 Q. And in what capacity are you employed by Marbob?

5 A. I'm a geologist.

6 Q. Have you previously testified before this
7 Division and had your credentials as a geologist accepted
8 and made a matter of record?

9 A. Yes, I have.

10 Q. Are you familiar with the Application filed in
11 this case on behalf of Marbob?

12 A. Yes.

13 Q. And are you familiar with Marbob's plans for its
14 Leaping Lizard Number 1 well?

15 A. Yes, sir, I am.

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

18 EXAMINER CATANACH: Yes, sir.

19 Q. (By Mr. Carr) Mr. Hanagan, would you briefly
20 state what Marbob seeks in this case?

21 A. We seek approval to re-enter the plugged and
22 abandoned Leaping Lizard Number 1 well, which is located
23 421 feet from the north and 2381 feet from the west in
24 Section 4 of 14-29, and then go to 9000 feet and
25 directionally deviate that well to a location of 300 feet

1 from the north and 2610 feet from the west.

2 Q. And in what pool does Marbob propose to complete
3 this well?

4 A. South Lone Wolf-Devonian.

5 Q. What are the well-location requirements for the
6 pool at this time?

7 A. They're standard statewide rules, 40-acre
8 spacing, 330-foot setbacks.

9 Q. Are you -- Let's see, how close to the north line
10 of the dedicated acreage are you?

11 A. We'll be at 300 feet from the north line, which
12 is 30 foot unorthodox.

13 Q. Let's go to what has been marked as Exhibit -- On
14 the front of the exhibit it's marked Exhibit A, on the back
15 we've numbered it numerically, Exhibit Number 1.

16 Would you refer to that first Exhibit, Mr.
17 Hanagan, and review it for Mr. Catanach?

18 A. That's a lease map. It's of one square mile
19 area. The little dotted area inside each dotted division
20 is 40 acres.

21 The blue outline down in the northeast of the
22 northwest of 4 is the standard proration unit that would be
23 applicable to this well.

24 There's three federal leases involved in this
25 situation. Each one of them has identical royalty to the

1 BLM. There's differing overriding royalty under each of
2 the three tracts, common working interest under all three
3 tracts.

4 Q. Now, the well was originally drilled as a
5 straight hole at an unorthodox location; is that correct?

6 A. Yes, sir, that was previously drilled as the
7 Hanagan Petroleum Number 1 Leaping Lizard.

8 Q. And that location was approved in April of 1994?

9 A. Yes, sir, it was, under Order -- I have that
10 somewhere in here -- under Order R-10,107.

11 Q. Now, you have indicated that the working interest
12 is common throughout the area shown on this first exhibit;
13 is that right?

14 A. Yes, sir, it is.

15 Q. These are all federal tracts?

16 A. Yes, sir.

17 Q. There's different overriding royalty interests in
18 Section 4, the pink acreage, as opposed to the interest in
19 Section 33, in the north of the proposed location; is that
20 right?

21 A. Yes, sir.

22 Q. Can you identify for me what has been marked as
23 our Exhibit Number 2?

24 A. Yes, Exhibit Number 2 is notification to all of
25 the overriding royalty owner -- working interest owners and

1 overriding royalty owners, and royalty owners, in Section
2 33.

3 Q. So all those interest owners that are affected by
4 this 30-foot encroachment have been notified of the
5 hearing; is that right?

6 A. Yes, sir.

7 Q. Can you identify what has been marked as Marbob
8 Exhibit Number 3?

9 A. Yes, sir, it was a letter of protest from some of
10 the overriding royalty owners in the green area of Section
11 33, which would be the southeast quarter of 33.

12 Q. And they're objecting because of the 30-foot
13 encroachment on the acreage on the north?

14 A. Yes, sir, they are.

15 Q. In this letter they also propose that a voluntary
16 federal exploratory unit be formed for the well; is that
17 correct?

18 A. Yes, sir, they do.

19 Q. Is a voluntary or a federal exploratory unit an
20 acceptable way to handle this problem for Marbob Energy?

21 A. We don't really believe it is.

22 Q. And why is that?

23 A. It would cause the segregation of separate
24 leases, which isn't in our best interest.

25 Q. If in fact you were required to do that, what

1 impact could that have on Marbob's plans to go forward with
2 the development of this property?

3 A. There's a chance that this well might not be
4 drilled, just because it's already a fairly small structure
5 that can't stand a whole lot of more hits.

6 Q. Is it possible to move the well location 30 feet
7 farther to the south and still be successful in completing
8 it in this Devonian feature?

9 A. Yes, sir, we could do that. We would prefer not
10 to. It would increase our chances of hitting the fault
11 that we encountered in the Leaping Lizard Number 1, but --
12 It is possible that we could do that, but we'd prefer not
13 to.

14 Q. If the Division required that, would Marbob be
15 willing to attempt to bottom of the well at least 330 feet
16 from the north line of that tract?

17 A. Yes, sir.

18 Q. And if that -- The well will be directionally
19 drilled; is that right?

20 A. Yes, sir, it will.

21 Q. And you will have a survey that will show the
22 exact bottomhole location of that well?

23 A. Yes, we will.

24 Q. If you were unable to stay 330 feet back from
25 that boundary, would Marbob be willing for the Order to

1 require that they return to the Division for the creation
2 of a nonstandard 160-acre unit that would be centered over
3 this Devonian structural feature?

4 A. Yes, we would.

5 Q. The well was -- This pool was previously
6 developed on temporary rules that provided for 160-acre
7 spacing; is that not correct?

8 A. Yes, sir, it was.

9 Q. And if you were required to come and dedicate a
10 nonstandard unit, it would require reinstatement of those
11 rules and a spacing unit across the section?

12 A. Yes, sir.

13 Q. Let's go to the next exhibit. It's Exhibit B.
14 Can you identify that and review that for the Examiner,
15 please?

16 A. Yes, sir. Exhibit B is a structure map drawn on
17 the top of the Devonian formation, covering the identical
18 area shown in Exhibit A.

19 Q. Do you want to review this at the same time you
20 look at Exhibit Number C, the following exhibit? Would
21 that be better for you?

22 A. It might be clearer to put both of them, B and C,
23 in front of you at the same time.

24 Q. All right, why don't we go to those two, and then
25 could you just explain to Mr. Catanach why from a

1 geological point of view this particular location is
2 necessary?

3 A. Yes, sir. As you can see on Exhibit C, the
4 Leaping Lizard Number 1 well crossed a fault approximately
5 100 foot into the Mississippian section.

6 Prior to crossing that fault, that wellbore was
7 running higher than any well in the region, which is
8 normally a very good sign. Usually if you're running high
9 at the top of the Miss., you're running high at the
10 Devonian.

11 Approximately 100 foot into the Mississippian, we
12 encountered a fault which had about a 75-foot fault zone.
13 We then went downthrown, and by the time we drilled into
14 the top of the Devonian we were -- whereas we were about 50
15 feet high at the top of the Miss, we ended up 75 feet low
16 to the nearest well, which is the Marbob Lobo Number 1 to
17 the north. So we encountered the formation in a downthrown
18 and structurally low location.

19 Even though we were downthrown at that point, we
20 DST'd the formation and recovered about 1800 foot of free
21 oil. But we -- There was a large decrease in pressure
22 between the initial shut-in and the final shut-in, which
23 indicated we had a limited reservoir.

24 After the drilling of the Leaping Lizard Number
25 1, we went back, reworked our data to -- This was done on a

1 3-D survey to determine if we could define where this fault
2 was. We ran FMI logs after the drilling of the well to
3 identify the fault zone.

4 So we developed a -- so we have a fairly good
5 idea of where the fault is at and the trend of the fault
6 and the magnitude of the fault.

7 After remapping this structure, we come up with a
8 fairly small structure. On the Devonian, you want to be at
9 the very optimal highest location you can on that
10 structure.

11 So that's the reason for this bottomhole
12 location.

13 Q. So what we're doing is, we're moving to a new
14 location. How from the original surface location are we
15 moving this well?

16 A. The kick would be about 275 feet northeast, north
17 65 degrees east, from the existing location. We have a
18 window of about 50 foot that we feel we can stay within
19 that 50-foot window, and from what I understand, maybe be a
20 lot more accurate than that.

21 Q. Do you anticipate that your oil column is going
22 to be separate from that encountered in the Lobo well?

23 A. Yes, sir, we believe -- There's also a chance
24 there may be fault separation between these two structures.

25 But at the minimum, the oil-water contact is

1 somewhere around a minus 6000, between minus 5975 and 6000,
2 in the Lobo structure. And it will certainly be there or
3 higher in this structure. We believe it will probably be
4 higher, just because these structures only seem to be about
5 a 30- to 35-foot oil column in them.

6 Q. At approximately what depth do you anticipate
7 encountering the Devonian in the proposed well?

8 A. It would be 6925 feet.

9 Q. In your opinion, will one well effectively drain
10 this small Devonian feature?

11 A. Oh, yes, sir, without any question.

12 Q. And what sort of recoveries do you estimate you
13 can achieve?

14 A. Using a 35-foot oil column, which is very common
15 for in here, and the 40 acres, which is probably stretching
16 the size of this structure, around 200,000 to 250,000
17 barrels.

18 Q. Let's go to what has been marked as Marbob
19 Exhibit D, or Exhibit 6, the schematic on the well.

20 Could you review the information on this for Mr.
21 Catanach?

22 A. Yeah, this is a schematic showing how we plan to
23 deviate this well. The reason that we're planning on
24 deviating this well versus drilling a straight hole is,
25 there could be substantial savings of on the order of

1 \$100,000 to \$250,000 while we're drilling a straight hole.

2 Q. The reasons for the savings are what?

3 A. Well, as you can see on here, we're not going to
4 kick the well till 9000 feet. So there's 9000 feet of new
5 hole that we don't have to drill in that.

6 There's also two strings of pipe that we don't
7 have to set.

8 So that's primarily the biggest cost savings.

9 Q. By directionally drilling those wells, what does
10 that do to your chance of actually being able to obtain the
11 optimum structural position?

12 A. Well, we believe we'll be able to more accurately
13 target the structure versus using a standard straight-hole
14 location, because we'll be taking -- every joint, we'll be
15 taking a bottomhole survey to get the orientation and
16 position of the tool, so we'll be able to more precisely
17 drill to our estimated target site. And if we don't get it
18 at that point, we can also back up to it more precisely.

19 Q. And Exhibit D shows both a vertical and
20 horizontal depiction of how you intend to actually drill
21 and complete the well?

22 A. Yes, sir.

23 Q. Will a copy of the survey of the well be provided
24 the Oil Conservation Division?

25 A. Yes, it will.

1 Q. How soon does Marbob hope to commence its
2 operations in this endeavor?

3 A. Within the next two months, certainly before
4 September.

5 Q. In your opinion, will approval of this
6 Application and the drilling of this well result in the
7 recovery of hydrocarbons that otherwise would be left in
8 the ground?

9 A. Yes, I believe it will.

10 Q. Will it otherwise be in the best interest of
11 conservation and the prevention of waste?

12 A. Yes, sir.

13 Q. Were Exhibits 1 through 6 either prepared by you
14 or compiled under your direction and supervision?

15 A. Yes, they are.

16 MR. CARR: Mr. Catanach, at this time we move the
17 admission of Marbob Energy Corporation Exhibits 1 through
18 6.

19 EXAMINER CATANACH: Exhibits 1 through 6 will be
20 admitted as evidence.

21 MR. CARR: And that concludes my direct
22 examination of Mr. Hanagan.

23 EXAMINATION

24 BY EXAMINER CATANACH:

25 Q. Mr. Hanagan, is it -- You said it was Marbob's

1 position that they do not at this point want to form a
2 federal exploratory unit?

3 A. Yes, sir, we would prefer not to.

4 Q. Now, you did mention later on that Marbob might
5 entertain the formation of a nonstandard proration unit?
6 Is that correct?

7 A. Yes, sir, if we were successful in making a well
8 here, we would come back to the Commission and seek a
9 nonstandard 160-acre unit.

10 Q. So that's -- Are you saying that if you do get a
11 producing well, that will be done by Marbob, you will come
12 back and seek that?

13 A. Yes, sir, we will do that.

14 Q. Do you believe that that's -- that protects the
15 interest owners in Section 33?

16 A. Yes, sir, it protects them at the detriment of
17 the interest owners in Section 4, though.

18 Q. This structure appears to extend into Section 33;
19 is that right, Mr. Hanagan?

20 A. Yes, sir.

21 Q. And you said that one well will drain this entire
22 structure.

23 A. Uh-huh.

24 Q. So is it -- Should those interest owners in
25 Section 33 share in the production in this well?

1 A. Yes, sir, they probably should.

2 Q. Is the interest ownership, the overrides within
3 the other lease, the lease you have colored in yellow -- Is
4 that a different lease, first of all?

5 A. Yes, sir, each one are separate leases.

6 Q. Are the overrides different in that lease from
7 the other two?

8 A. Yes, sir, each lease has differing overriding
9 royalty. There's some common within it, but there's some
10 differing in it.

11 Q. Okay. Did you guys hear from any of the royalty
12 interest owners in this lease here, the yellow lease?

13 A. No, sir, the only royalty owners that have
14 protested was a portion of the royalty owners in the green
15 area, the Foster group, I believe it is.

16 There were several royalty owners within the
17 green lease that didn't protest. There was three that did
18 not protest.

19 Q. Is this pool currently -- It's spaced on 40 at
20 the current time?

21 A. Yes, sir, it had temporary 160s that expired at
22 least a year ago, six months to a year ago, and they -- and
23 it's presently back to the standard.

24 Q. It appears, from at least this one well that
25 you're planning on drilling, that the spacing may be more

1 adequately established at 160; is that your opinion?

2 A. Yes, sir. In this case, you know, this structure
3 is going to be in portions of that 160 acres.

4 Q. How many other producing wells are there in this
5 pool?

6 A. The Lobo Number 1, which is on the map, and the
7 Thornton Operating Number 1 McClellan, which is about a
8 mile north of this, and then there's one other temporarily
9 abandoned well in between the two which will be the subject
10 of the next hearing. So three.

11 Q. Do you feel like these structures are in
12 communication?

13 A. No, sir.

14 Q. So it may be in the best interest to address each
15 of these wells separately in terms of spacing and such?

16 A. It really would. In fact, it's almost going to
17 have to be addressed separately if -- Well, you can see, if
18 we did a 160, including the affected acreage here, what do
19 you do with the next one up? Which would also include the
20 next well that we're getting ready to discuss.

21 So they are -- really would be better addressed
22 separately.

23 Q. What kind of data did you use to delineate that
24 structure?

25 A. The entire structure was originally delineated

1 with a 3-D seismic program. The Lobo Number 1 was drilled
2 on the 3-D seismic, as was the Leaping Lizard Number 1.

3 With our seismic program, the deepest information
4 we felt was reliable was the mapping at the top of the
5 Mississippian formation, which is why the Leaping Lizard,
6 we did not see this fault on our seismic information.

7 Since then, we ran a formation microimager to
8 image the fault after we drilled the Leaping Lizard Number
9 1, and combined that with some local knowledge and
10 subsurface mapping, and that's where we've come up with a
11 new interpretation on this structure, which is not much
12 different than the old interpretation. There's just a
13 shift in it, compared to that -- the case that we filed for
14 the original unorthodox. You could go back and see, it
15 hasn't changed much.

16 Q. Okay. Did you say that you felt like the oil-
17 water contact was higher in this well than it was in the
18 Lobo well?

19 A. Yes, sir, just because the Lobo well was high to
20 a well that's another half mile north from it, and it was
21 about 60 foot high to that well, yet it still had only a
22 35-foot oil column in it.

23 That's why we don't believe a common oil-water
24 contact of between minus 5975 and minus 6000 could be used
25 in this field.

1 North King Camp, which is directly to the south,
2 has a different oil-water contact. And then the Thornton
3 McClellan well to the north, which is in this field, also
4 has -- It's like minus 6015.

5 So there's not a common oil-water contact;
6 there's more a common oil column in this structure, which
7 appears to be 30 to 35 feet.

8 Q. The proposed unorthodox bottomhole location, does
9 that represent the highest structural point on that?

10 A. Yes, sir, we believe that's the most optimum
11 location.

12 EXAMINER CATANACH: I have nothing further of
13 this witness, Mr. Carr.

14 MR. CARR: Mr. Catanach, if I can make just a
15 brief statement.

16 What we've got here, obviously, is a small
17 Devonian structure where the geology does not fit very
18 comfortably within the rules of the Oil Conservation
19 Division.

20 As you can see, what we've got is a structure,
21 the center of which is really located where three federal
22 leases come together on a section line. The problem is, in
23 terms of correlative rights effects, not the base royalty,
24 which is all federal, not the working interest owners,
25 which is common, but the overriding royalty interest.

1 The real problem that is posed in situation for
2 the working interest owners, for the operator, is simply if
3 they were required to form a federal unit, lease
4 segregation would result and it would probably kill the
5 project.

6 We have no objection to coming back under an
7 order that says if we make a well we will need to address
8 this separate source of supply and form a spacing unit of
9 an appropriate size and shape to accommodate all the
10 interest owners.

11 But I do want to point out that silence in the
12 order or a requirement to form a voluntary unit, would
13 probably kill the plans to go forward with the well at this
14 time.

15 Certainly the interest owners, the overriding
16 royalty interest owners in Section 33, have an interest in
17 the production, and we're not attempting to do anything but
18 accommodate those royalty interests in the best way we can
19 under existing rules.

20 But the problem posed by the letter from the
21 overrides is that lease segregation would in fact -- could
22 very well discourage Marbob from going forward with the
23 attempt to directionally drill this well.

24 EXAMINER CATANACH: Okay, thank you, Mr. Carr.

25 Is there anything further in this case?

1 MR. CARR: I have nothing further in this case.

2 EXAMINER CATANACH: There being nothing further,
3 Case 11,306 will be taken under advisement.

4 (Thereupon, these proceedings were concluded at
5 9:23 a.m.)

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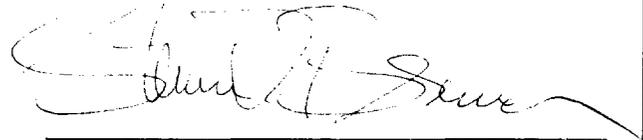
CERTIFICATE OF REPORTER

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.

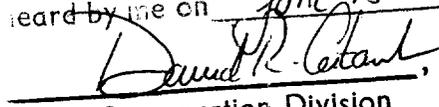
I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL June 17th, 1995.



STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 1998

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 11306 heard by me on June 15 1995.
, Examiner
Oil Conservation Division