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BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
November 29, 1967

EXAMINER HEARING

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IN THE MATTER OF: )

Application of Skelly Oil )  
Company for a waterflood )  
expansion, Lea County, New )  
Mexico. )  
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CASE 3692

BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: Case 3692.

MR. HATCH: Case 3692. Application of Skelly Oil Company for a waterflood expansion, Lea County, New Mexico.

MR. GRANT: J. B. Grant, Tulsa, Oklahoma, for the Applicant. I have one witness.

MR. UTZ: Other appearances?

(Witness sworn)

MR. GRANT: Before we begin, Mr. Examiner, I might state that the only reason we are here with this application rather than administratively, is because there has not yet been response to this waterflood project. Had there been, of course, we could have received administrative approval on the wells.

LARRY R. HALL

called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. GRANT:

Q Please state your name and place of residence.

A Larry R. Hall, Hobbs, New Mexico.

Q By whom are you employed and in what capacity?

A I am employed by Skelly Oil Company as an advance

production engineer.

Q Have you offered testimony before this Commission as an Engineer on previous occasions, and have your qualifications been accepted?

A I have testified and my qualifications have been accepted.

Q Are you familiar with the Lovington Paddock Unit of the Lovington Paddock Waterflood Project?

A Yes, sir, I am.

Q That is the subject of this application, is it not?

A Yes, it is.

Q Would you please give the Examiner a little background on the Lovington Paddock Unit in this waterflood project?

A The Lovington Paddock unit is operated by Skelly Oil Company. It was established by the New Mexico Oil Conservation Commission Order R-3124, issued on September 30, 1966. The unit consists of 81 wells, 18 of which are currently water injection wells and 63 are producing oil wells. The original order established 22 water injection wells, offset producers have caused a delay in converting four of these wells and no property lease-line agreements can be made to protect correlative rights. These agreements are pending on the formation of a waterflood unit to the east of the Lovington Paddock

unit which is not expected to become effective in the immediate future.

Q When did injection of water begin in these 18 wells, Mr. Hall?

A We began the injection of water in December of 1966; our initial plan of operation and our economic projections were based on an injection rate of 9000 barrels of water per day. The waterflood plant and the water injection system were designed to handle this volume at a pressure of 1850 pounds. It became apparent, quite soon, that the reservoir would not accept water at the anticipated rate through only these 18 wells. We acidized four of these wells in an attempt to increase the injectivity. These acid jobs did not increase the injection rates and indicated that the problem was not well-bore damage, but reservoir characteristics. In order to inject water at our desired rate, more wells would have to be utilized. For this reason we are requesting additional wells be approved for conversion to water injection.

Q In other words, to receive response from this project, you would have to inject 9000 barrels into the formation at 1850 ~~PSI~~ and the formation is not now capable through the existing injection wells of accepting that volume, is that correct?

Q Referring to those four wells which were previously approved and which have not yet been converted, you mentioned in passing awhile ago, the reason why those have not yet been converted, would you go into -- point those wells out for the Examiner, and go into a little more detail as to the status of those wells and what the plans for them are?

A The four wells are -- the first one is Unit Well number 2, it is in Section 25 in the southeast quarter. Well number 25 which is in the northeast quarter of Section 31, Well number 34 which is in the southeast quarter of Section 31 and Well number 53 which is in the northeast quarter of Section 6. The three well numbers, 25, 34 and 53, have been delayed pending the formation of this waterflood unit to the east. It was pointed out in our original application in '66, that these wells would be delayed until proper lease-line agreements could be made between these two units.

Q Are negotiations underway at the present time for that lease-line agreement?

A No, there has been one operators meeting, I understand, on this unit and it has not progressed to the extent that we can start negotiations.

Q But progress is being made and you do expect to convert those in the very near future, is that correct?

(Whereupon Skelly's Exhibit  
B marked for identification)

Q I now hand you what has been marked Skelly's Exhibit number B and ask you to state what that is and what it tends to show?

A Exhibit B is a map showing all the wells and leases within a two-mile radius of the Lovington Paddock Unit. It also shows a formation from which said wells are producing or have produced. The Paddock reservoir is the middle of the three oil producing horizons; these being the San Andres, Paddock and the Abo. Also shown on this exhibit is a boundary outline of the Lovington Paddock and the Lovington-San Andres units; both units operated by Skelly Oil Company.

(Whereupon Skelly's Exhibit  
C marked for identification)

Q I now refer you to what has been marked Skelly's Exhibit C and ask you to state what that is.

A Exhibit C is the plat of the Lovington Paddock unit showing only the Paddock well locations. The present and the proposed injections wells are designated on this exhibit. The current 18 wells are indicated by the API standard symbol. The four wells approved as injection wells on the original order which have not yet been converted, are shown with a blue circle around the well location. The seven wells applied for in this application are underlined in red.

A That is correct.

(Whereupon, Skelly's  
Exhibit A marked for  
identification)

Q I hand you what has been marked Skelly's Exhibit  
A and ask you to state what that is and what it tends to show?

A Exhibit A is our tabulation of monthly water  
injection rates since the start of our injection. This tab-  
ulation shows a decline of water being injected. It also  
indicates that if the decline continues it won't be very long  
until only a small volume of water will be injected into the  
reservoir, greatly increasing the time required to complete the  
waterflood project.

Q The approval which was previously received for the  
22 wells, was based on an inverted nine-spot pattern, was it  
not?

A That is correct.

Q And these additional wells which you are now seeking  
would change that to a five-spot pattern, would they not?

A That's right, in the area of where these additional  
conversions will be made. The nine-spot will be converted to  
the regular five-spot pattern.

Q And this would hold true for any additional wells that  
might possibly be converted at a later time?

A That's right.

A We could receive a response at a lesser injection rate, but it would be a delayed response and the time is in essence. Based on this performance to date of the reservoir's ability to take this fluid, we are requesting that this application be approved and that provisions be made to allow these additional wells to be converted for injection by administrative approval, to the Secretary-Director. In the event that these seven wells will not take the desired volumes, we are requesting that additional wells could be converted if the need again arises to have injection wells, to add injection wells to permit the injection of our desired 9000 barrels a day.

MR. GRANT: I might say, Mr. Examiner, that the application stated that we are requesting approval for eight additional injection wells; actually there are seven as the exhibits attached to the application indicate.

Q So, what you are saying now, Mr. Hall, is that we not only wish approval of these seven wells, but we want the order to provide that administratively we may obtain approval for additional injection wells in either one of two events; in the event that they are needed to achieve response or in the event that response is obtained and the additional wells are needed to maintain the flood in the natural state of progression, is that correct?



A Yes, this is right.

Q Those two Tenneco wells on the nor  
outside of the unit area, are they not?

A Yes, they are shown on the large <sup>are</sup> map, .  
Exhibit C does not show those outside wells. At  
application we had intended to inject into Well nu  
the outset of the formation of this unit, however, I  
has completed the northeast diagonal well to this well  
2 and we cannot start injection in this well because of the  
offset production.

Q So to protect correlative rights, you can't convert  
that one quite yet?

A This is true.

(Whereupon Skelly's Exhibits  
D1 through D8 marked for  
identification)

Q I now refer you to what has been marked Exhibit D1;  
actually it is Exhibit D and it is in seven parts.

A Eight parts.

Q Excuse me, eight parts. Exhibit D1 through D8 and  
I would ask you to explain what those are and what they tend  
to show?

A Exhibits D1 through D7 are the schematic diagrams  
of these seven proposed injection wells with the log sections  
attached. Shown on these diagrams are all casing strings

including the diameters and the setting depths, perforated or open hole intervals. Tubing string including the diameter and the setting depth and a top and location of packer. Exhibit D8 is a table which has been prepared showing these casing programs on these seven proposed injection wells and showing the quantities of cement used and the tops of cement behind each casing string.

Q Is Exhibit D7 the same exhibit which was furnished by mail to the Examiner with the application?

A Exhibit D7 has been changed. It is different from the one sent through the mail.

Q In what way?

A The seven-inch casing string was shown as a full string on the original application. It was a well that we took over from the former operator and we had conflict in that seven-inch is a liner rather than a full casing string and I believe the surface casing was left off of the original exhibit.

Q And Exhibit D8 was added?

A That's correct.

Q All right.

(Whereupon Skelly's Exhibit  
E marked for identification)

Q I now refer you to what has been marked Exhibit E and ask you to state what that is and its purpose?

A Exhibit E is the latest C-116 filed with the New Mexico Oil Conservation Commission on this Lovington Paddock Unit. It is dated May the 2nd, 1967. The production at the present time is comparable to that shown on this form. As no response to injection has been noted within the unit, the average daily well production is six barrels of oil per day per producing well.

Q Since the average well daily production is only six barrels of oil, is it your opinion based on expert engineering evidence, that this unit is in an advanced state of depletion and the wells are classed as stripper wells and that the granting of this application is necessary in order to recover oil which might not otherwise be recovered?

A Yes, it is my opinion.

Q Will Skelly continue to submit progress reports monthly in accordance with Rules 704 and 1120 in the event this application is granted?

A Yes, sir, we will.

Q Has a copy of this application and exhibits been furnished to the State Engineer?

A Yes, the State Engineer has been furnished all exhibits including D8, the supplement to Exhibit D and the revised D7.

Q Has he expressed any objection to the application?

A No, sir.

MR. GRANT: Exhibit A, which incidentally, Mr. Examiner, was also not mailed to the Examiner previously, but was furnished here today.

Q Were Exhibits A through E prepared either by you or under your supervision and direction?

A They were.

MR. GRANT: We offer Exhibits A through E.

MR. UTZ: Without objection Exhibits A through E will be entered into the record of this case.

(Whereupon Skelly's Exhibits A through E were offered and admitted in evidence)

MR. GRANT: I have no further questions.

MR. UTZ: Mr. Grant, these four wells which you say you had previous approval and have not converted yet because of these lease-line agreements, are they listed in Order 3124?

MR. GRANT: That's the original order, yes, sir, they were listed.

MR. UTZ: I was just glancing at them here and I'm having a little trouble.

A I think the original order --

MR. UTZ: Let's go off the record a minute.

(An off the record discussion was held)

MR. UTZ: You are not seeking approval for those four wells here?

MR. GRANT: No, sir, we were merely explaining their status at the present time.

MR. UTZ: And the seven wells listed are the seven wells on which you are requesting approval at this time, are the ones listed on page 1 of your application, are they not?

MR. GRANT: Yes, sir.

MR. UTZ: And those locations are correct?

MR. GRANT: Yes, sir.

MR. UTZ: Any other questions? Witness may be excused.

(Witness excused)

MR. UTZ: Case will be taken under advisement.  
Any other statements?

I N D E XWITNESSPAGE**LARRY R. HALL****Direct Examination by Mr. Grant****2**E X H I B I T SEXHIBIT                      MARKED                      OFFERED AND ADMITTED**Skelly's Exhibit****A                                      6****Skelly's Exhibit****B                                      7****Skelly's Exhibit****C                                      7****Skelly's Exhibits****D1 through D8                      9****Skelly's Exhibit****E                                      10****Skelly's Exhibits****A through E                      12**

STATE OF NEW MEXICO )  
 ) ss  
COUNTY OF BERNALILLO)

I, KAY EMBREE, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

Witness my Hand and Seal this 5th day of  
December, 1967.

Ray Embree  
Notary Public

**My Commission Expires:**

Nov. 13, 1971

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3692, heard by me on Nov. 29, 1967.

*Walter A. [Signature]*, Examiner  
New Mexico Oil Conservation Commission