

1 STATE OF NEW MEXICO  
2 ENERGY AND MINERALS DEPARTMENT  
3 OIL CONSERVATION DIVISION  
4 STATE LAND OFFICE BLDG.  
5 SANTA FE, NEW MEXICO

6  
7 17 October 1984

8 EXAMINER HEARING

9 IN THE MATTER OF:

10 Application of Santa Fe Energy  
11 Company for an unorthodox gas  
12 well location, Eddy County, New  
13 Mexico.

CASE  
8378

14 BEFORE: Gilbert P. Quintana, Examiner

15 TRANSCRIPT OF HEARING

16 A P P E A R A N C E S

17  
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PATRICK TOWER

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CURTIS A. ANDERSON

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MR. QUINTANA: We'll call next Case 8378.

MR. TAYLOR: The application of Santa Fe Energy Company for an unorthodox gas well location, Eddy County, New Mexico.

MR. BRUCE: Mr. Examiner, my name is Jim Bruce from the Hinkle Law Firm in Santa Fe, and I have two witnesses to be sworn.

MR. QUINTANA: Are there other appearances in this case?

Will the two witnesses please stand and be sworn at this time?

(Witnesses sworn.)

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

DIRECT EXAMINATION

BY MR. BRUCE:

Q Would you please state your name, city of residence, occupation, and employer?

A My name is Patrick Tower. I work for Santa Fe Energy Company as a landman in Midland, Texas.

Q And have you previously testified before

1  
2 the OCD and had your credentials as a petroleum landman made  
3 a matter of record?

4 A Yes, I have.

5 Q And are you familiar with Case 8378 and  
6 the land ownership matters pertaining to this case?

7 A Yes, I am.

8 MR. BRUCE: Mr. Examiner, is  
9 the witness considered qualified as a landman?

10 MR. QUINTANA: The witness is  
11 so considered qualified as an expert landman.

12 Q Mr. Tower, would you briefly state what  
13 Santa Fe Energy Company seeks by its application?

14 A Santa Fe Energy Company seeks the approval  
15 of an unorthodox gas well location, 1980 feet from the  
16 north line and 870 feet from the east line of Section 6,  
17 Township 17 South, Range 30 East, with the north half of  
18 Section 6 to be dedicated to the well.

19 MR. BRUCE: Mr. Examiner, this  
20 case was originally advertised for a location 330 feet from  
21 the east line and the applicant would like to amend that to  
22 870 feet from the east line and Mr. Tower will subsequently  
23 testify as to the reason for the change.

24 Q Mr. Tower, would you please now refer to  
25 Exhibit Number One and briefly describe it?

A Okay. This is a land plat which we've  
designated for Santa Fe Energy purposes as our Evans prospect.

1  
2 The red outline denotes the proposed pro-  
3 ration unit for our well. The yellow coloring on it denotes  
4 the acreage that Santa Fe has under lease or contractually  
5 under contract for drilling purposes.

6 Q Would you please now refer to Exhibit  
7 Number Two and explain the reason for changing the well lo-  
8 cation?

9 A Okay. We, subsequent to filing for this  
10 application, we decided to go ahead and have a survey done  
11 of the well location, and Exhibit Number Two shows a survey  
12 which was done by John West Engineering Group, and at origi-  
13 nal location of 330 feet, you can see on there there's a  
14 couple pipelines and a road directly cross-sectioning that lo-  
15 cation.

16 The nearest location that we felt we  
17 could stay away from these pipelines and road and have  
18 enough room for drilling purposes is the 870 foot mark,  
19 which is, you know, more toward the legal location.

20 Q Thank you. Have you contacted the immed-  
21 iate offset operators of the deep rights to the east, north,  
22 and south of your proposed drilling site?

23 A Yes, we have.

24 Q And to your knowledge none of them have  
25 objected?

A No, they have not.

Q Have you notified any of the shallow  
rights owners in this area?

1  
2           A           We have in the immediate vicinity, the  
3 40-acre tracts around our proposed drillsite in the south-  
4 east quarter of the northeast, in the 40 acres around that  
5 we have.

6           Q           And your proposed well will go to much  
7 deeper rights than those owners?

8           A           Yes.

9           Q           Mr. Tower, were Exhibits One and Two pre-  
10 pared by you or under your supervision?

11          A           They were.

12          Q           And in your opinion will the granting of  
13 this application be in the interest of conservation, the  
14 prevention of waste, and the protection of correlative  
15 rights?

16          A           Yes, it will.

17                           MR. BRUCE:   At this time I'd  
18 move for the admission of Exhibits One and Two, Mr. Exami-  
19 ner.

20                           MR. QUINTANA:   Exhibits One  
21 through Two will be accepted into evidence.

22                           MR. BRUCE:   And I have no fur-  
23 ther questions of this witness.

24

25

CROSS EXAMINATION

BY MR. QUINTANA:

26          Q           Mr. Tower, this new location as compared  
27 to the advertised location is at a less unorthodox location?

1

A That is correct.

2

Q It's less unorthodox.

3

A Yes, sir.

4

Q Mr. Tower, you may be excused.

5

A Thank you.

6

7

CURTIS A. ANDERSON,

8

being called as a witness and being duly sworn upon his

9

oath, testified as follows, to-wit:

10

DIRECT EXAMINATION

11

BY MR. BRUCE:

12

Q Would you please state your name, city of residence, occupation and employer?

13

14

A My name is Curtis A. Anderson. I live in Midland, Texas. I'm a Senior Geologist for Santa Fe Energy.

15

16

Q And have you previously testified before the New Mexico OCD and had your credentials as a geologist accepted as an expert?

17

18

A Yes, I have.

19

20

Q And are you familiar with the geological matters pertaining to Case Number 8378?

21

A Yes, I am.

22

23

MR. BRUCE: Mr. Examiner, is the witness considered qualified?

24

MR. QUINTANA: Mr. Anderson is so considered qualified as an expert geologist.

25

1  
2 Q Mr. Anderson, will you please refer to  
3 what is marked as Exhibit Number Three and briefly describe  
4 it?

5 A Exhibit Number Three is a general locator  
6 map to locate the approximate position of the well in ques-  
7 tion. Scale one inch equals four miles.

8 You can see that the red triangle, which  
9 indicates our location is approximately 23 miles east of Ar-  
10 tesia and is approximately 3-1/2 miles east -- north of Loco  
11 Hills, New Mexico.

12 Q Would you please now refer to the produc-  
13 tion map marked as Exhibit Number Four and describe its con-  
14 tents?

15 A First let me describe what the different  
16 symbols of the map represent.

17 This is a production map which is cumula-  
18 tive production through January 1st of 1984.

19 In the legend we see that Santa Fe Energy  
20 Company's leasehold or acreage is in a stippled pattern.  
21 The proration unit for the said well is -- is indicated by  
22 the pattern tape.

23 Shallow hole control in the area relative  
24 to this production map is circled by the circle.

25 Deep control which indicates a well or a  
hole drilled through the Morrow formation.

This map serves as an indicator of the  
potential of our primary objective in this prospect, being



1 the Morrow Clastics interval.

2  
3 The well in the north half of Section 18  
4 of Township 17 South, Range 30 East was drilled in 1954;  
5 completed in the Morrow Clastics formation, and has produced  
6 15-1/2 Bcf plus 274,000 barrels of oil since that time.

7 Now this is designated as Anderson Penn  
8 Field production.

9 The well in the south half of Section 7  
10 is also producing from the Morrow formation, indicated in  
11 red, and is in the Anderson Penn Field.

12 Further to the south in Section 20 we  
13 have two wells producing from the Morrow formation, one of  
14 which produced 5.7 Bcf and approximately 100,000 barrels of  
15 oil.

16 This, I think, establishes the potential  
17 of this formation in the area and that it can be quite good.

18 Another function of this map, you see the  
19 large circles around numerous dry holes throughout the map-  
20 ped area, indicate that the risk involved in drilling and  
21 finding Morrow production that is commercial in the area is  
22 relatively great. One location from a producer or from a  
23 dry hole can be significant.

24 Secondary objectives in the area, and  
25 briefly they include the Atoka formation, which is produc-  
tive in the Loco Hills Gas Field to the south; the Strawn  
formation, which is not on this map but produces in the Sand  
Tank Field approximately six miles to the south; the Wolf-

1  
2 camp formation, which is productive in the Henshaw Wolfcamp  
3 Field approximately four miles to the northeast; and the  
4 Wolfcamp as also productive, although probably not in com-  
5 mercial quantities, in the northeast quarter of Section 32  
6 of 16 South, Range 30 East.

7 Also you can see that the proposed loca-  
8 tion, which is the red square in the north half of Section 6  
9 is within the Square Lake Grayburg-San Andres Oil Field.  
10 This production is from approximately 2600 feet and offers  
11 another secondary potential for the well.

12 Q Would you please now refer to Exhibit  
13 Number Five and discuss the cross section A-A' drawn on Ex-  
14 hibit Four?

15 A Stratigraphic cross section A-A' goes  
16 from left to right or from south to north through the area,  
17 the prospect area.

18 This stratigraphic cross section shows  
19 diagrammatically the Morrow Clastics interval. In this case  
20 the datum, or the stratigraphic cross section on the top of  
21 the Morrow Clastics indicated in blue shading. The interval  
22 in question is between blue and the pink shading at the bot-  
23 tom, which is the top of the Mississippian Chester forma-  
24 tion.

25 Now I've tried to show my interpretation  
on this cross section, interpret these sands as being depo-  
sited by fluvial or fresh water river stream type deposition  
in the area. I've separated the Morrow Clastics interval  
into two separate mappable units in the A sand interval and

1 the B sand interval.

2 Q In connection with the Morrow A and B in  
3 Exhibit Number Five, would you refer to the Isopachs marked  
4 Exhibits Six and Seven and please describe them?

5 A Exhibit Number Six is an Isopach of the  
6 Morrow A interval of the Morrow Clastics. It is a gross  
7 clean sand Isopach representative of the environment of de-  
8 position of the Morrow Clastics interval.

9 I would like to also refer to, and these  
10 -- these two maps are in conjunction with each other, Exhi-  
11 bit Number Seven, which represents an Isopach of the Morrow  
12 Clastics B sand interval, which also is a total sand inter-  
13 val.

14 Beginning with the B sand interval the  
15 regional grain of the area of these -- of these streams as  
16 they trended or flowed from north to south through the area,  
17 depositing the clastic sediment which now comprises the Mor-  
18 row Clastics interval, has been developed quite extensively  
19 one township to the west in the Empire South Deep Field.

20 Now this is production from the Morrow B  
21 interval. Extensive development drilling has given good  
22 well control. Subsurface mapping in the Empire South Field  
23 indicates a north-south depositional trend. The deposi-  
24 tional trend represented on Exhibit Seven, which is B sand  
25 interval, is sub-parallel to the depositional trend of the  
Empire South Morrow Field and on this Isopach map the red  
colored wells are wells that produce from this B sand inter-

1 val.

2  
3 And you can see that the well in Section  
4 18, producing in the Anderson Penn Field, which is the 15-  
5 1/2 Bcf well, does produce in this interval in the southeast  
6 quarter of Section 20 of 17 South, 30 East, approximately 6  
7 Bcf gas produced from that well in the B sand interval.

8 And down in Section 34 the Anadarko No. 1  
9 Arnold Well was completed approximately two years ago and  
10 has produced 2 Bcf and 60,000 barrels of oil from the Morrow  
11 B sand interval.

12 So the general depositional trend within  
13 this interval is north-south; based on subsurface control  
14 can be projected through our proposed location. The sub-  
15 surface control including dry holes and nonproducers from  
16 this formation exhibit the risk involved in the narrowness  
17 of these point bar or channel type deposits.

18 A similar situation for Exhibit Number  
19 Six in the Morrow Clastics A interval. We have the same de-  
20 positional environment, in this case the trend I have mapped  
21 carries to the west to the Grayburg-Morrow Field, which is  
22 productive from the A interval; carries into our mapped area  
23 in Anderson Penn Field, the wells in Sections 7 and 18 of 17  
24 South, 30 East are productive from the A interval.

25 The sand trend then projects through our  
26 proposed location and through the Yates No. 1 Marco Polo  
27 Well in Section 32 of 16 South, 30 East.

Q Will you please now refer to Exhibit

1  
2 Eight and briefly describe that?

3 A Exhibit Number Eight is a structure map  
4 on the top of the Morrow Clastics interval. The -- and this  
5 is important in the fact that these sands that I have spoken  
6 about in the Morrow A and B interval is our interpretation  
7 that hydrocarbon entrapment is stratigraphic either against  
8 the regional dip or against a gentle nosing that can be  
mapped at the location.

9 Q Mr. Anderson, were Exhibits Three through  
10 Eight prepared by you or under your direction?

11 A Yes.

12 Q And in your opinion will the granting of  
13 this application be in the interest of conservation, the  
14 prevention of waste, and the protection of correlative  
rights?

15 A Yes.

16 MR. BRUCE: Mr. Examiner, I  
17 move for the admission of Exhibits Three through Eight.

18 MR. QUINTANA: Exhibits Three  
19 through Eight will be taken.

20 MR. BRUCE: And I have no  
21 further questions of this witness.

22 MR. QUINTANA: Excuse me,  
23 without further objection Exhibits Three through Eight will  
be taken into evidence.

24 Are there any further questions  
25 of the witness? I have one question before we --

## CROSS EXAMINATION

1  
2  
3 BY MR. QUINTANA:

4 Q You own -- Santa Fe owns the interest to  
5 the west, right? I mean to the east.

6 A To the east, yes.

7 MR. QUINTANA: No further  
8 questions of the witness. He may be excused.

9 If there is nothing further in  
10 Case 8378 it will be taken under advisement.

11 (Hearing concluded.)  
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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 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's Office, Case No. 8378, heard by me on OCT. 17, 1984.

Gilbert P. Quintana Examiner  
Oil Conservation Division

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