

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO

12 August 1987

EXAMINER HEARING

IN THE MATTER OF:

Application of Pennzoil Company for
approval of an unorthodox oil well
location, Lea County, New Mexico.

CASE
9194
9195

BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Division:

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For the Applicant:

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JIM L. BARR

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MR. STOGNER: Call next Case
Number 9194.

MR. TAYLOR: Application of
Pennzoil Company for approval of an unorthodox oil well lo-
cation, Lea County, New Mexico.

Did you want to consolidate
these?

MR. KELLAHIN: Yes, if you
please. Let's call them both.

MR. TAYLOR: And that's Case
9194.

9195 is the application of
Pennzoil Company for approval of an unorthodox oil well lo-
cation, Lea County, New Mexico.

MR. KELLAHIN: If the Examiner
please, I'm Tom Kellahin of Santa Fe, New Mexico, appearing
on behalf of Pennzoil Company and I have one witness to be
sworn.

MR. STOGNER: Are there any
other appearances in either Case Number 9194 or 9195?

There being none will the wit-
ness please stand and be sworn?

(Witness sworn.)

1

2

JIM L. BARR,

3

being called as a witness and being duly sworn upon his
oath, testified as follows, to-wit:

5

6

DIRECT EXAMINATION

7

BY MR. KELLAHIN:

8

Q

Mr. Barr, would you please state your
name and occupation?

10

A

My name is Jim L. Barr and I'm Senior Ex-
plorationist with Pennzoil Company.

12

Q

Your last name is spelled B-A-R-R?

13

A

Correct.

14

Q

And what do you do for Pennzoil Company?

15

A

Currently I'm involved in doing explora-
tion in the Permian Basin of West Texas and southeast New
Mexico.

18

Q

And you have degree in geology, do you
not?

20

A

I have a Master of Science degree from
the University of Cincinnati.

22

Q

In what year, sir?

23

A

1975.

24

Q

Would you summarize for the Examiner what
has been your employment as a professional petroleum geolo-

25

1 gist subsequent to obtaining your degrees?

2 A I joined Pennzoil Company in 1974. I
3 have spent time as a development geologist. I have spent
4 time in exploration and research. I have been involved in
5 international geology and most recently now with Pennzoil in
6 southeast New Mexico and West Texas.

7 Q When we turn to southeastern New Mexico,
8 particularly to Lea County, New Mexico, have you made a geo-
9 logic study of Pennzoil's applications in the two cases be-
10 fore the Examiner today?

11 A Yes, I have.

12 MR. KELLAHIN: We tender Mr.
13 Barr as an expert petroleum geologist, Mr. Examiner.

14 MR. STOGNER: Mr. Barr is so
15 qualified.

16 Q Mr. Barr, let me direct your attention to
17 Exhibit Number One and if you'll take a moment and describe
18 to the Examiner what particular pool you've made an investi-
19 gation of.

20 A The particular pool that we've made an
21 investigation of is essentially the mound that is -- let me
22 rephrase that.

23 The pool that we've investigated is es-
24 sentially the well and the mound that we have Pennzoil No.
25 16-3, and they would be in the northeast of the southeast

1 quarter there.

2 Q All right, let's find that one. It's the
3 one in the southeast quarter of Section 16. It shows Penn-
4 zoil State 16 and right next to the "3" it has the number
5 258?

6 A That is the Isopach thickness of the
7 Lower Strawn Lime.

8 Q This is in what pool, sir?

9 A This is in the Lovington Northeast Penn
10 Pool.

11 Q And what is the acreage allocation for a
12 spacing unit in this pool?

13 A 80 acres.

14 Q And what would be a standard location for
15 wells drilled in that pool?

16 A Be 150 feet to the center of a quarter
17 quarter governmental quarter.

18 Q Let me direct your attention, first of
19 all, to the well located in the east half of the northwest
20 quarter of 16 and have you identify which well that one is.

21 A This will be the Pennzoil No. 4 State 16.

22 Q Case 9195 then seeks approval for Penn-
23 zoil's Well 4-16?

24 A Correct.

25 Q All right. Let's turn to the south half

1 of the northeast quarter. That 80-acre tract is for what
2 well, sir?

3 A That will be for the Pennzoil No. 5 State
4 16.

5 Q And that refers to Case 9194.

6 Would you take a moment and generally
7 describe for us the geology that exists in the Northeast
8 Lovington Penn, particularly in regards to Section 16? Give
9 us a general picture of the geology, if you will.

10 A Essentially what we're exploring for here
11 are biohermal mounds that grew during the Pennsylvanian per-
12 iod in the Lovington area. These mounds are quite steep on
13 the side. They're carbonates and consist of different types
14 of biota.

15 We find throughout the whole area out
16 there there's a very, very prolific abundance of these
17 things. They're not large in areal extent, however, they
18 have considerable amount of relief on them, as I've depicted
19 here on the Isopach map.

20 Q Let me have you take the Case 9195 well,
21 the 4-16 --

22 A Correct.

23 Q -- in the east half of the northwest
24 quarter --

25 A Correct.

1 Q -- and show the Examiner where the clos-
2 est standard location would be for that spacing unit.

3 A Okay. The closest location, standard lo-
4 cation, would be just south of the dot designated by the
5 shot point 200 on this seismic line there.

6 Q So the closest standard locatin is going
7 to be to the south of shot point 200.

8 A Correct.

9 Q Your proposed location is to the north of
10 that.

11 A Correct.

12 Q Can you describe to the Examiner in what
13 particular way your proposed unorthodox location is in fact
14 unorthodox?

15 A What we wish to do is optimize the best
16 location on the mound and we have found from experience that
17 intregrating the geology and the geophysics to get on the
18 crest of these mounds as we see them on the seismic, and in
19 this particular case this is what we have done. We have lo-
20 cated the location of the well right next to the seismic
21 line on the crest of what we interpret to be the crest of
22 the structure.

23 Q And this location moves closer to the in-
24 terior 40-acre line --

25 A Correct.

1 Q -- as opposed to crowding an outer bound-
2 dary.

3 A Correct.

4 Q Let's turn now to the second well, which
5 is the case for 9194, and that's the well 5-16. Would you
6 identify again where the closest standard location would be
7 for that well?

8 A The closest standard location would be
9 northwest of where we have proposed a location and it would
10 be actually northwest of the Isopach line 220 feet.

11 Q What's the basis that you have determined
12 the necessity for the unorthodox location?

13 A Again the integration of geology and
14 geophysics and showing the optimum location to be in this
15 particular point. We feel going northward we may in actual-
16 ity miss the mound, as they are very steep on the side.

17 Q In this instance for this well you're
18 moving closer to the side boundary and outer boundary of the
19 spacing unit.

20 A Correct.

21 Q Can you describe, sir, what is the owner-
22 ship relation between the ownership in the southeast quarter
23 as opposed to the south half of the northeast quarter?

24 A The ownership is the same throughout the
25 whole section. The northeast and the northwest and in the

1 southeast.

2 Q So the owners that participated in the
3 16-3 Well are going to be the same owners that are
4 participating in that well.

5 A Correct.

6 Q Let me have you discuss for us in a gen-
7 eral way the matters in the seismic study --

8 A Uh-huh.

9 Q -- that have aided you and assisted you
10 in finding these particular points as proposed locations.

11 A I don't quite follow you.

12 Q Yes, sir. Give me a description of the
13 type of seismic data that you had available to you. When
14 were these lines run, the kind of information that you used
15 to -- to make your analysis.

16 A The two lines that we have on here were
17 shot sometime in 1986 and late 1985, and by doing an inter-
18 pretation of the seismic we recognize certain anomalies as
19 we see on the seismic. Through the processing procedure,
20 which is proprietary, and so we do have a way of hopefully
21 recognizing these mounds and so far we've been very success-
22 ful at it.

23 Q Have you integrated the seismic interpre-
24 tation with the subsurface control that's available to you
25 in the section?

1 A Each place that we can we definitely
2 integrate all of the data that we can.

3 Q And have you made that correlation with
4 the geologic data available for the 16-3 Well?

5 A Correct.

6 Q And based upon that study, then, it's
7 your opinion that for both of these wells the optimum locca-
8 tion for drilling a well for these spacing units is the pro-
9 posed unorthodox location.

10 A Correct.

11 Q Let's turn, Mr. Barr, if you will, to Ex-
12 hibit Number Two. Would you identify and describe this ex-
13 hibit for us?

14 A This is a well profile of the No. --
15 Pennzoil No. 3 State 16. I have shown the compensated den-
16 sity log, neutron log on here and at approximately 11,504
17 feet through 11,515 feet I have shown in the column the zone
18 that we have perforated in this particular well.

19 And on the righthand track of the log,
20 over to the right there you'll see a curve and this is the
21 FDC/CNL curve which is showing the porosity development
22 within this particular well that we are now producing from.

23 Q What is the sequence, Mr. Barr, in which
24 you have drilled the wells?

25 A Beg pardon?

1 Q In what order will you drill the wells?

2 A We would drill the -- the first well will
3 be the Pennzoil No. 4 State 16. That will be in the east
4 half of the northwest quarter. And we will drill the Penn-
5 zoil No. 5 State 16, which is in the south half of the
6 northeast quarter.

7 MR. KELLAHIN: Mr. Examiner,
8 that concludes my examination of Mr. Barr.

9 At this time, for the record,
10 we would also identify Pennzoil Exhibit Number Three, which
11 is my affidavit of mailing of notice to the offsetting own-
12 ers.

13 In each instance, as Mr. Barr
14 has told you, the offsetting operators are in fact offset-
15 ting operators and working interest owners are involved in
16 these two wells.

17 We have tabulated, though, the
18 list of those individuals.

19 MR. STOGNER: As far as your
20 Exhibit Three, there has been no objection raised from any
21 of these parties?

22 MR. KELLAHIN: No, sir, there
23 has not.

24 We would move the introduction
25 of Exhibits One, Two, and Three.

1 MR. STOGNER: Exhibits One,
2 Two, and Three will be admitted into evidence at this time.

3

4

CROSS EXAMINATION

5

BY MR. STOGNER:

6

Q Mr. Barr, let's go back and look at Exhi-
7 bit Number One here.

8

Most of your control data was from geo-
9 physical information, I assume.

10

A The vast majority of it, yes.

11

Q Showing the mound. Now, you used a word
12 that I'm not familiar with, "iota".

13

A Biota.

14

Q Okay, I'm not familiar with that one,
15 either.

16

A Essentially the biological components of
17 the mounds. It can be the corals, the fusulinids, the al-
18 gae, the different constituents of the mound itself.

19

Q As far as -- which well do you plan to
20 drill first?

21

A We will drill the Pennzoil No. 4 State
22 16, which will be in the east half of the northwest quarter.

23

Q Regardless of what happens to that well
24 over there, is it Pennzoil's contention to go ahead and
25 drill their second well?

1 A I think at the present time our intent is
2 to do so.

3 Q The Harvey E. Yates wells up in the
4 extreme northwest portion of this map on Exhibit Number One,
5 are those producing from the same zone?

6 A They are producing from the Lower Strawn
7 Lime. Now if they're producing from the same reservoir
8 facies that we have in these two wells, I seriously doubt
9 it, because these reservoir facies within each mound are
10 discrete lenses and they come and go and each mound is in
11 itself really a separate entity, and so I would say the Har-
12 vey E. Yates well, like the East Lovington No. 8, I believe
13 is on its last legs of production.

14 Q Let's look at your Pennzoil wells down in
15 the southern, southwestern portion of this map.

16 A Correct.

17 Q Do those have the same characteristics
18 that you're talking about mound production, essentially?

19 A Those have been used as a model of our
20 mound facies, you know, we get more information -- of course
21 we have a field there that we have used as our analog to
22 extrapolate to other mounds in the area.

23 And yes, they are producing from the
24 Lower Strawn Lime mound facies.

25 Q Now when I look at that, it appears that

1 there's two mounds down in the southeast, a large one that
2 has about five wells producing from it, and then one mound
3 that extends up and appears to be a little nose that comes
4 in and your Pennzoil State No. 2, and that looks like it's
5 in -- you see what I'm talking about --

6 A Yes, sir.

7 Q -- in the southwest here?

8 A Uh-huh.

9 Q What kind of a differential did you see
10 of production characteristics from the State Well No. 2,
11 than, say, the No. 1 in your other mound?

12 A Basically, there is -- well, for one
13 thing, like with Pennzoil State 16-1 was completed in May of
14 1969, whereas Pennzoil State No. 2 down there in the north-
15 west quarter, I think, of 21, that particular well was com-
16 pleted in March of '84, some years later, and of course, the
17 Pennzoil State 16-1 is producing from a mound that trends
18 east/west across there that is actually a separate mound
19 from the two wells that you see in the northeast quarter
20 down there.

21 Now, the Isopach line 200 there gives you
22 the appearance that these are, you know, one mound. They
23 are actually two separate mounds.

24 And the third one down there, the Penn-
25 zoil State 2, is a separate mound, likewise.

1 Q So did you see virgin pressure in each
2 one of these?

3 A Yes, sir.

4 Q Are those wells in the southwestern
5 portion of this map, are they on pump, or are they
6 producing?

7 A I'm not sure of that. I think some of
8 them are on pump and some of them may still be flowing, but
9 I, considering the age of them, I sort of suspect that
10 they're probably on pump.

11 MR. STOGNER: I have no further
12 questions of this witness.

13 Are there any other questions
14 of Mr. Barr?

15 MR. KELLAHIN: No, sir.

16 MR. STOGNER: He may be
17 excused.

18 Mr. Kellahin, do you have
19 anything further in either Case 9194 or 9195?

20 MR. KELLAHIN: No, sir.

21 MR. STOGNER: Nobody else has
22 anything in either case?

23 Both of these cases will be
24 taken under advisement.

25

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY
CERTIFY that the foregoing Transcript of Hearing before the
Oil Conservation Division (Commission) was reported by me;
that the said transcript is a full, true, and correct record
of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case Nos. 9194595
heard by me on 12 August 1987.

Michael J. Higgins, Examiner
Oil Conservation Division