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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
March 15, 1972

EXAMINER HEARING

IN THE MATTER OF:)

Application of Anadarko)
Production Company for a)
waterflood expansion and)
for directional drilling,)
Lea County, New Mexico)

No. 4681

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

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MR. NUTTER: Case No. 4681.

MR. HATCH: Application of Anadarko Production Company for a waterflood expansion and for directional drilling, Lea County, New Mexico.

MR. KELLAHIN: If the Examiner please, Jason Kellahin, of Kellahin and Fox, appearing for the Applicant. We have one witness I would like to have sworn.

(Whereupon, the witness was sworn.)

(Whereupon, Exhibits 1, 2 and 3 were marked for identification.)

C. W. STUMHOFFER

A Witness, having been first duly sworn on oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

A My name is C. W. Stumhoffer, S-t-u-m-h-o-f-f-e-r.

Q Mr. Stumhoffer, have you testified before the Oil Conservation Commission and made your qualifications a matter of record?

A Yes, I have.

MR. KELLAHIN: Are the witness's

1 qualifications acceptable?

2 MR. NUTTER: Yes, they are.

3 Q What is proposed by the Applicant in Case No. 4681?

4 A Anadarko Production Company, in Case No. 4681,
5 requests Commission approval for the expansion of waterflood
6 development of the Langlie-Mattix Penrose Sand in Lea County,
7 New Mexico, as an amendment of the Order No. R-4224.

8 MR. KELLAHIN: If the Commission please,
9 Order No. R-4225 was entered in Case No. 4627
10 and the only difference, actually, in the two
11 cases is the bottom hole locations of the wells
12 involved. So in the interest of saving some
13 repetition of the testimony, I would like to ask
14 the Commission to take note of the record and
15 exhibits that were offered in Case No. 4627.

16 MR. NUTTER: We will take notice of that
17 case file.

18 Q Now, referring to what has been marked as Applicant's
19 Exhibit No. 1, would you identify that exhibit?

20 A Exhibit No. 1 is a tabulation of the proposed
21 water injection wells that are proposed to be drilled at
22 nonstandard locations, both surface and bottom hole, and
23 a map is attached thereto to show a location of the wells
24 geographically.
25

1 Q Is the map attached to Exhibit No. 1 essentially
2 the same map that was offered in the previous case?

3 A Yes, it is.

4 Q The surface locations are the same, is that
5 correct?

6 A The surface locations are not the same.

7 Q They are not the same?

8 A No, sir.

9 Q Would you tell us what the differences are?

10 A In Order No. R-4225, we obtained approval from the
11 Commission to drill wells number 1 - 2, 2 - 2, 8 - 5 and
12 40 - 1 at nonstandard locations. These locations were 1 - 2,
13 1310 feet from the south line, 1310 feet from the west line
14 of Section 14, Township 22 South, Range 37 East.

15 Q Are you moving that well now to 1220 from the
16 south and west lines?

17 A We are changing that location to 1220 feet from
18 the south line and 1220 feet from the west line of Section
19 14 and we propose to bottom this hole in 50 x 100 foot
20 rectangular area commencing at a point on the northeast
21 corner of the southwest quarter of the southwest quarter
22 of Section 14, proceeding west 50 feet, south 100 feet,
23 east 50 feet and then north 100 feet to the point of beginning.

24 MR. NUTTER: Mr. Stumhoffer, as you get
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to each of these, I think rather than describe that location, if it is the same as shown here on Exhibit 1, rather than give a lengthy description, just say it is the same.

THE WITNESS: Fine.

A Well No. 2 - 2 was approved originally at a surface location of 990 feet from the north line and 1310 feet from the west line of Section 23, same township and range. In the future, I will leave township and range off because it is all the same.

The new surface location will be 980 feet from the north line and 1250 feet from the west line of Section 23 and it will be completed as shown on Exhibit 1.

Q I think you can say it's the same as to the surface locations.

A 8 - 5 was approved 10 feet from the north line and 10 feet from the west line, the new surface location is shown in Exhibit 1.

Well No. 40-1 was approved to be drilled at a location 1650 feet from the south line 1310 feet from the west line of Section 23. The new location is shown on Exhibit 1.

In addition to those four wells, we propose to now drill three additional injection wells at

1 nonstandard locations. These are Well No. 6 - 2, to be located
2 as shown on Exhibit 1; Well No. 583 and Well No. 7 - 4,
3 as shown on Exhibit 1, also.

4 Q On each of these, the bottom hole location will
5 not coincide with the surface location, is that correct?

6 A That's correct.

7 Q Do you propose to deviate the wells to reach the
8 locations you are proposing here?

9 A That is correct.

10 Q Would you run surveys on the wells, or how do you
11 propose to determine where those wells are bottomed?

12 A Eastman Surveys will run surveys, we will conduct
13 a survey at approximately -- the initial survey on each
14 well at approximately 2200 feet, and if it's not going to
15 where went to bottom it up, we will then deviate to correct
16 for any we need to insure that we bottom up with the locations
17 we have indicated on Exhibit 1.

18 Q What has been your experience on the deviation
19 of the well bore without any conscious effort to deviate
20 the well in this area?

21 A The last well we drilled on the Langlie-Mattix,
22 we ran a deviation survey on it and we found that the tendencies
23 for the wells without any controls will drift to the north
24 and east and we have located our surface locations
25

1 accordingly and hope that the natural drift will take care
2 of it.

3 Q But you will determine that at each stage of the
4 drilling at what did you say, 2200 feet?

5 A Yes. We do have one that we will have to
6 intentionally deviate and that's Well No. 8-5. We cannot
7 rig up on a surface location to the southwest of the proposed
8 bottom hole location, and we will have to control drill
9 that well all the way.

10 Q Now, will all these wells be bottomed upon the
11 Langlie-Mattix Penrose Sand units?

12 A Yes, sir. This is the purpose of the deviating
13 the holes, so we can check where the bottom hole location is,
14 to assure that we are on the unit area.

15 Q Are all of these going to be used for injection
16 wells?

17 A Yes, correct.

18 Q As part of your recovery program?

19 A Yes, sir.

20 Q That, of course, has already been approved by
21 the Commission, your water injection program?

22 A Yes, sir.

23 Q Is there any change in the source of your water
24 you are injecting into these wells?
25

1 A No, it will be the same water supply we have been
2 using all the time.

3 Q About the same volume you will be injecting?

4 A Yes.

5 Q Referring now to what has been marked as Exhibit
6 No. 2, would you identify that exhibit?

7 A Exhibit No. 2 is the log of a typical water
8 injection well completion on the unit. It's a log of --
9 it's a Dresser-Atlas log of Well No. 25-3, located in
10 Section 28, 22 South, 37 East, and on this log we have
11 indicated the top and bottom of the zone that is being
12 water produced in the Penrose Sand.

13 Q Exhibit 3, will you identify that, please?

14 A Exhibit No. 3 is a schematic diagram of a typical
15 water injection completion on the Langlie-Mattix Unit.

16 MR. NUTTER: This that you have
17 identified as Exhibit 2 -- what was Exhibit 2?

18 THE WITNESS: Exhibit 2 was the log.
19 This is a typical completion of a new water
20 injection well, and the seven wells that we are
21 requesting approval for of this same type. We
22 propose to drill to a T D of approximately 3700
23 feet, run logs, run 4 1/2 inch casing to be
24 cemented with approximately -- I think about two
25

1 hundred fifty sacks, enough to bring cement up
2 to around 2,000 feet. And then we will perforate
3 the pay zone, the Penrose Sand, and set --run
4 plastic coated tubing, set on a packer immediately
5 above the top of the Penrose Sand perforation, and
6 inject down the tubing.

7
8 The annulus between the casing and
9 tubing will be open and we will have a valve
10 on the outlet at the surface and a pressure
11 gauge. It will normally be open so we can
12 detect any leakage.

13 Q (By Mr. Kellahin) Is this the same type of
14 completion you have used in your other injection wells?

15 A Yes.

16 Q Were Exhibits 1, 2 and 3 prepared by you or under
17 your supervision?

18 A Yes, sir.

19 MR. KELLAHIN: At this time, I would
20 like to offer into Evidence Exhibits 1, 2 and 3.

21 MR. NUTTER: Anadarko's Exhibits 1, 2 and
22 3 will be admitted.

23 (Whereupon, Applicant's Exhibits 1, 2
24 and 3 were offered and admitted in evidence.)
25

CROSS EXAMINATION

BY MR. NUTTER:

Q Is that annulus loaded with inhibited fluid?

A We have not been using an inhibited fluid. It's normally the water we use on the Unit.

Q Now, the case of directional drilling or crooked hole drilling, Mr. Strumhoffer, it's normally the Commission's policy to require multi-shot directional surveys be run, continuous multi-shot surveys, to shoot points not more than 100 feet apart to determine the bottom hole location. Is this satisfactory with Anadarko?

A Yes, sir.

Q This casing and cementing program that you show here on Exhibit 3, would apply to the wells that were approved by the previous Orders, as well as to these new ones?

A Yes, sir, it will be a standard procedure used on all seven wells, as shown on the typical diagram.

MR. NUTTER: Are there further questions of Mr. Strumhoffer? You may be excused.

(Whereupon, the witness was excused.)

MR. NUTTER: Do you have anything further, Mr. Kellahin?

MR. KELLAHIN: No, Mr. Examiner.

