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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
STATE LAND OFFICE
SANTA FE, NEW MEXICO
Wednesday, August 23, 1972 at 9:45 A. M.

EXAMINER HEARING

IN THE MATTER OF:

Application of Mobil Oil Corporation
for waterflood expansion and capacity
allowable, Lea County, New Mexico.

Case No. 4800

BEFORE: RICHARD L. STAMETS, Examiner

TRANSCRIPT OF HEARING

P R O C E E D I N G S

THE EXAMINER: We will call case 4800.

MR. HATCH: Case 4800, application of Mobil Oil Corporation for waterflood expansion and capacity allowable, Lea County, New Mexico.

MR. SPERLING: I am J. E. Sperling of Albuquerque appearing for the applicant Mobil Oil Corporation. We have one witness.

(Whereupon, Mr. W. B. Simmons, Jr. was called to the stand and sworn.)

MR. W. B. SIMMONS, JR.

having been first duly sworn according to law, upon his oath, testified as follows:

DIRECT EXAMINATION

BY MR. J. E. SPERLING:

Q Please state your name, your employer and the position in which you are employed.

A I am W. B. Simmons, Jr., employed as an associate engineer in the proration group for the Midland division office of Mobil Oil Corporation.

Q Have you on any previous occasion testified before the Commission so that your qualifications are a matter of record?

A Yes, I have.

1 MR. SPERLING: Are the witness's qualifications
2 acceptable?

3 THE EXAMINER: They are.

4 Q (By Mr. Sperling) What is Mobil seeking by this applica-
5 tion, Mr. Simmons?

6 A Mobil Oil Corporation by this application seeks to
7 expand the Bridges State water flood project to include
8 the Bridges State well number 12 located in Unit P of
9 Section 26 and Bridges State well number 174 located in
10 Unit J of Section 15 all in Township 17 South, Range 34
11 East, Vacuum Grayburg-San Andres pool, Lea County, New
12 Mexico. Also requested is the authority to produce
13 Bridges State well number 12 at capacity.

14 Q Would you give us a brief history of the Bridges State
15 water flood project?

16 A Mobil's Bridges State water flood was initiated in 1958
17 and has, through several expansions, extended to the
18 present limits as proposed on Exhibit 1, a plat of the
19 water flood area. This area contains approximately 4280
20 acres. After two major expansions completed in 1970 there
21 were substantial responses to the water injection programs
22 as shown on Exhibit 2, the production history graph for
23 the project. It is a response from the last project
24 expansion that we are concerned with at this hearing.

25 Q Had there been any Commission action with regard to this

1 application prior to this hearing?

2 A Yes. Mobil's letter of July 10, 1972 requested this
3 expansion be administratively approved. Mobil was
4 informed by the Commission that these two wells could not
5 qualify under Rule 701-E and that the applicant must
6 therefore--application must therefore be set for hearing.
7 However at Mobil's request the Commission did grant the
8 Bridges State well number 12 a temporary allowable
9 increase supplement number 164 dated July 1972 from the
10 present top of 80 barrels of oil per day to a new top
11 allowable of 100 barrels per day. This extra production
12 of over 80 barrels per day is subject to being compensated
13 for by underproduction at some future date unless a
14 project area is extended to include well number 12.

15 Q Was there some unusual circumstances that affect the
16 Commission's consideration so far as well number 12 is
17 concerned?

18 A Yes, there is. Referring to Exhibit 1, you can see that
19 the normal water injection pattern has not been extended
20 to all of the south boundary of the project. This was
21 as a result of the denial issued in case number 4368
22 Order R number 3940-A in which Mobil requested an
23 authority to convert wells 15 and 25 located respectively
24 in Units O and I of Section 26, Township 17 South, Range
25 34 East, Lea County, New Mexico. You will note that both

1 these wells are direct offsets to well number 12 and their
2 conversion to water injection would have qualified well
3 number 12 for an administrative inclusion into the project
4 area.

5 Q Mr. Simmons, in view of the fact that the Commission's
6 position that there was not justification for administra-
7 tive approval under Rule 701-E-2 which provides that
8 additional proration units not directly or diagonally
9 offsetting an injection tract may be included in the
10 project area--if after notice and hearing it has been
11 established that such additional units have wells com-
12 pleted thereon which have experienced a substantial
13 response to water injection, is Mobil asking approval of
14 the application which is the subject of this hearing under
15 this provision?

16 A Yes, we are. Mobil believes that these wells can qualify
17 under this for such consideration under this rule.

18 Q What evidence do you have that will show that there has
19 been a response in these wells to the water injection
20 wells in the area?

21 A Well, I plan to discuss well number 12 first and well 174
22 second. Exhibits number 3 through 8 are individual graphs
23 of well tests showing both oil and water volumes for the
24 well or for the wells in the area of well number 12.
25 Exhibit 3 is a test history of well number 12 and shows

1 that it was acidized on July 25, 1971 to clean out the
2 well bore and increase production. After the workover
3 the well tested 61 barrels of oil per day on August 2nd,
4 1971. This increase in production was short-lived for
5 by October 6, 1971 the well test was down to 37 barrels
6 of oil per day. However, from this time on the well tests
7 have indicated an average increase in production. In my
8 opinion this well has experienced substantial response to
9 the water flood since the latter part of October 1971 and
10 most likely from the nearest water injection wells,
11 Bridges State wells number 30 and 35 in Section 26.
12 Injection in these two wells began in July 1970 and an
13 estimated cumulative water injection as of August 23,
14 1972 is 180,000 barrels for well number 30 and 392,000
15 barrels for well number 35.

16 Q Are there other water injection wells in the vicinity on
17 offsetting leases which might be responsible at least in
18 part for this response?

19 A No. Mobil has the only water injection wells in the area
20 as the other operators have not started a water flood
21 project yet.

22 Q Have other wells in the immediate area of well number 12
23 shown a response which might be indicative of the response
24 effect insofar as 12 is concerned?

25 A Yes. I would like to introduce the Exhibits 4 through 7

1 and these are the graphs showing the test history of
2 wells number 15, 26, 33 and 25. Exhibit 4 is a graph for
3 well number 15. It shows a reversal in decline shortly
4 after injection started in wells 30 and 35 in July of
5 1970. Since then the average test results show a steady
6 increase in production. Exhibit 5 is a graph for well
7 number 25. It shows the immediate effect of a successful
8 workover in May 1970 with a rapid decline until it
9 responded to the water injection into well number 30 and
10 started in July 1970. The response was sharp and had
11 stabilized at a level three times higher than before
12 injection began. Exhibit Number 6 is a graph for well
13 number 26 and shows a quick positive response with the
14 oil production leveling off at an average of ten times
15 greater than production before injection. Exhibit 7 is
16 a graph for well number 33. It showed immediate response
17 and then dropped off sharply after December 1970. After
18 the well was pulled in October 1971 total produced fluid
19 again rose but started declining again at a lower rate.
20 I believe this can be explained in the sign for the need
21 of workover or equipment change in the well.

22 Q What conclusions do you draw from the data which is
23 indicated on the exhibits to which you have referred,
24 4 through 7.

25 A In my opinion the entire area southeast part of Section

1 26 lying southeast of injection wells 29, 35, 30 is
2 experiencing a substantial response to water injection
3 from Mobil's Bridges State water injection project.

4 Q Does the project in the vicinity of well number 12 have
5 any back-up?

6 A No, it does not.

7 Q What is the result of that?

8 A Since there is no back-up for Mobil's Bridges State water
9 flood project by a lease line injection wells or some
10 natural barrier it is my opinion that Mobil Oil's reserve
11 will migrate off lease thereby being lost to Mobil's well.
12 This probability was firmly attested to by Marathon Oil
13 Company and Continental Oil in Examiner's Case Number 4367
14 and 4368.

15 Q I take it then that it is your opinion that without the
16 inclusion of well number 12 into the project that Mobil's
17 correlative rights will be adversely affected by the
18 migration of oil from Mobil's lease?

19 A Yes, definitely.

20 Q Now, would you refer to well 174 and indicate what response
21 if any it has shown to the water injection.

22 A If we can refer to Exhibit Number 8 which is a graph of a
23 daily production of well number 174, the well was
24 completed just lately in April of 1972 and potential on
25 May 21st, 1972 was for four barrels of oil plus 82 barrels

1 of water with gas volumes too small to measure. Fluid
2 production dropped initially in May 1972 to three barrels
3 of oil plus 70 barrels of water per day and then sharply
4 increased in July of 1970 to eight barrels of oil plus
5 33 barrels of water. I believe that this response is
6 caused primarily by the 770,000 barrels of accumulative
7 injection into water injection well number 66 and the
8 some 1,700,000 barrels of accumulative injection into
9 water injection well number 62.

10 Q Do you have any other reasons for asking for the inclusion
11 of 174 into the project?

12 A Yes. In addition to the substantial response shown by
13 well number 174 it is an addition to the Bridges State
14 water flood project--it would eliminate unnecessary paper-
15 work and a need for separate reporting. Also as the well
16 further responded to the water flood well number 174 will
17 then be able to produce capacity and protect Mobil's
18 correlative rights in that area.

19 Q Do you have any other evidence pertinent to this applica-
20 tion?

21 A Yes. Exhibit 9 is a letter from the office of the
22 Commissioner of Public Land stating that they had no
23 objection to the inclusion of these wells into the project
24 area subject to the Commission's approval. Also there is
25 a copy of an unsolicited waiver from Continental Oil

1 Company Exhibit Number 10 stating they have no objection
2 to well number 12 being included in the project area.
3 Q Do you have anything further?
4 A I have nothing further.
5 MR. SPERLING: I would like to offer Exhibits 1
6 through 10 at this time, Mr. Examiner.
7 THE EXAMINER: Without objection Exhibits 1 through
8 10 will be admitted into evidence.
9 Are there questions of this witness?
10 Mr. Simmons, have the other wells offsetting well
11 number 174 experienced an effect from the water flood?
12 THE WITNESS: No, sir, not as sharp as this. I
13 checked that and it is my thoughts that it is 174 that is
14 feeling this response from these two closest wells but 68 nor
15 167, neither one, have shown any sharp increase such as 174.
16 THE EXAMINER: Do you have any knowledge of any uni-
17 que reservoir characteristics that are causing well number 174
18 and number 12 to experience these increases while offsetting
19 wells are not experiencing them or not experiencing them as
20 much?
21 THE WITNESS: I would like to answer that question
22 in two parts. I think number 12 shows a normal situation
23 whereas the whole southeast part of Section 26 does exhibit
24 response. All those wells shown there exhibit some sort of
25 response, but now 174 there must be a unique situation there

1 but it is a new well. It was completed under new methods and
2 I have no reason to explain that and no way of explaining it,
3 but we were able to show the response on the graph and I
4 thought it would be helpful to do so.

5 THE EXAMINER: You gave us three tests, I believe,
6 or three different rates of production on that. I wonder if
7 you would repeat those and then calculate the total fluid on
8 each one of those.

9 THE WITNESS: That would be in relation to Exhibit
10 8?

11 THE EXAMINER: Yes.

12 THE WITNESS: The potential was 86 and fluid produc-
13 tion dropped then to 73 and then sharply increased to 41. We
14 drilled into an area where I would have expected some build-up
15 in reservoir pressures due to it being an undrilled area and
16 we got what was there which was a lot of water and a little
17 bit of oil and now that the oil is increasing, whereas the
18 total fluid volume is not increasing, we have, I think, after
19 the well drew off that initial surge of pressure there it will
20 respond in a normal way. I think we will be experiencing
21 additional increases.

22 THE EXAMINER: To your knowledge have the producers
23 offsetting your well number 12 experienced any increase in
24 production?

25 THE WITNESS: No. I was unable to ascertain whether

1 they had or not, but there was considerable testimony during
2 these hearings that we had that we probably aren't producing
3 from the same zones in those areas and this is something I
4 would expect. However, they should experience some response
5 if they do produce from that zone at any later time.

6 THE EXAMINER: In both cases it is your feeling that
7 if you are not allowed to include these wells in the project
8 area and get the benefit of water flood allowables that oil
9 will be lost?

10 THE WITNESS: Yes, sir.

11 THE EXAMINER: Will this be permanently lost?

12 THE WITNESS: In the case of 174 if and when that
13 happens, yes. There are no wells in that area to recover it.
14 In the case of well number 12 where we are offset by Marathon
15 and Continental, I am sure that they would assist in the
16 recovery of Mobil's oil in every way that they could, but we
17 would not be able to recover it.

18 THE EXAMINER: Are there other questions of the
19 witness? You may be excused.

20 We will take this case under advisement.
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I N D E XWITNESSPAGE

MR. W. B. SIMMONS, JR.

Direct Examination by Mr. J. E. Sperling

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E X H I B I T SPAGE

Exhibit 1 -

Plat of water flood area

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Exhibit 2 -

Production history graph for project

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Exhibit 3 -

Test history of well number 12

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Exhibit 4 -

Graph for well number 15

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Exhibit 5 -

Graph for well number 25

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Exhibit 6 -

Graph for well number 26

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Exhibit 7 -

Graph for well number 33

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Exhibit 8 -

Graph of daily production of well number 174

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Exhibit 9 -

Letter from office of Commissioner
of Public Land

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Exhibit 10 -

Waiver from Continental Oil Company

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1 STATE OF NEW MEXICO)
 2 : ss.
 3 COUNTY OF BERNALILLO)

4 I, MARCIA J. HUGHES, Court Reporter, do hereby certify
 5 that the above and foregoing pages are a true and correct
 6 transcript of the proceedings had before the New Mexico Oil
 7 Conservation Commission on Wednesday, August 23, 1972.

8 *Marcia J. Hughes*

dearnley, meier & mc cormick

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 23 4800
 24 on August 23, 1972
 25 *Richard J. Hunt*