

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. 11,319

APPLICATION OF SULLIVAN AND)
 COMPANY "3D" PROGRAM I, L.L.C.)
 _____)

REPORTER'S TRANSCRIPT OF PROCEEDINGSEXAMINER 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.

* * *

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

I N D E X

July 13th, 1995
 Examiner Hearing
 CASE NO. 11,319

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A P P E A R A N C E S

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By: ERNEST L. PADILLA

* * *

1 WHEREUPON, the following proceedings were had at
2 8:24 a.m.:

3 EXAMINER STOGNER: Call Case Number 11,319.

4 MR. CARROLL: Application of Sullivan and Company
5 "3D" Program I, L.L.C., for directional drilling and an
6 unorthodox bottomhole oil well location, Lea County, New
7 Mexico.

8 EXAMINER STOGNER: At this time I'll call for
9 appearances.

10 MR. PADILLA: Mr. Examiner, Ernest L. Padilla for
11 the Applicant in this case.

12 I have two witnesses to be sworn.

13 EXAMINER STOGNER: Are there any other
14 appearances in this matter?

15 Will the witnesses please step forward and remain
16 standing to be sworn in?

17 (Thereupon, the witnesses were sworn.)

18 MARCUS D. GARRETT,
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. PADILLA:

23 Q. Mr. Garrett, for the record please state your
24 name.

25 A. My name is Marcus Duane Garrett.

1 Q. Mr. Garrett, where do you live?

2 A. I live in Broken Arrow, Oklahoma.

3 Q. And are you employed by the Applicant in this
4 case?

5 A. Yes, I am.

6 Q. And who is the Applicant in this case?

7 A. Sullivan and Company.

8 Q. Can you tell us a little bit about Sullivan and
9 Company and the Applicant, Sullivan and Company "3D"
10 Program I and L.L.C.?

11 A. Sullivan and Company is a small oil and gas
12 company operated out of Tulsa, Oklahoma. They've been in
13 business for approximately 40 years.

14 One of the principals of the company has formed a
15 sister company called Sullivan and Company "3D" Program I,
16 L.L.C. It's a limited liability company that goes out and
17 drills joint venture prospects.

18 Q. Mr. Garrett, the Applicant in this case is
19 Sullivan and Company; it's a limited liability company,
20 correct?

21 A. Right, that's correct.

22 Q. What do you do for Sullivan and Company?

23 A. My official title is assistant manager of
24 drilling production.

25 Q. What do your duties include?

1 A. Well, we are a small company. I primarily take
2 care of the production and, when there's a well to be
3 drilled, I take care of the drilling of it. And in cases
4 where we are getting ready to form units, et cetera, well,
5 then, I involve myself in any land, legal or exploration
6 projects as necessary.

7 Q. Are you primarily an engineer? Is that your
8 background?

9 A. That's correct.

10 Q. Have you testified before the Oil Conservation
11 Division in the past?

12 A. No, I have not.

13 Q. Would you tell the Examiner what your educational
14 background is?

15 A. I received a BS degree in petroleum from Oklahoma
16 State University in 1972, and I've been in the oil and gas
17 business for 23 years.

18 MR. PADILLA: Mr. Examiner, we tender Mr. Garrett
19 as an expert in petroleum exploration.

20 EXAMINER STOGNER: Mr. Garrett is so qualified.

21 Q. (By Mr. Padilla) Mr. Garrett, have you prepared
22 certain exhibits for introduction here today?

23 A. Yes, I have.

24 Q. Can you briefly tell the Examiner what you have
25 bought as far as your testimony is concerned?

1 A. Do you want me to introduce all five exhibits?

2 Q. Just briefly, yes.

3 A. Okay.

4 Q. Give us an overview.

5 A. Okay. Exhibit Number 1 is a land plat that shows
6 the proposed bottomhole location for the proposed well, the
7 Lowe Number 25-1, and I'll go into that in some detail in a
8 few minutes.

9 Exhibit Number 2 shows the relative location
10 between the surface and bottomhole location of the Lowe
11 25-1. It's a blow-up of Exhibit Number 1.

12 Exhibit Number 3 is the standard form C-102
13 required for applications in the State of New Mexico.

14 Exhibit Number 4 is the C-101.

15 And Exhibit 5 is a waiver that we got from the
16 offset operator in Section 26 to drill this unorthodox
17 location.

18 Q. Mr. Garrett, can you tell the Examiner why you're
19 asking for an unorthodox location in this case?

20 A. Yes. The main reason that we would like to have
21 an unorthodox location is because of the location of the
22 reef in the Devonian -- or excuse me, not a reef, but the
23 structure in the Devonian that we're going after.

24 Basically, the structure is an elongated
25 structure, and it straddles Sections 25 and 26.

1 Q. Now, your geologic witness is going to go more
2 into detail?

3 A. That's correct, he'll get into the detail of that
4 in a minute.

5 But to drill a standard location in Section 25,
6 we believe that we would completely miss the structure
7 altogether. So an unorthodox location is needed in order
8 to be able to hit this.

9 Q. Okay, Mr. Garrett, let's get into Exhibit Number
10 1 and have you get into more detail about that, and I'd
11 like for you to discuss the exact location where that's
12 shown on Exhibit Number 1.

13 A. Okay. Basically Exhibit Number 1 is an area map
14 that comprises portions of Section 25, 26, 35 and 36 of
15 Township 13 South, Range 37 East, in Lea County, New
16 Mexico.

17 The two circles on the map is the proposed
18 bottomhole location of the Lowe 25 Number 1, which is
19 located at 2205 feet from the north line and 100 feet from
20 the west line.

21 In the legend down in the lower left, you can see
22 that the well locations that have the square around it are
23 Wolfcamp producers, the wells that just have the circle
24 around it are existing Devonian producers.

25 Also underneath each well spot you'll see a

1 number which represents the total depth reached in that
2 particular well.

3 For instance, on the well that's the closest to
4 our proposed Lowe Number 25-1, it's a dryhole that was
5 drilled to the depth of 10,145 feet, insufficient to test
6 the Devonian.

7 The dotted lines that you see, for instance, in
8 the west half of Section 25, are lines that depict the
9 existing leases that we have out there.

10 For instance, in the lease that is a portion of
11 the area where we're going to drill is a 240-acre lease
12 that is -- that Sullivan and its partners have the right to
13 be able to drill in.

14 To the north of there is a laydown 80, and it too
15 -- Sullivan also has the rights to drill in it.

16 In the east half of Section 26 we have a farm-in,
17 which gives us the rights to be able to drill in the east
18 half of Section 26, given to us by BTA, and so on.

19 Q. Mr. Garrett, is the royalty ownership common in
20 the west half of Section 25 and the east half of Section
21 26?

22 A. Yes, it is.

23 Q. And Sullivan controls both of those tracts; is
24 that right?

25 A. That's correct, we do.

1 Q. So in this case you'd be offsetting yourself?

2 A. That's right.

3 Q. What is the proposed depth of the well?

4 A. The proposed depth of the well is 12,600 feet.

5 Q. Okay. I notice a well to the south of your
6 proposed location that straddles the section line. Can you
7 tell the Examiner a little bit about that well?

8 A. The well that -- The well in question right there
9 is the BEI Lowe Number 1. It was drilled in 1993 by
10 Bahlburg Exploration. The exact location of that well is
11 900 feet from the south line and 50 foot from the west
12 line.

13 As you can see, the total depth reached on that
14 well was 12,272 feet, which is deep enough to test the
15 Devonian.

16 However, you can see from the legend that this is
17 a Wolfcamp well. The well went down to the Devonian, and
18 it was found to be dry, so they plugged back and made a
19 Wolfcamp producer out of it.

20 Q. Do you have anything further on Exhibit Number 1,
21 Mr. Garrett?

22 A. No, that's it.

23 Q. Let's go to Exhibit Number 2 now and have you
24 tell the Examiner what that is and what it contains.

25 A. Okay. This, as I said before, is the relative

1 locations in a blown up -- in a blow-up of the surface
2 location and the bottomhole location of the Lowe Number 1.

3 As you can see, the surface location is located
4 60 feet from the section line to the east, and the
5 bottomhole location is located 100 feet to the east of the
6 section line. The --

7 Q. What -- Go ahead.

8 A. I was just going to say, the dashed circle around
9 the bottomhole location is the area that we have to hit
10 inside of in order for this to be an accepted bottomhole
11 location, per the rules of the State.

12 Q. Mr. Garrett, why is the surface location
13 different from the bottomhole location?

14 A. There's a couple of reasons that we elected to
15 move it.

16 If we were to have put the surface location
17 directly above the bottomhole location, we would have been
18 out in the middle of a farmer's peanut field. We wanted to
19 move the well to the west in order to be able to have our
20 permanent well off his peanut acreage out there.

21 Now, the reason that we moved it to the north was
22 because in the Bahlburg well that was drilled in 1993, they
23 ran a directional survey at 7000 feet, and this survey
24 indicated that the bit had naturally drifted approximately
25 70 foot south and 10 foot west of their surface location.

1 And in order for him to get back to where he wanted to get,
2 he had to directionally drill back to his -- back
3 underneath his surface location.

4 So I wanted to take into account the natural
5 drift in that area by moving the surface location 100 foot
6 north, so that by the time that we get down to around, say,
7 7000, 8000 or 9000 feet, and we do our survey, then we'll
8 be closer to our intended bottomhole location.

9 Q. So you'll be doing a directional drilling survey
10 on the way down?

11 A. That's correct.

12 Q. Mr. Garrett, suppose you don't bottomhole within
13 the 50-foot radius as shown on this exhibit. What happens?

14 A. Well, it depends on exactly where we'll be. If,
15 for instance, we're to the east at all of this proposed
16 bottomhole location, before we get to that point we will
17 come back up and set a whipstock or turn our motors, and
18 somewhere or another intentionally move the direction of
19 that bit to try to get to the exact bottomhole location, or
20 a reasonable proximity thereof.

21 Q. Mr. Garrett, suppose that you drift west and it's
22 your estimate that you're going to wind up being outside
23 that circle to the west. Would that be favorable in terms
24 of geology?

25 A. As the testimony that will be coming up next will

1 show, there is room for us to the west of the circle, for
2 us to be able to encounter the reef, and there is a
3 possibility that if the bit hits someplace west of this
4 circle, that that would be an acceptable location for
5 geological purposes.

6 However, if we're outside of the circle, then
7 that will mean that I'll have to come back and get an
8 amended location.

9 Q. In light of the fact that the ownership is
10 common, both royalty and working interest, throughout this
11 area, would you request of the Examiner some provision in
12 the Order that you could get administrative approval to
13 produce a well at a bottomhole location that would be
14 outside the circle?

15 A. Provided that I would meet the rest of the terms
16 of the laws in the State of New Mexico, yes, as long as --

17 Q. You couldn't --

18 A. For instance, as long as I'm to the east of
19 Section 25 and within, you know, the rest of the drilling
20 and spacing unit, I would ask that it be administratively
21 approved.

22 Q. Okay. Do you have anything further concerning
23 this Exhibit Number 2?

24 A. No, that's it.

25 Q. Let's go on to Exhibits Number 3 and 4 and have

1 you identify those, please.

2 A. These are the C-101s and -102s that are required
3 to be filled out in order to be able to get an application
4 in the State of New Mexico.

5 Q. And the dedicated acreage would be unit letter E,
6 which is the southwest quarter of the northwest quarter of
7 section -- the well of the section; is that correct?

8 A. That's correct.

9 Q. And Exhibit 4 is just the permit to drill,
10 correct?

11 A. That's correct.

12 Q. What is Exhibit Number 5?

13 A. Exhibit Number 5 is a waiver that was given to us
14 by BTA, who is the original lessors in Section 26 --

15 Q. Original lessors or lessees?

16 A. Lessees, excuse me. And they in effect gave us
17 permission to go ahead and drill an unorthodox location in
18 Section 25.

19 Q. In the meantime, you've obtained a farmout from
20 BTA?

21 A. That's correct, we have.

22 Q. Who is Bahlburg Exploration, Inc.?

23 A. Bahlburg Exploration is a partial owner in the
24 drilling of this Lowe Number 25-1.

25 He's also a geologist, and he assisted us in

1 putting together this deal.

2 Q. Bahlburg had also filed a similar application
3 originally at one point?

4 A. That's right.

5 Q. Okay. And that case was dismissed from the last
6 docket?

7 A. That's correct.

8 Q. Mr. Garrett, in your opinion would approval of
9 the Application, as far as your testimony is concerned, be
10 in the best interests of conservation of oil and gas?

11 A. Yes.

12 Q. Would you elaborate on that, please?

13 A. If we had to drill a standard location in Section
14 25, there would be significant quantities of oil and gas
15 that would not be able to be recovered, and unless we're
16 able to drill in an unorthodox location, those hydrocarbons
17 will not be recovered.

18 MR. PADILLA: Mr. Examiner, that completes the
19 testimony of Mr. Garrett, and we tender Exhibits 1 through
20 5 and tender Mr. Garrett for questioning.

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

23 EXAMINATION

24 BY EXAMINER STOGNER:

25 Q. Mr. Garrett, you said that the royalty interests

1 were the same, the east half of 26, as the west half of 25;
2 is that correct?

3 A. That's correct.

4 Q. But you failed to mention who that was. Who is
5 the royalty interest?

6 A. It's divided among the Lowe families. I don't
7 have a list of them, but there's about five or six
8 descendants of Mr. Lowe.

9 Q. Now, when you say that they are the same, do they
10 share in the same percentage, or is it just the same people
11 that are involved and that have different ownership?

12 A. It's an undivided interest on both sides of the
13 section, and the ownership is the same.

14 Q. So they're identical in every aspect?

15 A. That's correct.

16 Q. Inasmuch as this really isn't a directional
17 drilling as the strict terms, you're going to rely on the
18 geological and the bedding formations to reach your
19 objective; is that correct?

20 A. Yes.

21 Q. But you're going to be using measured -- Well,
22 are you going to be measuring it while you're drilling, or
23 are you going to stop periodically and run a survey?

24 A. We'll run a gyro, which will give us the exact
25 location relative to the surface, and we'll run that -- As

1 a matter of fact, we've already run that.

2 And then from that point on, we'll use single-
3 point surveys to take us all the way to TD. And we will
4 use a motor to directionally drill as necessary from this
5 point forward.

6 And at TD we'll go in and run a multi-shot
7 survey, which is what's required by the State, and we'll
8 have that information and give that to the State on
9 completion of the well.

10 And that will give us the exact bottomhole
11 location.

12 Q. Back to the royalty interest question, is that
13 from surface to the base of the Devonian, or could you have
14 requested also the Pennsylvanian and Wolfcamp Pools be
15 included?

16 A. Yes, that's all zones.

17 Q. And the King-Wolfcamp Pool, that's an oil pool?

18 A. Yes.

19 Q. And that's on what spacing?

20 A. Forties.

21 Q. And how about the King-Pennsylvanian Pool?

22 A. Forties.

23 Q. Is there any Pennsylvanian production out there?

24 A. Not that I'm aware of.

25 Q. Any within a mile?

1 A. Not that I'm aware of.

2 Q. Have you looked at the King-Pennsylvanian Pool
3 boundaries?

4 A. Yes, and I didn't see any on there, but I was
5 looking --

6 Q. You said you looked at the pool boundaries, and
7 it's not within a mile?

8 A. No, it's not.

9 Q. I don't think I would have included it on there
10 if it wasn't.

11 Do you have those pool boundaries with you?

12 A. No, I don't.

13 Q. As you're drilling, you see that you may not hit
14 that 50-foot target, you don't have any intentions of
15 straightening it out, you're just going to let it wander?

16 A. No, we're not -- That's the reason for running
17 the multi-shot survey, is to find out exactly where we are,
18 and then we'll direct the bit as close to the target as is
19 practical, and our intentions are to hit the exact target.

20 Our primary intention, of course, is to be able
21 to be with -- to be someplace in the area of that 50-foot
22 radius, and -- but if we're outside of it, say 10 or 15 or
23 20 feet, from a practical sense, it would be better for us
24 to go ahead and come back for an amended location, as to
25 try to -- you know, to try to spend the extra money to try

1 to get it inside the target area.

2 Q. Now, have you been in contact with Mr. Bahlburg?
3 Because your May 5th letter mentioned that you all would
4 more than likely be closer than the minimum of 330.

5 Does he know exactly where you're going to be?

6 A. I don't think I understand the question.

7 Q. In your letter of May 5th -- that's Exhibit
8 Number 5 --

9 A. All right.

10 Q. -- in there, "We intend to drill one or more well
11 locations which would most likely be closer than the
12 minimum 330-foot distance from the section line."

13 And indeed, you are. Does he -- Was he made
14 aware of how close he was going to be?

15 A. Yes, he's got copies of all the exhibits.

16 MR. PADILLA: Mr. Examiner, I think your concern
17 is with BTA and not with Bahlburg.

18 EXAMINER STOGNER: Okay, what is BTA's interest,
19 then?

20 MR. PADILLA: BTA was the operator to the west.
21 And since that letter has been written, there has been a
22 farmout from BTA to Sullivan and Company.

23 Mr. Bahlburg is simply a partner with Sullivan to
24 drill the wells, and it was Bahlburg who was asking for the
25 waiver at the time.

1 EXAMINER STOGNER: But BTA has sold out,
2 Bahlburg --

3 THE WITNESS: He's farmed out.

4 EXAMINER STOGNER: He's farmed out, all right.

5 THE WITNESS: Right. Can I have just a minute to
6 confer with Mr. Padilla?

7 EXAMINER STOGNER: Sure.

8 THE WITNESS: Okay.

9 (Off the record)

10 EXAMINER STOGNER: I have no other questions, Mr.
11 Padilla.

12 You may be excused.

13 THE WITNESS: Thank you.

14 MR. PADILLA: Mr. Garrett -- just -- Go ahead.

15 EXAMINER STOGNER: Mr. Padilla?

16 MR. PADILLA: Yes, sir.

17 EXAMINER STOGNER: You may continue.

18 MR. PADILLA: We'll check the pool boundaries on
19 the Pennsylvanian and make sure that they're outside --
20 that the proposed well is outside a mile.

21 If it's not, then obviously we can't -- then we'd
22 have to conform with the Pennsylvanian rules.

23 EXAMINER STOGNER: Okay.

24 MR. PADILLA: We'll call Tom Armstrong at this
25 time.

1 THOMAS F. ARMSTRONG,
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. PADILLA:

6 Q. Mr. Armstrong, please state your name.

7 A. Thomas F. Armstrong.

8 Q. And Mr. Armstrong, are you a consultant for the
9 Applicant in this case?

10 A. I am.

11 Q. Mr. Armstrong, have you testified before the Oil
12 Conservation Division and had your credentials accepted as
13 a matter of record in the past?

14 A. Not in New Mexico.

15 Q. Can you tell the Examiner what your educational
16 background in geology is?

17 A. I graduated from the University of Texas at
18 Austin with a bachelor's degree in 1975.

19 Q. What is your experience in the oil and gas
20 industry since your graduation?

21 A. I've worked as an exploration geologist since
22 1975 until today.

23 Q. For whom?

24 A. Several companies, among them Union Oil of
25 California, Enserch Exploration, Sul Petro, then other

1 smaller independents.

2 Q. Do you now have your own consulting firm? Is
3 that --

4 A. That's correct.

5 Q. Okay. Have you made a study of the geologic
6 features and the geology of the Devonian formation and the
7 formations above the Devonian in your study of this area?

8 A. Yes, I have.

9 Q. Can you be a little bit more specific, briefly,
10 as to what kind of study you did to familiarize yourself
11 and prepare exhibits for this hearing?

12 A. We began with a geologic map of the original King
13 field area and extended that in all directions to see if
14 there wasn't a larger pool than what had been discovered by
15 drilling in the Fifties.

16 We created cross-sections, primarily a north-
17 south cross-section that indicated that there very well was
18 a possible extension of the structure in a north direction,
19 approximately a mile north of the existing production.

20 Q. Mr. Armstrong, have you testified before other
21 oil and gas regulatory agencies?

22 A. Yes, I have.

23 Q. Which agencies?

24 A. Oklahoma.

25 Q. Are you a member of any geologic societies?

1 A. I'm a member of the American Association of
2 Petroleum Geologists and am certified as a professional
3 geologist by the AAPG; also by the American Institute of
4 Professional Geologists, I'm also certified by them.

5 MR. PADILLA: Mr. Examiner, we tender Mr.
6 Armstrong as an expert in geology.

7 EXAMINER STOGNER: Mr. Armstrong is so qualified.

8 Q. (By Mr. Padilla) Mr. Armstrong, let's start with
9 Exhibit Number 6 and have you jump right into that and tell
10 the Examiner what that is.

11 A. Number 6 is a geologic map at a horizon, being
12 the top of the Devonian formation. It is based primarily
13 on subsurface data in the numerous wells shown on the map.
14 It is complemented by seismic data that initially was a
15 series of east-west 2-D seismic lines, and one key north-
16 south seismic line.

17 Q. Where is the proposed location in this Exhibit
18 Number 6?

19 A. The proposed location is noted in the southwest
20 of the northwest of Section 26. It's noted with a circle,
21 and words "Proposed Location".

22 Q. The structure here is flanked by faults; is that
23 correct?

24 A. That is correct.

25 Q. Would you point those out to the Examiner --

1 A. There are two --

2 Q. -- in terms of the proposed location?

3 A. There are two major north-south trending faults,
4 parallel, approximately, on this map scale, a half inch
5 east of the location and approximately an inch west of the
6 proposed location. Those are large, approximately 1000-
7 foot, faults that define the main structure.

8 Within the main structure, there are numerous
9 antithetic faults that generally will run at angles
10 approximately 60 degrees to the main east-west bounding
11 faults.

12 Q. Where is the well on this exhibit that Bahlburg
13 drilled in 1993 and was a dryhole and hugs the section
14 line?

15 A. Immediately south of our proposed location,
16 approximately two inches on this map, you'll see a well
17 symbol, and south of that an open symbol with a dashed line
18 connecting the two. The bottomhole location is indicated
19 by the open circle with the letters BHL next to it.

20 Q. Mr. Armstrong, Mr. Garrett testified that the
21 Bahlburg well was a dryhole in the Devonian. Can you
22 elaborate as to why it was a dryhole in the Devonian?

23 A. Our belief is that someplace shortly before they
24 got to the Devonian, they got caught in the fault zone
25 depicted at the bottomhole location, they were unable to

1 control the well, it drifted along with that fault to a
2 location several hundred feet south of where they wished to
3 bottomhole that well, and our expertise in the area would
4 indicate that getting caught in a fault zone like that will
5 give you irreparable communication with water. He tested
6 over 9000 feet of saltwater, and that tends to corroborate
7 that.

8 Q. In terms of your proposed location, and looking
9 at Exhibit Number 7 in conjunction with Exhibit Number 6,
10 what have you done to locate the proposed location to not
11 experience the same thing that happened in the Bahlburg
12 well?

13 A. We have identified on a 3-D seismic survey a
14 fault zone east of our proposed location. The mapping and
15 interpretation indicates that this is not a distinct line,
16 as depicted on the given map, but that it is a fault zone,
17 approximately 200 feet in thickness. We've tried to
18 indicate that on this seismic line.

19 And what we are concerned about is that at
20 shallower depth above the Devonian formation, it is
21 entirely possible that we could encounter that fault and
22 experience the same problems that Bahlburg exploration
23 had -- that is, to get caught in the fault and not be able
24 to get the bit to veer out of it.

25 Q. Would you explain Exhibit Number 7 in more detail

1 in terms of the proposed location and the faulting you see
2 in that seismic depiction?

3 A. Exhibit 7 is a seismic line extracted from the
4 3-D volume of data that we acquired as a 3-D survey to
5 confirm the geology in this area. It is an east-west line
6 running through our proposed location. It shows the highly
7 faulted and high throw of the faults at the Devonian and
8 shows how they extend up above the Devonian section into
9 the shallower beds.

10 Q. Where is the Devonian shown? How is the Devonian
11 shown in this Exhibit 7?

12 A. There is a yellow line that runs horizontally
13 across the section at a level between the 1700- and 1800-
14 feet markers, in the downthrown position, and that same
15 horizontal line jumps up to a position, up to about 1600 at
16 the proposed location.

17 Q. Looking at right above the 1500 line, is that
18 where you're going to -- where you think you're going to
19 miss this fault, or the fault -- Is this the fault that
20 you're trying to miss?

21 A. That's correct, we think that that is the
22 approximate upwards termination of the fault.

23 Q. So a location east of the proposed bottomhole
24 location of the target area would -- Are you afraid that
25 would get you into that fault?

1 A. Historically, that is what has happened to many
2 operators. You can see several wells in this area that
3 have fallen off the edge. Some \$2 million worth of
4 drilling has experienced just that problem of getting too
5 close to the fault, getting caught in it and being thrown
6 on the downthrown side.

7 Q. Okay, you said several wells, and you pointed to
8 Exhibit Number 6. Can you identify some of those wells?

9 A. On Exhibit Number 6, you can see on the east
10 flank of the field there's a well shown at a depth of 9217.

11 Immediately west of that, on the west flank of
12 the feature, is a well that also found itself on the
13 downthrown side. It came in with a subsurface depth of
14 8803.

15 North of that is another well that literally did
16 get caught in the fault, as we're concerned. It came in at
17 8770.

18 All of those wells were drilled with anticipation
19 of staying on top of the structure, and by getting too
20 close to the edge found themselves off this feature.

21 Q. Mr. Armstrong, do you have anything further
22 concerning Exhibits 6 and 7?

23 A. No, I don't.

24 Q. You've also prepared a cross-section. Would you
25 tell the Examiner what that cross-section shows? And that

1 is Exhibit Number 8.

2 A. Cross-section Number 8 was a cross-section that
3 we prepared to show the relationship of our area of
4 interest to the King field proper.

5 We were able to determine from the abundant well
6 control that the Mississippian section that overlies our
7 zone of interest was very thick in the King field producing
8 area and that it thinned rapidly to the north. This gives
9 inescapable evidence that the paleostructure, the highest
10 portion of the paleostructure, existed north of where the
11 existing production is.

12 We see a fault that separates the two areas, and
13 we believe that the area we will be drilling was the
14 highest portion of the structure at the time of deposition.

15 Q. Mr. Armstrong, do you have anything further to --
16 on Exhibit Number 8?

17 A. No, I don't.

18 Q. In your opinion, would approval of this
19 Application be in the best interests of conservation of oil
20 and gas?

21 A. Very much so.

22 Q. Do you agree with the testimony to the same
23 effect of Mr. Garrett, is that -- I believe he testified
24 that you'd be recovering oil that would not otherwise be
25 recovered?

1 A. That is true.

2 MR. PADILLA: Mr. Examiner, we offer Exhibits 6,
3 7 and 8 and tender the witness.

4 EXAMINER STOGNER: Exhibits 6, 7 and 8 will be
5 admitted into evidence at this time.

6 EXAMINATION

7 BY EXAMINER STOGNER:

8 Q. In looking at Exhibit Number 7, you show the --
9 and this is essentially an upthrown fault block; is that
10 right?

11 A. That's correct.

12 Q. Okay. Over to the west -- and I'm assuming that
13 when I'm looking at Exhibit Number 7, it is a northwest
14 across that area; is that correct?

15 A. Exhibit Number 7 is a due east-west line.

16 Q. Across your proposed location?

17 A. Yes. There are two vertical dashed lines, one
18 representing a well pretty far to the west of our
19 structure. The more centrally located dashed line is
20 indicating our proposed location.

21 Q. Okay. But I was trying to find which of -- on
22 Exhibit Number 6, which of the two parallel lines to the
23 west represents the fault: the one further out, about a
24 half mile away, or the one about a quarter of a mile?

25 A. Both of those are down to the west faults.

1 Q. One represents the top and the bottom?

2 A. No, it's stairstepping down. The major fault is
3 the one that is coincident with the well that has a top
4 showing 8770. The line just outside of that is a contour
5 line.

6 Q. I was trying to see where the stairstep that
7 you're trying to represent on Exhibit Number 7 -- Is that
8 depicted?

9 A. The -- If you start at the proposed location and
10 head due west, about a half inch west on that map you will
11 see a small drop down again within the main portion of the
12 structure. These are small faults. And then the next
13 fault you come to is the major fault that is depicted on
14 Exhibit Number 7 with the vertical yellow line. We have
15 not attempted to depict with yellow lines the small
16 antithetic faults within the main structure.

17 Q. But the two main ones are depicted?

18 A. That's correct.

19 Q. The 1000-foot thrown is the furthest one west,
20 with the little stairstep indicated with the one that
21 essentially bisects your --

22 A. That's correct.

23 Q. -- your structure?

24 A. That's correct.

25 Q. So even if you step off the stairstep, there are

1 wells that are -- have produced or are producing?

2 A. Within the central horst block, that is correct.

3 Q. Now, this is quite a stepout to the north, then,
4 for this little structure, isn't it?

5 A. Yes, sir.

6 Q. On Exhibit Number 6 you show some survey holes,
7 essentially, down to the north and south and east and west.
8 Are those some old two-dimensional survey lines?

9 A. That's correct.

10 Q. And when were those run?

11 A. Those were run in the early Eighties. I can't
12 say exactly when.

13 Q. Did you utilize that information to compare with
14 your three-dimensional survey?

15 A. We used that information to determine whether
16 this area merited the cost of a 3-D survey.

17 EXAMINER STOGNER: Okay. I have no further
18 questions of this witness. You may be excused.

19 MR. PADILLA: We have nothing further.

20 EXAMINER STOGNER: Okay, does anybody else have
21 anything further in Case Number 11,319? If not, then this
22 case will be taken under advisement.

23 (Thereupon, these proceedings were concluded at
24 9:07 a.m.)

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 July 15th, 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 Examiners hearing of Case No. 11319.
 heard by me on 13 July 1995.

 Examiner
 Oil Conservation Division