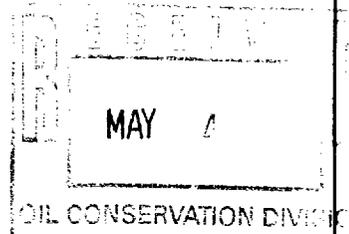


STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION



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

CASE NO. 11,237

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

April 6th, 1995

Santa Fe, New Mexico

This matter came on for hearing before the Oil Conservation Division on Thursday, April 6th, 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

April 6th, 1995
 Examiner Hearing
 CASE NO. 11,237

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* * *

A P P E A R A N C E S

FOR THE DIVISION:

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By: TANYA M. TRUJILLO

* * *

1 WHEREUPON, the following proceedings were had at
2 9:40 a.m.:

3 EXAMINER CATANACH: At this time we'll call Case
4 11,237.

5 MR. CARROLL: Application of Bonneville Fuels
6 Corporation for an unorthodox oil well location, Lea
7 County, New Mexico.

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

10 MS. TRUJILLO: Mr. Examiner, my name is Tanya
11 Trujillo, from the Santa Fe law firm Campbell, Carr and
12 Berge.

13 I have two witnesses this morning to present.

14 EXAMINER CATANACH: Any additional appearances in
15 this case?

16 Will the two witnesses please stand and be sworn?
17 (Thereupon, the witnesses were sworn.)

18 MS. TRUJILLO: Mr. Examiner, my first witness is
19 Jim Cable.

20 JAMES O. CABLE,

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

23 DIRECT EXAMINATION

24 BY MS. TRUJILLO:

25 Q. Mr. Cable, would you state your name and place of

1 residence for the record, please?

2 A. My name is Jim Cable. I'm from Castle Rock,
3 Colorado.

4 Q. And by whom are you employed?

5 A. Bonneville Fuels Corporation.

6 Q. And what is your position with Bonneville?

7 A. I'm Vice President of Operations.

8 Q. Have you previously testified before this Oil
9 Conservation Division?

10 A. No, I have not.

11 Q. Could you summarize for the Examiner your
12 educational background, please?

13 A. Yes, I have a BS from the University of Colorado
14 in civil engineering.

15 Q. Okay, and could you summarize your work
16 experience, please?

17 A. Yes, for the last 17 years I've worked as an
18 engineer and operations manager for various oil and gas
19 companies in the Denver area. In the last four and a half
20 years I've worked with Bonneville Fuels Corporation.

21 Q. Are you familiar with the Application filed on
22 behalf of Bonneville in this case?

23 A. Yes, I am.

24 Q. And are you familiar with the proposed Lottie
25 York Number 3 well?

1 A. I am.

2 MS. TRUJILLO: Mr. Examiner, are the witness's
3 qualifications acceptable?

4 EXAMINER CATANACH: They are.

5 Q. (By Ms. Trujillo) Mr. Cable, could you briefly
6 state what Bonneville seeks with this Application?

7 A. Yes, we seek approval for an unorthodox well
8 location for our proposed Lottie York Number 3 well to be
9 drilled 2030 feet from the south line and 2300 from the
10 west line of Section 14, Township 17 South, Range 37 East,
11 in Lea County, New Mexico.

12 Q. And through what formation do you propose to
13 drill this well?

14 A. The Strawn formation.

15 Q. And what is your primary pool objective?

16 A. It's the South Humble City-Strawn Pool, at
17 approximately 11,400 feet.

18 Q. And Mr. Cable, why is Bonneville seeking this
19 unorthodox location?

20 A. We're seeking the unorthodox location to -- for
21 geologic and geophysical reasons.

22 Q. Mr. Cable, could you move to what we've marked as
23 Bonneville Fuels Corporation Exhibit Number 1, please, and
24 describe that for the Examiner?

25 A. This is a land plat describing the ownerships and

1 spacing units in the areas directly around our proposed
2 location, which is shown in the colored dot. The spacing
3 units are marked with the dashed lines.

4 This is a standard 80-acre oil spacing unit that
5 we are proposing. The proposed location encroaches on the
6 spacing unit to the east. The ownership in both spacing
7 units is the same as well, as BFC is the operator in both
8 spacing units.

9 To the north, the proposed location is no closer
10 than an orthodox location would be. And Bonneville Fuels
11 is not the operator to the north; Yates Petroleum is.

12 Q. Okay. Would you move to what we have marked as
13 Exhibit Number 2 and review that for the Examiner, please?

14 A. Exhibit Number 2 is a summation of the ϕ h map
15 that's -- This map was developed using log and geologic
16 information as well as a 3-D seismic survey that we
17 conducted earlier in this area.

18 The wells, it should be noted here, starting on
19 the cross-section A to A', starting at A', the Norris
20 Number 1 was a dryhole. We are coming up, and you can see
21 the contours are significantly tight here, showing very
22 steep-sided algal mounds that we are showing in the Strawn.

23 To the Lottie York Number 1, the Lottie York
24 Number 1 has cum'd about 900,000 barrels and 1.2 BCF.

25 We move to the Lottie York Number 1, cum'ing

1 341,000 barrels and .5 BCF.

2 To the Lottie York Number 3, which is our
3 proposed location. Based on volumetrics, based on this
4 map, we've calculated about 618,000 barrels of oil and
5 about .9 BCF of recoverable gas.

6 Then we move up to the Yates Bureaucrat Number 1.
7 That well has cum'd 38,000 barrels and .1 BCF of gas, and
8 to our best knowledge it is not producing at this current
9 time.

10 Q. And Mr. Cable, your proposed location indicates
11 drifting at a better porosity; is that correct?

12 A. Yes, what -- We propose this location to maximize
13 our potential to penetrate the Strawn in the best porosity
14 thickness of the area.

15 As you see, there's a spacing window or a circle
16 there that would be a normal, orthodox location.

17 We do not want to place our well in that
18 location, because, one, it's not in the best porosity
19 thickness and, two, the bottomhole locations tend to drift
20 to the west and slightly to the north, as shown in a recent
21 gyroscopic survey, the Lottie York Number 2, which moved
22 approximately 70 feet to the west and 18 feet to the north.

23 We really wanted to have our best shot at getting
24 the best porosity thickness, and -- because we felt if we
25 came close to where these contours are dropping off

1 significantly, that we had the chance of leaving some oil
2 in place and not effectively draining the area.

3 Q. Mr. Cable, could you move to what we have marked
4 as Bonneville Exhibit Number 3, please, and describe this
5 for the Examiner?

6 A. Yes, this is a summary of why we feel we should
7 be allowed the unorthodox location.

8 It states that we have -- specifically, we've
9 spent approximately \$175,000 in determining the best
10 location with the 3-D seismic survey, gyroscopic surveys
11 that we've done in the area, as well as the geophysical and
12 geological work.

13 It describes also the volumetrics that we believe
14 that are in this area, as well as some of the ownership
15 issues which I've already discussed.

16 Q. Mr. Cable, was notice of this Application given
17 to the offsetting operators?

18 A. Yes, it was.

19 MS. TRUJILLO: Mr. Examiner, I have included an
20 exhibit marked as Number 4, which is an affidavit signed by
21 me, referencing notice to the offsetting operators.

22 Q. (By Ms. Trujillo) Mr. Cable, were Exhibits 1
23 through 4 prepared by you or compiled under your direction?

24 A. They were.

25 MS. TRUJILLO: Mr. Examiner, I offer Exhibits 1

1 through 4 at this time.

2 EXAMINER CATANACH: Exhibits 1 through 4 will be
3 admitted as evidence.

4 MS. TRUJILLO: And I have no further questions
5 for the witness.

6 EXAMINATION

7 BY EXAMINER CATANACH:

8 Q. Mr. Cable, again, how did you calculate the
9 recoverable reserves for the Number 3 location?

10 A. The recoverable reserves were calculated using
11 the Exhibit Number 2, the hydrocarbon ϕh map, in which we
12 took the porosity outline here with -- using a planimeter
13 and average water saturations to come up with volumetrics
14 for the specific spacing unit for each of these locations.

15 Q. Now, that number doesn't include any reserves
16 that will be recovered by the Number 2 well?

17 A. That's correct, that's correct. It's only the
18 area inside the spacing unit for the 618,000 barrels that
19 we referred to.

20 Q. Okay. This map was constructed utilizing well
21 control and seismic data?

22 A. Yes, primarily well control, where we had it.
23 And then in our location we don't have that well control,
24 so we used the 3-D seismic information that we recently
25 shot in -- last year, and I believe it was in August of

1 last year.

2 And the survey was a considerably larger area
3 than just this area; it was about 3 1/2 square miles.

4 Q. Okay. So the proposed location, you hope to
5 encounter a greater, better porosity than a standard
6 location?

7 A. That's correct, that's correct. Both better
8 porosity and thickness, the combination of the two.

9 Q. Do you know how much drift these wells have
10 associated with them?

11 A. Yes, we recently ran a gyroscopic survey,
12 approximately a month and a half ago, on the Lottie York
13 Number 2 well, and that well drifted 70 feet to the west
14 and 18 feet to the north. And that would drift towards the
15 -- in this specific location, back towards the spacing
16 window.

17 Q. Okay.

18 A. And given that fact as well, we were concerned
19 that we'd run into these tighter contours and fall off this
20 mound, and potential porosity thickness.

21 Q. Okay. As I understand it, the interest ownership
22 is exactly the same in your proposed spacing unit and the
23 one to the east?

24 A. That's correct.

25 Q. And you're the operator of the Lottie York Number

1 2?

2 A. We are.

3 Q. Okay. Where does Yates and Amerada Hess have
4 offset acreage?

5 A. Yates has acreage to the north --

6 Q. Okay.

7 A. -- shown on the land map.

8 Amerada Hess is -- under AH programs, is in our
9 acreage as well, and it would be a part of this location.
10 They always buy this ownership of acreage that they have
11 farmed out to the north.

12 Q. Okay, you're not encroaching to the north --

13 A. No --

14 Q. -- of this well?

15 A. -- we are not.

16 EXAMINER CATANACH: Okay. I believe that's all I
17 have.

18 You may be excused.

19 BOB KOZAREK,

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

22 DIRECT EXAMINATION

23 BY MS. TRUJILLO:

24 Q. Mr. Kozarek, could you state your name, please,
25 for the record and your place of residence?

1 A. My name is Bob Kozarek, and I reside in Denver,
2 Colorado.

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

4 A. I'm a consulting geologist, and I'm employed by
5 Bonneville Fuels in that capacity.

6 Q. Have you previously testified before this Oil
7 Conservation Division?

8 A. No, I have not.

9 Q. Could you summarize your educational background,
10 please?

11 A. I have my bachelor's of science in geology from
12 the University of Wisconsin and my master's in geology from
13 the University of Oregon.

14 Q. And what is your work experience?

15 A. I have 17 years' experience as a geologist, an
16 exploration and production geologist, with major and
17 independent companies, and the last six years has been as a
18 consulting geologist, the last three with Bonneville Fuels.

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

21 A. Yes.

22 Q. And are you familiar with the proposed Lottie
23 York Number 3 well location?

24 A. Yes, I am.

25 MS. TRUJILLO: Mr. Examiner, are the witness's

1 qualifications acceptable?

2 EXAMINER CATANACH: They are.

3 Q. (By Ms. Trujillo) Mr. Kozarek, we introduced
4 Exhibit Number 2 with Mr. Cable's testimony. I understand
5 that you were instrumental in preparing this exhibit; is
6 that correct?

7 A. Yes, that's correct.

8 Q. Could you confirm for the Examiner the geological
9 reasons why Bonneville seeks its proposed location?

10 A. We seek an unorthodox location 2030 from the
11 south and 2300 from the west line of Section 14, and that's
12 based on a combination of geological and geophysical
13 evidence.

14 This summation of the ϕ h map presented was
15 constructed using a combination of geological, subsurface
16 well-log information and seismic information gained from a
17 3-D seismic survey that covered, as Mr. Cable mentioned,
18 3 1/2 square miles and was centered around this area here
19 in the west half of Section 14.

20 So we feel that the data gained from the 3-D
21 seismic is valid and usable throughout this entire mapped
22 area.

23 The subsurface information is controlling the
24 contours in the vicinity of the Lottie York Number 1 and
25 Number 2 wells. However, the closed contours that you see

1 up by the Lottie York Number 3 location are strictly a
2 result of the information that we gained from the 3-D
3 seismic survey.

4 The 3-D seismic, the seismic indicates these
5 Strawn algal mounds from a change in the thickness of the
6 time interval between the top of the Strawn and the top of
7 the Atoka, giving you an isochronal thick in that interval.
8 And also you get the development of an extra doublet within
9 the Strawn interval. And that's what we are indicating up
10 in the area of the Lottie York Number 3, is the combination
11 of additional Strawn thickness that the seismic indicated,
12 as well as the development of this doublet.

13 And the response -- What we tried to do with this
14 map was mimic the response that the seismic showed with
15 what we -- and blend it with what we had from the
16 subsurface information, the well log information off the
17 Lottie York Number 1.

18 The seismic response over our Lottie York Number
19 3 location was identical to the seismic response over the
20 Lottie York Number 1 location, hence the closed contours
21 and the tightness of the contours surrounding that
22 location.

23 The map itself, that's a ϕ h map. For instance,
24 the value of 17.02 at the Lottie York Number 1 well
25 indicates 17.02 feet of a hundred percent porosity. The

1 log -- The values were calculated every two feet and then
2 summed over the entire interval of the porosity for the
3 well log information.

4 Contour interval is three, or three feet of a
5 hundred-percent porosity. You can see that the tightness
6 of the contours is controlled in part by the subsurface
7 information. As we go from the Lottie York Number 1 to the
8 Norris Number 1, we fall off dramatically from a value of
9 17 to .32.

10 The seismic is another controlling factor in the
11 tightness of those contours, and you can see it falls off
12 very drastically to the north and northeast.

13 And then also in the area of our proposed Lottie
14 York Number 3 location, it falls off dramatically to the
15 west and southwest as well.

16 The proposed Lottie York Number 3 location shows
17 the maximum porosity development in that spacing unit, and
18 with the drift that we encountered in the Lottie York
19 Number 2 well that we have quantified, we feel that we are
20 in a safer location in this proposed location than we would
21 be within the spacing pattern window, because we would be
22 liable to drift out of the maximum porosity development.

23 And there's considerable difference between a
24 well like the Lottie York Number 1, which has a value of
25 17, to the Lottie York Number 2, which has a value of 5.

1 There's more than three times the difference in those
2 values, and approximately three times the amount of
3 recoverable oil.

4 Q. Thank you. Could we move now to what we have
5 marked as Exhibit Number 5, please, and could you describe
6 this exhibit for the Examiner?

7 A. Exhibit 5 is a stratigraphic cross-section,
8 A-A', and it was constructed using the top of the Atoka as
9 a datum. It was constructed in order to show the change in
10 thickness in the Strawn interval.

11 I might mention that what the seismic sees, the
12 imaging the seismic sees, is from the top of the Strawn to
13 the top of the Atoka. And you can see that within that
14 interval there's a considerable and rapid change in
15 thickness in the entire Strawn interval.

16 Going from the right-hand end, the east end, A'
17 to A, we move from the Norris Number 1, where the entire
18 Strawn interval is approximately 200 feet thick, and very
19 minimal porosity development. You can see just at the top
20 a little bit of porosity development there.

21 And then rapidly, within 1300 feet, to the
22 Bonneville Fuels Lottie York Number 1, we climb up to
23 greater than 300-percent of total Strawn interval and a
24 significant amount of porosity development.

25 I might add that the logs that are shown here are

1 gamma-ray neutron density logs and that the Lottie York
2 shows significant porosity development throughout the
3 entire section.

4 And then to -- another -- moving just another
5 1300 feet over to the northwest in the Lottie York Number
6 2, you can see that the Strawn interval has thinned down
7 somewhat and that the porosity section is significantly
8 less than it is in the Number 1.

9 And then to our proposed location for the Lottie
10 York Number 3, based on the seismic, we are anticipating
11 something very similar to the Lottie York Number 1, and it
12 has been sketched in as such.

13 And finally to the Yates Number 1 Bureaucrat
14 well, where the Strawn has thinned down considerably and
15 the porosity development is negligible.

16 So you can see that these are rather steep-sided
17 features and that the porosity development within them is
18 variable.

19 Q. Mr. Kozarek, will approval of this Application
20 enable Bonneville to produce reserves that otherwise would
21 not be recovered?

22 A. Yes, we believe so.

23 Q. And will approval of this Application be in the
24 interests of the prevention of waste and the protection of
25 correlative rights?

1 A. Yes, it will.

2 Q. Was Exhibit Number 5 prepared by you or compiled
3 under your direction?

4 A. Yes, it was.

5 MS. TRUJILLO: Mr. Examiner, I offer Exhibit
6 Number 5 for the record.

7 EXAMINER CATANACH: Exhibit Number 5 will be
8 admitted as evidence.

9 MS. TRUJILLO: And I have no further questions of
10 this witness at this time.

11 EXAMINER CATANACH: Just a couple, Mr. Kozarek.

12 EXAMINATION

13 BY EXAMINER CATANACH:

14 Q. At your proposed location, what value do you
15 think you'll get as far as --

16 A. It looks very comparable to the Lottie York
17 Number 1, so we're anticipating something greater than 15.

18 Q. At a standard location, do you think that would
19 -- how -- what value do you think that would drop off to?

20 A. It could drop off as low as 6, 7, according to
21 the map.

22 EXAMINER CATANACH: That's all I have. The
23 witness may be excused.

24 MS. TRUJILLO: Thank you.

25 EXAMINER CATANACH: Anything further?

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MS. TRUJILLO: Nothing further.

EXAMINER CATANACH: There being nothing further
in this case, 11,237 will be taken under advisement.

(Thereupon, these proceedings were concluded at
10:03 a.m.)

* * *

I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No. 11237,
heard by me on April 6 1995.

David R. Catanach, 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 April 14th, 1995.



 STEVEN T. BRENNER
 CCR No. 7

My commission expires: October 14, 1998