

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

RECEIVED

IN THE MATTER OF THE HEARING)
 CALLED BY THE OIL CONSERVATION)
 DIVISION FOR THE PURPOSE OF)
 CONSIDERING:) CASE NO. 11,316
)
 APPLICATION OF MARATHON OIL)
 COMPANY)
 _____)

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

ORIGINAL

BEFORE: MICHAEL E. STOGNER, Hearing Examiner

July 13th, 1995

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, MICHAEL E. STOGNER, Hearing Examiner, on Thursday, July 13th, 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.

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I N D E X

July 13th, 1995
 Examiner Hearing
 CASE NO. 11,316

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<u>KURT A. MILLER</u> (Geologist)	
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A P P E A R A N C E S

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* * *

1 WHEREUPON, the following proceedings were had at
2 9:10 a.m.:

3 EXAMINER STOGNER: Call next case, Number 11,316.

4 MR. CARROLL: Application of Marathon Oil Company
5 for an unorthodox oil well location, Lea County, New
6 Mexico.

7 EXAMINER STOGNER: Call for appearances.

8 MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of
9 the Santa Fe law firm of Kellahin and Kellahin, appearing
10 in association with Tom Lowry, a member of the Texas Bar
11 and an attorney for Marathon Oil Company.

12 We represent the Applicant in this case, and we
13 have one witness to be sworn.

14 EXAMINER STOGNER: Will he witness please stand
15 to be sworn at this time?

16 (Thereupon, the witness was sworn.)

17 KURT A. MILLER,

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

20 DIRECT EXAMINATION

21 BY MR. KELLAHIN:

22 Q. Mr. Miller, for the record would you please state
23 your name and occupation?

24 A. My name is Kurt Miller, and I'm a geologist for
25 Marathon Oil Company.

1 Q. On prior occasions, Mr. Miller, have you
2 testified before this agency as an expert in petroleum
3 geology?

4 A. Yes, I have.

5 Q. Have you prepared a geologic study in association
6 with others to determine where within this particular area,
7 which includes Section 33, that you and your company desire
8 to locate a well for the Blinebry and the Drinkard?

9 A. Yes.

10 Q. Have you completed a geologic study to tell you
11 what the optimum location is?

12 A. Yes, we have.

13 Q. And based upon that study, do you have a
14 recommendation to the Division Examiner?

15 A. We are -- We would like an unorthodox location at
16 -- in Section 33, at 2210 feet from the south line and 1310
17 feet from the east line.

18 Q. The reasons for that location are based upon a
19 combination of geology and a topographic reason?

20 A. That is correct. We originally proposed a
21 location 100 feet to the north of that location. However,
22 we had some surface problems with high-pressure injection
23 and gas lines.

24 MR. KELLAHIN: At this time, Mr. Examiner, I
25 would tender Mr. Miller as an expert geologist.

1 EXAMINER STOGNER: Mr. Miller is so qualified.

2 Q. (By Mr. Kellahin) Mr. Miller, let's take Exhibit
3 1, which is the locator map, and describe some of the basic
4 information to the Division.

5 First of all, what's the significance of the
6 color code, the yellow code?

7 A. The yellow color-coded area is where Marathon has
8 a hundred percent working interest on those leases.

9 Q. All right, let's deal specifically with the north
10 half of the southeast quarter. That 80-acre tract, does
11 that, to the best of your knowledge, constitute a single
12 lease?

13 A. That is a single lease, yes.

14 Q. And Marathon has obtained the right to drill that
15 lease, based upon an arrangement with Shell?

16 A. Yes, we obtained a term assignment from Shell,
17 and we have the rights to the nonunitized intervals, which
18 includes the Blinebry as the main objective.

19 Q. As to the Blinebry and as to the Drinkard, both
20 of those formations, if productive, would be spaced upon
21 40-acre oil spacing, would they not?

22 A. That would be the standard spacing, yes.

23 Q. And the red dot, while it's quite large and
24 straddles both 40s, the well, in fact, is to located in the
25 40 acres that's to the east.

1 A. That's correct.

2 Q. It would be the northeast of the southeast, that
3 tract?

4 A. Right.

5 Q. All right. The dashed inner square represents
6 what?

7 A. That is the standard setback for each 40-acre
8 proration unit, 330 feet from each line.

9 Q. All right. The surface limitation in this area
10 dealt with pipelines?

11 A. Yes, it dealt with high-pressure water-injection
12 lines -- there's a waterflood in the area -- and also a
13 high-pressure gas line.

14 Q. All right. And moving it 100 feet to the south,
15 then, as currently readvertised on the docket, avoids those
16 type of limitations?

17 A. Yes, that is correct.

18 Q. And does that location still afford you an
19 opportunity, geologically, to access both of these
20 reservoirs?

21 A. Yes, and it's based primarily on location for the
22 Blinebry, is the primary objective.

23 Q. Is the proposed unorthodox location the optimum
24 location within that 40-acre tract, as opposed to a
25 standard location?

1 A. Yes, we believe at a standard location we would
2 not be able to encounter the geologically favorable
3 position within the Blinebry Reef.

4 Q. Are those geologic conclusions based upon seismic
5 information?

6 A. Primarily, yes.

7 Q. Was the seismic information evaluated by you with
8 the assistance of a geophysicist?

9 A. That is correct.

10 Q. Let's describe the process, then. If you'll turn
11 to Exhibit 2, identify for the Division what you're
12 representing with that exhibit.

13 A. This exhibit is just a shot-point map showing
14 that we have continuous 3-D seismic coverage over the
15 entire map area. It is actually part of a much larger
16 105-square-mile group shoot over the Vacuum field and shows
17 that we have continuous coverage over the area in question.

18 Q. All right, sir, let's turn, then, to Exhibit 3.
19 Describe for us the surface that you're mapping here.

20 A. This is a -- This is mapped on a Lower Blinebry
21 -- top of the Lower Blinebry correlation point, and there
22 are well data control points.

23 A lot of the wells shown here are actually
24 shallow wells, which do not give us control, but all of the
25 wells that have penetrated the Blinebry have a

1 corresponding subsurface structural top.

2 Q. All right, let's see how that works. If you'll
3 look in the target 40-acre tract, there are three existing
4 wellbores, only one of which has a subsea datum point next
5 to it; is that correct?

6 A. That is correct, and that is the only
7 penetration. Most of those wells are productive out of the
8 Abo Reef unit, which is a deeper producing horizon.

9 Q. So as we look at the display, if we find a black
10 dot that has an accompanying subsea elevation on the
11 structure map, then that is a data point by which you've
12 actually penetrated the top of this Lower Blinebry
13 structure?

14 A. That is correct, and there is only one Blinebry
15 producer in the area, which is shown by the green dot.

16 Q. All right. And that would be the tract up to the
17 northeast?

18 A. Correct.

19 Q. Describe for us what you see as a geologist that
20 causes you to conclude that you need the unorthodox
21 location.

22 A. Well, this map, as I said, is based on geologic
23 data and geophysical data, tying in the 2-A time structural
24 map with the subsurface data.

25 And on the seismic data you do see a reef

1 buildup, a thickening of the carbonate unit within the
2 Blinebry formation, which occurs straddling these two 40-
3 acre proration units, so that the structural high shown by
4 the contour, minus 2750 feet, near our proposed location,
5 is the top of that reef buildup.

6 Q. When you look at the top of the reef buildup,
7 within other portions of that shape, you're simply limited
8 by surface constraints on locating the well, are you not?

9 A. That is correct, and we did make an attempt to be
10 orthodox location in regard to the lease to the north.

11 Q. All right. And so the encroachment, then, is
12 only between the two spacing units that have the same base
13 lease?

14 A. Right, within the same base lease.

15 Q. This deals with the Blinebry. Do you have a type
16 log so that we can see what your relationship is with this
17 structure map and a type log?

18 A. Yes, the type log is Exhibit Number 4, which
19 shows the Blinebry, top of the Blinebry formation. This
20 map was actually made on the top of the Lower Blinebry,
21 which, on the type log, would occur at approximately 6850
22 feet.

23 Q. All right. And the other potential reservoir
24 that you want to test would be the Drinkard?

25 A. That is correct, and on the type log that top of

1 Drinkard is about 7900 feet.

2 Q. When you're looking for the opportunity to
3 produce out of the Blinebry, is it -- is structure of
4 significance?

5 A. The structure is significant in that it indicates
6 where the structural or the carbonate buildup has occurred
7 within that reef unit, so that the higher on top of that
8 structure is a thicker reef buildup, and we feel that that
9 would be the porous reservoir interval.

10 Q. When we move to Map 5, we're looking at the
11 Drinkard. Would you identify and describe that display for
12 us?

13 A. Yes, that is a subsurface map done on the
14 Drinkard with, again, penetrations of the Drinkard shown
15 with wells that have a subsurface structural top. The
16 green dots are Drinkard producers.

17 The well located just northeast of our proposed
18 location has actually been plugged back from the Drinkard.
19 That's a Marathon-operated well. We've plugged back from
20 the Drinkard in that well and have completed within the
21 Blinebry interval.

22 Q. Is there a component of structure that is of
23 significance to you as a geologist when you look at the
24 Drinkard potential?

25 A. Yes, it's significant in regard to the Drinkard

1 and to the Blinebry in that you see a trend there where you
2 come from the northwest, and it's fairly flat, a lower
3 leaf, and then you have a very steeply dipping profile off
4 to the southeast, and that is the Drinkard shelf margin
5 where -- it's a favorable location for reef buildups
6 occurring and is actually -- defines the other reef units.

7 The main reef producing interval out here would
8 be the Abo reef unit, which trends along that same shelf
9 margin.

10 Q. Will approval of this proposed unorthodox
11 location afford the opportunity to Marathon and the
12 interest owners, the best opportunity, to test for Blinebry
13 and Drinkard production in the spacing unit?

14 A. Yes, and in particular to the Blinebry. The
15 Drinkard is a secondary objective, but we would not drill
16 this as a standup -- just a Drinkard well.

17 Q. Has this well location been discussed with Shell?

18 A. Yes, it has.

19 Q. And do they have any objection to the proposed
20 location?

21 A. No, we obtained an amendment to our term
22 assignment where they would allow us to earn the entire 80-
23 acre lease with a -- one well location.

24 Q. They recognize, then, and concurred with the
25 technical information about the suitability of this

1 location in terms of how to best access the Blinebry?

2 A. Yes, they have.

3 MR. KELLAHIN: That concludes my examination of
4 Mr. Miller, Mr. Stogner.

5 We move the introduction of Marathon Exhibits 1
6 through 5.

7 In addition, Exhibit 6 is their certificate of
8 notification. The only party to be notified was Shell Oil
9 Company.

10 EXAMINATION

11 BY EXAMINER STOGNER:

12 Q. Mr. Miller, you said that topographic also was a
13 factor in the location, and that was due to --

14 A. Well, topographic -- Really, what I meant was,
15 there was a surface problem. It's not really a topographic
16 problem, it's really a -- has to do with the lines out in
17 the area. So there is a surface problem with the location
18 to the north.

19 MR. KELLAHIN: Mr. Examiner, I don't have a
20 display that will show the line configurations in the
21 section. I'm happy to provide that to you if you desire
22 it. I simply didn't get it drafted.

23 EXAMINER STOGNER: I think we can supplement that
24 with supplemental information. I was just wanting to put
25 it on the record that there's a -- quite a few production

1 lines, injection lines, and overhead wires; is that it?

2 THE WITNESS: Yes, that's correct.

3 EXAMINER STOGNER: Yeah, why don't you provide
4 that later? I don't think we need to mark it as an
5 exhibit, just as supplemental information --

6 MR. KELLAHIN: All right, sir.

7 EXAMINER STOGNER: -- to the case file.

8 Q. (By Examiner Stogner) And this is a farmout from
9 Shell; is that correct?

10 A. Yeah, we had a term assignment where we basically
11 exchanged another lease, 80-acre lease for their 80-acre
12 lease here, and that pertains to the nonunitized intervals.

13 Q. What is unitized out here? Just the Abo?

14 A. No, the Abo is unitized, the Abo Reef unit and
15 also shallower production, the Vacuum Glorieta and the San
16 Andres Grayburg.

17 Q. What unit is that?

18 A. The San Andres Grayburg? I think it's just -- I
19 think it's called the Vacuum, Vacuum unit. I'm not too
20 sure what the designation of that unit is. I think they're
21 all operated by Phillips.

22 Q. That's the Phillips-operated, okay.

23 A. Yeah.

24 MR. KELLAHIN: Mr. Examiner --

25 Q. (By Examiner Stogner) Not operated by Shell?

1 MR. KELLAHIN: Mr. Examiner, perhaps I could
2 supplement this for you. The area is pretty complicated in
3 terms of the shallow horizons.

4 Here's a copy of the exhibit to this term
5 assignment, and there's notations on it that will show that
6 the Vacuum Abo unit exists here, the Vacuum Glorieta East
7 unit, and then there's the East Vacuum Grayburg San Andres
8 unit, all of which were are involved in this area here.
9 They're summarized here, and I'll mark this as Exhibit
10 Number 7. I think that may be helpful.

11 EXAMINER STOGNER: This is essentially the term
12 agreement description or the description and a little --
13 What is this off of, Mr. Kellahin?

14 MR. KELLAHIN: This is the attachment to the term
15 assignment by which Shell assigned to Marathon the right to
16 operate this 80-acre tract.

17 EXAMINER STOGNER: Okay.

18 MR. KELLAHIN: This is the exhibit that
19 identifies the state lease, shows the common interest in
20 the two 40-acre tracts, and then further describes some of
21 these shallower intervals.

22 EXAMINER STOGNER: With the Blinebry and the
23 Drinkard being included in that description?

24 MR. KELLAHIN: They are the interest that's
25 assigned to Marathon. Interests to Marathon include the

1 Blinebry and the Drinkard.

2 EXAMINER STOGNER: And that's depicted on one of
3 the paragraphs below?

4 THE WITNESS: I think those are simply
5 correlation markers as to shallower zones.

6 EXAMINER STOGNER: Okay. And the State of New
7 Mexico is the lessor; is that correct?

8 MR. KELLAHIN: That's correct. What you're
9 looking at in those three subdivisions are exclusions,
10 rather than inclusions.

11 EXAMINER STOGNER: Do you wish to offer this
12 exhibit --

13 MR. KELLAHIN: Yes, sir.

14 EXAMINER STOGNER: -- with all of the others at
15 this time?

16 MR. KELLAHIN: Yes, sir, it proves the identity
17 of interests between the two spacing units, and we would
18 move, then, the introduction of Exhibit 7.

19 EXAMINER STOGNER: Okay. Had you moved the other
20 ones?

21 MR. KELLAHIN: Yes, sir, I did.

22 EXAMINER STOGNER: Okay, so Exhibit Number 7 will
23 be admitted into evidence at this time also.

24 Q. (By Examiner Stogner) Okay, back to the
25 Drinkard. I'm clear on the Blinebry, I believe, with the

1 structure and the high on it, on the little reef buildup.

2 But I guess I'm not too sure on the Drinkard. Turn over to
3 Exhibit Number 5.

4 A. Right.

5 Q. You said there was the shelf margin. How far to
6 the south is this margin?

7 A. Well, our proposed location straddles right along
8 the shelf margin.

9 If you look at the green dots off to the west,
10 that is the area of significant Drinkard production.

11 Marathon drilled a wildcat last year at the
12 location just northeast of our currently proposed location,
13 and that well was a discovery. However, it was -- it only
14 produced a nominal amount of oil.

15 So the Drinkard, in our opinion, is a secondary
16 objective. Since we're already drilling down to
17 approximately 7600 feet, we'll drill the additional 800
18 feet to test that zone.

19 Q. Okay. Really more of a convenience, per se?

20 A. Yes.

21 Q. But the majority of your geology is based on the
22 Blinebry?

~~23~~ A. The location is based on the Blinebry.

~~24~~ EXAMINER STOGNER: Are there any other questions
~~25~~ of this witness?

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MR. KELLAHIN: No, sir.

EXAMINER STOGNER: You may be excused.

Mr. Kellahin, anything further?

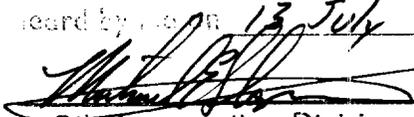
MR. KELLAHIN: Not in this case.

EXAMINER STOGNER: Does anybody else have anything further in Case Number 11,316?

Then this matter will be taken under advisement.

(Thereupon, these proceedings were concluded at 9:28 a.m.)

* * *

I do hereby certify that the foregoing is a complete record of the proceedings in the Executive Hearing of Case No. 11316, heard by me on 13 July 1995.
 , Examiner
Oil Conservation Division

CERTIFICATE OF REPORTER

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

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

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

WITNESS MY HAND AND SEAL July 16th, 1995.



STEVEN T. BRENNER
 CCR No. 7

My commission expires: October 14, 1998