

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING)
CALLED BY THE OIL CONSERVATION)
DIVISION FOR THE PURPOSE OF)
CONSIDERING:) CASE NO. 11,369
)
APPLICATION OF ENRON OIL AND GAS)
COMPANY)
_____)

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

ORIGINAL

BEFORE: DAVID R. CATANACH, Hearing Examiner

RECEIVED

SEP 7 1995

August 24th, 1995

Oil Conservation Division

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH, Hearing Examiner, on Thursday, August 24th, 1995, at the New Mexico Energy, Minerals and Natural Resources Department, Porter Hall, 2040 South Pacheco, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

* * *

I N D E X

August 24th, 1995
 Examiner Hearing
 CASE NO. 11,369

	PAGE
APPEARANCES	3
APPLICANT'S WITNESSES:	
<u>PATRICK J. TOWER</u> (Landman)	
Direct Examination by Mr. Carr	4
Examination by Examiner Catanach	9
<u>BARRY L. ZINZ</u> (Geologist)	
Direct Examination by Mr. Carr	11
Examination by Examiner Catanach	14
<u>RANDALL S. CATE</u> (Engineer)	
Direct Examination by Mr. Carr	15
Examination by Examiner Catanach	19
REPORTER'S CERTIFICATE	21

* * *

E X H I B I T S

Applicant's	Identified	Admitted
Exhibit 1	6	9
Exhibit 2 (not presented)	10	-
Exhibit 3	12	13
Exhibit 4	16	19
Exhibit 5	16	19
Exhibit 6	17	19

* * *

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 11:30 a.m.:

3 EXAMINER CATANACH: At this time we'll call Case
4 11,369.

5 MR. CARROLL: Application of Enron Oil and Gas
6 Company for an unorthodox oil well location, Lea County,
7 New Mexico.

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

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

13 We represent Enron Oil and Gas Company in this
14 case, and I have three witnesses.

15 EXAMINER CATANACH: Any other appearances?
16 Can I get the witnesses to stand and be sworn in?
17 (Thereupon, the witnesses were sworn.)

18 PATRICK J. TOWER,
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 full name and place of
24 residence?

25 A. My name is Patrick Tower. I reside in Midland,

1 Texas.

2 Q. By whom are you employed and in what capacity?

3 A. By Enron Oil and Gas Company as a project

4 landman.

5 Q. Mr. Tower, have you previously testified before
6 this Division?

7 A. Yes, I have.

8 Q. At the time of that testimony, were your
9 credentials as a petroleum landman accepted and made a
10 matter of record?

11 A. Yes, they were.

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

14 A. Yes, I am.

15 Q. And are you familiar with the status of the lands
16 in the subject area?

17 A. Yes, I am.

18 MR. CARR: Would you briefly -- Are the witness's
19 qualifications acceptable?

20 EXAMINER CATANACH: Yes, they are.

21 Q. (By Mr. Carr) Mr. Tower, could you briefly
22 summarize for Mr. Catanach what Enron seeks with this
23 Application?

24 A. Yes, Enron is seeking authorization to drill to
25 the Bone Spring formation in the Undesignated Red Hills-

1 Bone Spring Pool for the drilling of its Diamond "18"
2 Federal Number 6 well at an unorthodox of 2310 feet from
3 the south line and 1980 feet from the west line of Section
4 18, Township 25 South, Range 34 East, in Lea County, New
5 Mexico.

6 The east half of the southwest quarter of Section
7 18 would be the standard 80-acre spacing proration unit for
8 this well.

9 Q. Would you advise Mr. Catanach as to the status of
10 the proposed well location, the factors that come into play
11 in requiring the well be drilled at this particular spot?

12 A. Yes. Do you want to go to Exhibit 1?

13 Q. Let's do that.

14 A. Okay, Exhibit 1 is a land plat which will help me
15 depict this a little bit better.

16 On the land plat in red, the outline is the 80-
17 acre proration unit that we're requesting.

18 Within that red outline there are two circles.
19 The southern little circle was the original orthodox
20 location that Enron applied for, which was at 1980 feet
21 from the south and from the west line of Section 18. The
22 northern circle depicts the unorthodox location at the
23 aforementioned 2310 feet from the south and 1980 feet from
24 the west.

25 The yellow represents the outline of Enron's

1 leasehold, which Enron owns 100 percent working interest
2 and is operator of these leases and the entire field. As
3 you can note, any offsetting 80-acre proration unit is
4 owned by Enron. For this reason, no notice was sent to any
5 offset operators, because we were the operator.

6 Within the special pool rules for the Red Hills
7 Pool it requires 150-foot setbacks for the well locations,
8 and for this reason the well has been moved.

9 The original location that I mentioned that Enron
10 sought was not acceptable to the BLM, due to archeological
11 reasons. It was an archeological hot spot. And at their
12 request, the only direction that we could move was to the
13 north, to the current location we are applying for.

14 Q. Now, Mr. Tower, the original well location was
15 -- The well was originally proposed at a standard well
16 location?

17 A. That is correct.

18 Q. And the 80-acre spacing is a standard proration
19 unit in the Red Hills-Bone Springs Pool --

20 A. This is correct.

21 Q. -- is that right?

22 A. That is correct.

23 Q. Now, there is no Exhibit 2 in our exhibit
24 package?

25 A. That is correct. There --

1 Q. Why is that?

2 A. Exhibit 2 was the documentation from the
3 archeologist, documenting the arch. site and depicting it.
4 We have requested that. However, they are behind. It
5 hasn't even been provided the BLM, although our personnel
6 met on the ground when this decision was made.

7 What we request, as soon as we can secure the
8 plat just documenting the site, we will provide that,
9 hopefully in the next few days, to the Commission [sic].

10 Q. And that will then be submitted as our Exhibit 2,
11 if Mr. Catanach is agreeable?

12 A. That is correct.

13 Q. Are there also geological reasons that the well
14 is located in the northern 40 in this proration unit?

15 A. Yes, there are, and our geological witness coming
16 up, Mr. Zinz, will testify to these.

17 One thing to note, within each 40-acre area of
18 this 80 there are two standard locations, either the
19 northern 40 where we're at, or in the southern 40. The
20 standard location that will be allowed in the southern 40
21 is not acceptable, primarily due to geological reasons,
22 which Mr. Zinz will testify.

23 Thus, the primary location being the one we're
24 applying for to the north.

25 Q. Will Enron call both geological and engineering

1 witnesses to review the technical portions of the case?

2 A. Yes, we will.

3 Q. Was Exhibit Number 1 prepared by you?

4 A. Yes, it was.

5 MR. CARR: At this time, Mr. Catanach, we move
6 the admission of Enron Exhibit Number 1.

7 EXAMINER CATANACH: Exhibit Number 1 will be
8 admitted as evidence.

9 MR. CARR: That concludes my direct examination
10 of Mr. Tower.

11 EXAMINATION

12 BY EXAMINER CATANACH:

13 Q. Mr. Tower, the acreage outlined in yellow, that's
14 all commonly owned by Enron?

15 A. Yes. In fact, that is one -- in fact, both
16 sections -- The lease is a little larger, however, that is
17 one federal lease that covers both sections.

18 Surrounding these sections to the west and to the
19 east, although I have not colored our entire acreage
20 position, Enron does own the majority of acreage in the
21 sections around this as well.

22 Q. Now, you -- Enron has met with the BLM, and they
23 have -- they did deny the original location?

24 A. That is correct, and advised us that they -- The
25 only direction as far as with regard to that original

1 application was that we had to move north.

2 In essence, we're 333 feet north of the original
3 applied-for location, and I believe approximately 180 feet
4 north of the 150-foot setback circle, the northern edge of
5 that circle.

6 Q. So what you're going to provide me is a -- in
7 your Exhibit Number 2, is going to be a map showing the
8 location of the arch. sites?

9 A. Yes.

10 Q. Is that going to include any correspondence from
11 BLM?

12 A. I don't believe we have secured any at this
13 point. And talking to our regulatory person, I'm not sure
14 if we'll get anything till the final permit is cleared.
15 We'll be glad to provide anything that the BLM provides us.

16 Generally, the archeological consultants work up
17 a report, and they provide it both to the operator and to
18 the Bureau of Land Management, and whatever we secure we'll
19 be glad to provide. Generally, they provide us with some
20 type of write-up and generally a plat defining these sites.

21 EXAMINER CATANACH: Okay, that will probably be
22 sufficient.

23 I have nothing further.

24 MR. CARR: That concludes our examination of Mr.
25 Tower, and at this time I would call Barry Zinz.

1 BARRY L. ZINZ,

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

4 DIRECT EXAMINATION

5 BY MR. CARR:

6 Q. Will you state your name and place of residence?

7 A. Barry Zinz, Midland, Texas.

8 Q. By whom are you employed?

9 A. Enron Oil and Gas Company.

10 Q. And what is your position with Enron?

11 A. Geologist.

12 Q. Have you previously testified before this
13 Division?

14 A. Yes, I have.

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

18 A. They were.

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

21 A. I am.

22 Q. Have you made a geological study of the area
23 involved in this Application?

24 A. I have done that.

25 MR. CARR: Are the witness's qualifications

1 acceptable?

2 EXAMINER CATANACH: Yes, they are.

3 Q. (By Mr. Carr) Mr. Zinz, how many wells has Enron
4 drilled in the Red Hills-Bone Spring Pool?

5 A. Thirty-one wells.

6 Q. Let's go to what's been marked Exhibit Number 3.
7 Would you identify this and then review it for Mr.
8 Catanach?

9 A. This is an isopach map of the third Bone Spring
10 producing sands in the Red Hills Pool. Contour interval is
11 20 feet and the porosity cutoff -- it's a porosity isopach
12 map -- is nine percent.

13 And you might note, too, that this map may show
14 our leasehold a little bit more than what Pat's exhibit --
15 And you can see all the yellow there with reference to your
16 question that you had.

17 Q. All right. And what does this exhibit show you
18 about the drilling locations available in the subject
19 spacing unit?

20 A. As was pointed out a while ago by Pat, there's
21 two legal locations, one in the north part of the proration
22 unit, one in the south part of the proration unit.

23 As you can see, we're pushing the limits of this
24 field moving to the south in Section 18, and at no time did
25 we consider that southern legal location. You can see that

1 the zero contour, porosity contour, comes through that
2 location. And we were also looking towards the northern
3 part of the proration unit.

4 Q. By moving the location 500 feet north, how many
5 additional feet of sand do you think you've acquired by
6 doing that?

7 A. By moving the location to the north there, I
8 think it was 300 -- 330 feet.

9 We're gaining about 10 feet of pay there. I show
10 at the standard location to be about 45 feet thick. At
11 this new location, the unorthodox, would be 55 feet thick.

12 Q. From a geological point of view, will the well at
13 the proposed location effectively drain the reserves in
14 this sand under the proration unit?

15 A. I believe it will, yes, sir.

16 Q. Was Exhibit Number 3 prepared by you?

17 A. It was.

18 MR. CARR: At this time, Mr. Catanach, we move
19 the admission of Enron Oil and Gas Company Exhibit Number
20 3.

21 EXAMINER CATANACH: Exhibit Number 3 will be
22 admitted as evidence.

23 MR. CARR: I have one further question, Mr.
24 Catanach.

25 Q. (By Mr. Carr) Mr. Zinz, there's some blue lines

1 shown on this exhibit, some semicircles, north of the
2 proration unit. What do those show?

3 A. Those are drainage radiuses of those particular
4 wells, and Mr. Cate, our engineer, will address that.

5 MR. CARR: I have nothing further.

6 EXAMINATION

7 BY EXAMINER CATANACH:

8 Q. Mr. Zinz, what wells in the southern portion of
9 the field did you use to construct this isopach map?

10 A. I used all these wells that you see the red
11 numbers by. This is the -- At this time, this is the
12 extent of the well control that we have for the field.
13 There's none further to the south. But I did use all the
14 wells that you see, within the mapped area here.

15 The ones you may be referring to there, these
16 shallow wells, are so noted. Those did not go deep enough.

17 Q. There's a lack of well control in the area of
18 your proposed proration unit. Do you feel comfortable with
19 the way you've mapped this reservoir?

20 A. Considering the extent of the field and where we
21 do have the well control and wells that are outside the
22 pool that are dry holes, and knowing the reservoir the way
23 we do, I feel comfortable, yes, sir.

24 EXAMINER CATANACH: Nothing further.

25 MR. CARR: At this time we would call Mr. Cate.

1 A. Yes.

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

4 EXAMINER CATANACH: Yes, they are.

5 Q. (By Mr. Carr) Mr. Cate, would you identify for
6 the Examiner and review Exhibits 4 and 5?

7 A. Yes, Exhibits 4 and 5 are decline-curve
8 projections that I performed on the Diamond 18 Federal
9 Number 2 well and the Diamond 18 Federal Number 3 well.

10 If you refer back to Exhibit 3, they are
11 indicated -- The Number 2 well is exactly due north of the
12 proposed Diamond 18 Number 6 well, and it's also designated
13 by 73 feet of net pay on various maps.

14 And then the Number 3 well is the well that is
15 due east of it, designated by the 65-foot contour.

16 The purpose of these decline curves and forecasts
17 was to arrive at a projected estimated ultimate recovery,
18 and for both wells those are shown on the right bar graph
19 about -- oh, a quarter of the way down, it shows the EUR.

20 For the Diamond 18 Federal Number 2, the
21 projected EUR is 113,855 barrels of oil, and for the
22 Diamond 18 Number 3 well, the EUR is estimated to be
23 159,637 barrels of oil.

24 Q. Let's go on to Exhibit Number 6. Can you first
25 identify this and then review the information and your

1 conclusions based on this data?

2 A. Yes, Exhibit Number 6 is a tabulation of
3 reservoir data used in calculating drainage area and then a
4 table that shows those calculations.

5 Under the reservoir data, the average porosity
6 used was 12 percent, average oil saturation 60 percent,
7 formation volume factor of 1.8, recovery factor estimates
8 15 percent, and that gives us a recoverable barrels of oil
9 per acre-foot of 46.55 used in your drainage calculation.

10 It also shows the decline type as hyperbolic, and
11 that's also what the decline curves, Exhibits 4 and 5, also
12 show.

13 What I wanted to look at was the effect of the
14 unorthodox location on the existing offset producers.
15 Right now, I would note back on Exhibit Number 3 that our
16 Number 1 well is a current drilled well. It is the nearest
17 well to the northwest, designated by Number 1 also, the big
18 red letters of -- numbers -- of 69 feet. It has not yet
19 been completed.

20 And so the three most immediate wells I show in
21 this table here, the Number 2 well, with its expected EUR
22 and 73 feet of pay, would come to a calculated 33.5 acres
23 of drainage. And then the drainage radius resulting from
24 that is 682 feet. That blue arc is what you see on the
25 southern edge of that well.

1 And the exact same procedure was done with the
2 Number 3 well, arriving at 52.7 acres expected drainage and
3 855 feet.

4 Now, again, the Number 1 well has not yet been
5 completed, and I treated it as though it should be capable
6 of the better or larger drainage area, so I used the 52.7
7 acres and the same resulting drainage radius on it. Its
8 appearance logwise right now -- We do have the logs, and it
9 appears from that and the shows while drilling, drilling
10 times, that it should be a very similar well. So also,
11 applying that same logic to the Diamond 18-6 location, as
12 yet to be drilled, and the anticipated pay thickness, based
13 on Mr. Zinz's map.

14 Then the bottom part of the table shows that
15 would -- the resulting EUR would be 134.9 thousand barrels,
16 estimated pay thickness of 55 feet, again, using the more
17 optimistic drainage acres of 52.7 and that drainage radius.

18 We've plotted all those up, and you can see that
19 it appears that a well at the unorthodox location will not
20 affect the drained reserves that will -- or what will be
21 drained from the Diamond 18's Number 1, 2 or 3.

22 Q. In your opinion, will the proposed well recover
23 reserves that otherwise would be left in the ground?

24 A. Yes, it will.

25 Q. Will approval of this Application be in the best

1 interests of conservation, the prevention of waste and the
2 protection of correlative rights?

3 A. Yes.

4 Q. How soon does Enron hope to proceed with the
5 drilling of this well?

6 A. We could proceed as soon as three weeks. We've
7 got a rig that we've kept active out here, and it could
8 return to this area in approximately three weeks, so we
9 could use the order possibly as soon as three weeks.

10 Q. Were Exhibits 4 through 6 prepared by you?

11 A. Yes, they were.

12 MR. CARR: At this time, Mr. Catanach, we move
13 the admission into evidence of Enron Exhibits 4 through 6.

14 EXAMINER CATANACH: Exhibits 4 through 6 will be
15 admitted as evidence.

16 MR. CARR: And that concludes my direct
17 examination of Mr. Cate.

18 EXAMINATION

19 BY EXAMINER CATANACH:

20 Q. Mr. Cate, the drainage areas of these wells in
21 this area of the pool, you say, are lower than the typical
22 drainage areas?

23 A. We have seen a wide variety, now, as we've been
24 drilling this field, the Red Hills-Bone Spring field. Some
25 drainage areas are calculating over 80 acres, which is the

1 field rule, some we've had as low as 20s.

2 And as a matter of fact, we will be coming in in
3 two weeks to do a field-rules hearing that we will ask for
4 basically a simultaneous dedication on these 80s in order
5 to get a second well on them. We're starting to see a lot
6 of wells -- or a lot of spacing units are probably going to
7 need two wells on them to fully develop the field.

8 So we have seen -- And in this part of the field,
9 the southern edge here, we seem to be losing some
10 permeability, perhaps because we are approaching the edge
11 and therefore you would expect the lower drainage radius to
12 come with that.

13 EXAMINER CATANACH: I have nothing further.

14 MR. CARR: That concludes our presentation in
15 this case.

16 EXAMINER CATANACH: There being nothing further
17 in this case, 11,369 will be taken under advisement.

18 (Thereupon, these proceedings were concluded at
19 11:50 a.m.)

20 * * *

21

22

23

24

25

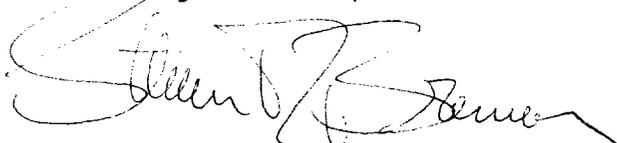
CERTIFICATE OF REPORTER

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.

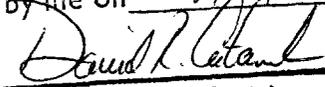
WITNESS MY HAND AND SEAL August 30th, 1995.



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 8/24 1995.


_____, Examiner
Oil Conservation Division