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

October 23, 1968

EXAMINER HEARING

IN THE MATTER OF:

Application of Skelly Oil Company for waterflood project, Roosevelt County, New Mexico.

Case No. 3907

BEFORE: Daniel Nutter, Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: Call Case No. 3907.

MR. HATCH: Case 3907, application of Skelly Oil Company for waterflood project, Roosevelt County, New Mexico.

(Whereupon, Applicant's Exhibits Numbers 1 through 5 were marked for identification.)

MR. JACOBS: Ronald J. Jacobs, appearing on behalf of the applicant, Skelly Oil Company. We have one witness, Mr. Hall. He has previously been sworn. I think that this is sufficient.

MR. NUTTER: The record will show he is still under oath; letter of appearance also.

LARRY R. HALL

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

DIRECT EXAMINATION

BY MR. JACOBS:

Q Mr. Hall, are you familiar with the application in Case No. 3907, and if so, would you explain what is being sought in that application?

A Case 3907 is the application of Skelly Oil Company for authority to inject water into their Hobbs "W" 9 Well in the Chaveroo Pool, Roosevelt County, New Mexico.

Q Mr. Hall, referring to what has been marked for identification as Exhibit Number 1, would you relate to the

Examiner what this exhibit shows?

A Exhibit Number 1 is a copy of the plat showing the proposed injection well circled in red, and the location and ownership of all leases within the two-mile radius of the exposed well. The Skelly Hobbs "W" lease is shown in yellow. The Hobbs "W" 9, the proposed injection well, is located 1650 feet from the north line and 1650 feet of Section 29, Township 7 South, Range 34 East, Roosevelt County, New Mexico.

Q Now, referring to what has been marked for identification as Exhibit Number 2, would you identify that exhibit, and relate to the Examiner what it shows?

A Our Exhibit 2 is a schematic diagram of the proposed injection well showing the size and setting depth of the casing, the quantities used in tops of cement, the size and setting depth of the tubing, the location of the packers and the perforated interval. The Hobbs "W" 9 was drilled to a total depth of 4500 feet, casing was set total depth of the overall intervals 4369 to 4443 was perforated. This was perforated in what is more commonly known as P2 and P3 porosity zone. The well was treated with 4,000 gallons of 28 per cent acid, swab tested at the rate of 15 barrels of salt water per hour, with flood level at 2,000 feet from surface, with a very slight rainbow of oil after 24 hours. The well was temporarily abandoned after completion in June of 1968. We propose to

inject down two and three-eighths inch OD internally-lined tubing below a packer set at approximately 4275 into the perforations tested salt water.

Q Now, I direct your attention to what has been marked for identification as Exhibit Number 3, would you relate to the Examiner what that exhibit shows.

A Exhibit Number 3 is a log section of the formation density log on the proposed injection well.

Q It covers the interval into which you propose to inject water?

A This is true, yes, sir.

Q Now, referring to what has been marked for identification as Exhibit Number 4, would you relate to the Examiner what this exhibit shows?

A Exhibit 4 is a structure map contoured on the top of the San Andres Formation contoured interval of 25 feet. It can be noted from the map the Hobbs "W" 9 is structurally low to the offsets and represent, in our opinion the productive limits of the pool to the southeast. The pay zone to the Chaveroo Pool are below the oil-water contact in the Hobbs "W" 9 as evidenced by the production tests. The Hobbs "W" 9 is 73 feet low to the north offset and 74 feet low to the west offset on the top of the San Andres.

Q Now, referring to what has been marked for

identification as Exhibit Number 5, would you relate to the Examiner what this exhibit shows?

A Exhibit Number 5 is a water analysis of the water produced from the Hobbs "W" 9. This analysis shows the water to be mineralized water, unsuitable for domestic, stock, or irrigation, or general use. The approval of the Commission to permit the injection of this produced water into the proposed well as set forth in this application will eliminate the surface disposal of the produced water on the Skelly Hobbs "W" lease.

Q Mr. Hall, in your opinion, what effect would the injection of produced water into the proposed well have on the recovery of oil in the area?

A Injection of water into the proposed injection interval could have an effect on the recovery of oil in this area. The primary producing mechanism in the Chaveroo Pool, we believe, is the solution gas dry. Some thought has been given in regard to the waterflooding, but to our knowledge, no unit study has been made. Several pilots are in the process of being formed, or are now installed within the Chaveroo boundary. The proposal presented by Skelly is to inject produced water back into the reservoir below the oil-water contact and help maintain the reservoir energy. This injection of produced water, we believe, will increase production in the

offset wells. The average daily production from the eight producing wells on the Hobbs "W" lease was 22 barrels of oil per day per well for the month of August, to high as 39 barrels on the No. 7, and a low of ten barrels on the No. 8. Due to the rapid decline rate being experienced on this lease, the wells will be in the stripper classification before very long. We are experiencing somewhere between a 30 and 40 per cent decline rate. The primary purpose of this application is to conduct a pilot waterflood and disposal of produced salt water from the Hobbs "W" lease, and I might add, other leases within the immediate area. We have been contacted by various other operators with considerable interest in this disposal well, injection well. Based on the performance and information we hope to gain from injection into the Hobbs "W" 9, we request administrative approval to expand the project, convert additional wells on the Hobbs "W" lease.

Q Mr. Hall, what is the anticipated injection rate and the anticipated pressure for injection on the Hobbs "W" 9?

A Initially, we anticipate from 200 to 250 barrels per day, with the maximum rates being dictated by the water production in the area of the injection well capacity. Our maximum anticipated injection pressure is approximately 1500 pounds.

Q Now, Mr. Hall, I think you mentioned it, but just so

it will be clear what is the force of the water that will be injected into this well?

A The force of water that will be injected is produced water from the same interval that we propose to inject back into.

Q So that the water that you are going to put into the reservoir is produced water from that same reservoir?

A That is true.

Q You anticipate no difficulty as regard to compatibility of the water?

A That's right. No compatibility problems are expected.

Q Mr. Hall, will the granting of this application result in any waste?

A No, the granting of this application will result -- the produced water which is presently being disposed of in surface pits be injected underground and we expect an increase in production from the up-dip wells, and thereby we hope to recover oil that might not otherwise be recovered.

Q Mr. Hall, in your opinion, will the granting of this application result in the impairment of any correlative rights?

A In my opinion, there will be no impairment of correlative rights.

Q Were Exhibits 1 through 5 prepared by you, or under your supervision?

A Exhibits 1, 2, and 4 were prepared by me, or under my supervision, and Exhibits 3 and 5 were taken from well data previously available on the well.

Q With regard to Exhibits 3 and 5, Mr. Hall, do they accurately reflect the information contained thereon?

A They do.

MR. JACOBS: We offer into evidence Exhibits 1 through 5.

MR. NUTTER: Skelly Exhibits 1 through 5 are admitted in evidence.

(Whereupon, Applicant's Exhibits 1 through 5, inclusive, were admitted in evidence.)

MR. JACOBS: I might point out, we are also, in this case, asking that permission be granted to administratively expand the project to include other wells on this lease so that we will not have to show a response if the need for such expansion is dictated by the necessity of utilizing water. That's all we have.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Hall, you mentioned that the average daily produciton here is 22 barrels of oil per day. What is the average daily water production for the Hobbs "W" lease?

A The lease is producing currently -- the August production, which is comparable to the 22-barrel average, was 61 barrels.

Q Of water per day?

A Yes. That's total lease water.

Q Now, you mentioned that you would inject from 200 to 250 barrels of water per day, so does that mean you are going to be taking water from other leases in the area?

A Yes. Considerable interest has been indicated. I think it was Monday we got a letter from Tenneco, which is the east offset.

Q West offset.

A The west offset, their State V lease, and they have 150 to 175 barrels of water per day now, and they have expressed a desire to join our system.

Q Are all of your wells making water, or only the ones over on the southwest flank, near the water-oil contact?

A I can only speak in generalities. We have a Hobbs "T" lease. All wells that we have, to my knowledge, do exhibit some water production.

Q But there definitely is a water well contact that cuts across here, as evidenced by the drillstem test on this well?

A Production test, yes.

Q Or production test. And although this water-oil contact is present, there is no evidence in here of an active water drive?

A No, sir, bottom hole pressure is declining rapidly, and so are producing rights.

Q And so you feel that you may enhance oil production by the injection of water?

A Yes, we do.

Q What about the annulus of the well, Mr. Hall?

A The annulus will be loaded with an inhibited fluid and we will attach a pressure gauge to the surface.

MR. NUTTER: Are there any other questions of Mr. Hall? He may be excused. Do you have anything further, Mr. Jacobs?

MR. JACOBS: Nothing further.

MR. NUTTER: Does anyone have anything they wish to offer in Case No. 3907? The case will be taken under advisement.

I N D E X

C E R T I F I C A T E

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, GLENDA BURKS, Court Reporter 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.

Glenda Burks
COURT REPORTER

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3907, heard by me on 10/23, 1968.

, Examiner
New Mexico Oil Conservation Commission