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FARMINGTON, N. M.  
PHONE 325-1162SANTA FE, N. M.  
PHONE 983-3971ALBUQUERQUE, N. M.  
PHONE 243 6691BEFORE THE  
OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico

September 27, 1962

EXAMINER HEARINGIN THE MATTER OF:

Application of Phillips Petroleum Company for a unit agreement, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks approval of the West Cap Queen Sand Unit Agreement embracing 1,680 acres, more or less, of State, Federal and Fee lands in Township 14 South, Range 31 East, Caprock Queen Pool, Chaves County, New Mexico.

CASE NO.  
2642

Application of Phillips Petroleum Company for a waterflood project, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks approval of a waterflood project on its proposed West Cap Queen Sand Unit Area, Caprock Queen Pool, Chaves County, New Mexico, by the injection of water into the Queen Formation through 17 wells located in Sections 8, 17, 20 and 21, Township 14 South, Range 31 East. Applicant proposes to operate the waterflood project under the provisions of Rule 701.

CASE NO.  
2643

UNDER: Elvis A. Utz, Examiner

TRANSCRIPT OF PROCEEDINGS

MR. DURRETT: Application of Phillips Petroleum Company for a unit agreement, Chaves County, New Mexico.

MR. KELLAHIN: Jason Kellahin of Kellahin and Fox, Santa Fe, New Mexico, representing the applicant in association with Mr. Carl Jones of Midland, Texas. We have one witness in this case that I would like to have sworn, please. (Witness sworn.)

MR. KELLAHIN: If the Commission please, our case is



based primarily upon the contents of the unit agreement, three copies of which were filed with the Commission along with a number of attached exhibits to which reference will be made.

T. A. MATTHEWS,

called as 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 T. A. Matthews.

Q By whom are you employed and what is your position?

A Phillips Petroleum Company as a supervising area petroleum engineer, Bartlesville, Oklahoma.

Q Have you testified before the Oil Conservation Commission and had your qualifications made a matter of record?

A I have.

MR. KELLAHIN: Are the witness's qualifications satisfactory?

EXAMINER UTZ: Yes, sir.

Q (by Mr. Kellahin) Mr. Matthews, in Phillips Petroleum Company, what department handles your unit agreement work?

A The production department.

Q As a member of the department, are you familiar with the unit, the West Cap Queen Sand Unit?

A I am.

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Q Did you actively participate in the formation of that unit?

A I did.

Q Now, would you state for the benefit of the Commission the area covered by the unit agreement?

A If I may make reference to the plat that is contained within the unit agreement, the unit area is comprised of the East half of the Northeast quarter of Section 8 and the South half of Section 8, all of Section 17, the Northeast quarter of Section 20, the Southwest quarter of the Southwest quarter of Section 16, the North half of Section 21, and the North half of the Southeast quarter of Section 21 and the Southwest quarter of the Southeast quarter of Section 21, all in Township 14 South, Range 31 East, Lea County -- Chavez County, excuse me, New Mexico.

Q Now, you made reference to the Southwest of the Southwest quarter of Section 16. On the plat which was filed with the Commission, it's colored in as a part of the unit. Is it correct that it is within the unit?

A It is and is so set out.

Q It is set out?

A In the description.

Q And the description is correct and of course covers a quarter-quarter section?

A That is correct.

Q What formation is covered in the unit agreement?



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A It covers only the Queen Sand formation.

Q The working interest owners have fully signed up on the unit agreement?

A One hundred percent have signed up for the unit agreement.

Q What is the situation on the royalty owners?

A One hundred percent of the fee royalty owners have signed ratifying it, and the state and federal lands are not yet committed.

Q What is the situation as to the state and federal lands?

A The unit agreement has been approved as to form by both the State Land Commission's office and by the USGS.

Q You anticipate no difficulty in securing final approval on the application by the Commissioner?

A That is right.

Q What percentage of the land is federal, state and fee, what portion of the acreage?

A The unit is 1680 acres, of which 320 acres is fee land, 280 acres state lands, and 1080 acres are federal lands.

Q Now, does the unit agreement have any lands inside the green boundary which are uncommitted?

A It does not.

Q Is there a provision for the enjoinder of any acreage outside of the unit at any future date?



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A Such a provision is included.

Q To your knowledge, is the unit offset by other units of a similar nature?

A The Drickey Queen Unit, which is operated by the Cities Service Petroleum Company, and the waterflood operated by John H. Trigg on the south, which is offset by a tract owned by Meyer Bennett.

Q Have you negotiated with him to join the unit?

A Yes, sir, we did. We included it in the original studies and it was included in our original plat, and Mr. Bennett advised us that he did not wish to be considered or included in the unit and was planning to waterflood his property separately.

Q What action did Phillips take in regard to the unit after you received that information?

A That acreage was deleted from the unit after he advised us.

Q I understand, but did you keep him advised at all times?

A He was advised, yes, sir.

Q And the door remained open throughout that entire period?

A That is correct.

Q I see. Now, is the unit agreement, Mr. Matthews, in essentially the same form as unit agreements heretofore approved by the Commission?

A Yes, sir. Actually, it was patterned after the Drickey Queen Unit agreement which had previously been approved by the



Commission and the USGS.

Q And essentially, it's the same, that unit agreement?

A That is correct.

MR. KELLAHIN: That is all I have, Mr. Utz.

CROSS EXAMINATION

BY EXAMINER UTZ:

Q Mr. Matthews, did you say the forty acres in question was the Southwest of the Southwest of Section 16?

A That is correct.

Q That is shown correctly in the unit agreement?

A Right.

EXAMINER UTZ: Are there other questions?

The witness may be excused.

Are there any other statements in this case?

The case will be taken under advisement.

MR. DURRETT: I have two telegrams I would like to read into the record.

The Commission has received a telegram from Cities Service Petroleum Company which I will read into the record: "Cities Service Petroleum Company operates the Drickey Queen Sand Unit which offsets the proposed West Cap Queen Sand unit operated by Phillips Petroleum Company and it recommends approval of 2642 and 2643."

I have another telegram received from W. B. Hopkins which I will read into the record: "Gulf Oil Company Incorporated, being a working interest owner in the proposed West Cap Queen unit, concurs

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with Phillips Petroleum Company in their application in these cases."

EXAMINER UTZ: That was the West Cap Queen unit?

MR. DURRETT: Yes, Mr. Examiner.

EXAMINER UTZ: The case will be taken under advisement.

\* \* \*

EXAMINER UTZ: Case 2643.

MR. DURRETT: Application of Phillips Petroleum Company for a waterflood project, Chaves County, New Mexico.

MR. KELLAHIN: Jason Kellahin of Kellahin and Fox, Santa Fe, New Mexico, appearing for the applicant in association with Mr. Carl Jones of Midland, Texas. We have one witness we would like to have sworn.

(Witness sworn.)

(Whereupon Applicant's Exhibits A, B, and C were marked for identification.)

DON CZIRR,

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Will you state your name, please?

A Don Czirr.



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Q By whom are you employed and what is your position?

A Phillips Petroleum Company, division reservoir engineer in Midland, Texas..

Q Have you testified before this Commission as a petroleum engineer and had your qualifications made a matter of record here?

A Yes.

MR. KELLAHIN: Are the witness's qualifications acceptable?

EXAMINER UTZ: They are.

Q (by Mr. Kellahin) Are you familiar with the application of Phillips Petroleum Company in Case No. 2643?

A Yes, sir.

Q What is Phillips applying for in this case?

A A waterflood for secondary recovery in the proposed West Cap Queen Sand Unit.

Q Would you discuss briefly the history of this unit?

A Yes, sir. The Caprock Queen pool was initially discovered in November of 1940, and after the period of development and primary production, it has reached the stripper stage of production, and the pool has now been placed under secondary recovery waterflood operations, largely through the formation of the unit.

The July Oil and Gas Committee report shows in excess of ninety-six percent of production in the Caprock Queen pool is being produced from the secondary recovery units that will have





the response from a waterflood project.

Q It's from wells within the units, is that what you mean?

A Yes, sir.

Q You stated that the field is at a marginal stripper stage of production?

A Yes.

Q Directing your attention to Exhibit No. A, would you discuss the information shown on that exhibit, please, sir?

A That is the production curve, a composite of the wells within the proposed West Cap Queen Sand Unit showing the monthly oil production. The curve indicates a decline which we can expect to continue in the present trend unless we do initiate secondary recovery operations. The eleven leases in the West Cap Queen Sand Unit at this time will be included in any secondary project and the unit cannot be equitably or efficiently waterflooded without the interest of the several units as proposed in our unit agreement and submitted as amended.

The purpose of the formation of the unit is to conduct waterflood operations on the West Cap Queen Sand Unit operation and to increase the recovery from the area. This area has had a total production of 1,100,000 barrels of oil through July of this year, and at that time had an estimated remaining primary recovery of 109,000 barrels, which would be recovered by marginal or stripper operation.

As we can see from the decline curve, the production is

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declining. For July, production was only a little in excess of four barrels of oil per day. The Unit engineers' committee has estimated that the waterflood we are proposing will recover additional oil equal to one and a half times the primary recovery or to about 1,100,000 barrels of oil.

Q What kind of injection pattern are you going to use in the pool?

A A five spot injection pattern. Inspection of the present patterns being employed on the adjacent Trigg Federal leases and the Drickey Queen Sand Unit will match the pattern proposed for the Bennett Zimmerman leases, which border the proposed unit to the south. We prepared --

Q How will the wells be equipped for injection, the proposed injection?

A We propose to inject through 2 3/8-inch tubing and a packer will be used for assurance that the well is injected only to the Queen pay section.

Q How many injection wells will there be, Mr. Czirr?

A Seventeen wells, sixteen of which will be converted producing wells. One is scheduled to be drilled. On our map, shown as Exhibit No. 19, we had listed the casing descriptions and the completion interval for each of the existing producing wells that will be converted to an injection service.

We have an exhibit B today that supplements that Exhibit 19.



Q Exhibit B, does Exhibit B give additional information other than that mentioned?

A Yes, sir. It shows the exact service locations for each of the proposed input wells. It also shows the casing program and shows the amount of cement used in each cementing job for each casing string.

Q Now, as a general proposition, what was the casing program on these wells?

A The general practice was to get a surface string sufficient to protect the surface waters and circulate the cement back to the surface and then drill to a total depth and run a production string backing from seven-inch to 4 1/2-inch casing in different cases and cementing around the shoe with one hundred to two hundred, in that range of cement, to isolate the Queen pay sand.

MR. KELLAHIN: I direct the Examiner's attention to a copy of the letter submitted with the application from the State Engineer approving the use of these wells under the plan of injection which will be discussed here.

Q (by Mr. Kellahin) Mr. Czirr, you propose to get the water for this waterflood project from where?

A As set out in the letter to the State Engineer's office and by copy of Exhibit B with this application, we anticipate the water for the West Cap Queen Sand Unit area from the Ogallala Sand at a depth of about three hundred feet. We plan to obtain

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this water about four miles east of the Unit area. It would be transported to a central point in the Unit and that is joined to each injection well. The water station will be located in the vicinity of our central storage battery. At such time as the producing wells start producing water, we will be able to reinject that produced water and conserve it in that manner.

Q Would you summarize the important points of this application?

A The important points we would like to discuss are these: The unitization and waterflood program for which we are asking an approval will recover an additional 1,678,000 barrels of oil over the predicted primary recovery and in this respect is in the interest of conservation.

Q How will the injection wells be injected, through the annulus or how?

A The injection will be through 2 3/8-inch tubing and with a packer in the hole to assure that none of it inadvertently will encroach into another zone of the hole.

Q Will the flood be through the annulus?

A Yes, sir, on top of the packer.

Q Does the Caprock Queen formation lend itself to water injection?

A Yes, sir, it has proved to be wholly successful in such units. The Rickey Queen offsetting has received real good response and is a very profitable commercial project. The same



could be said for the other units. We are interested in and have the information for such as the Great Western's North Central Caprock Queen. The response has been very good there.

Q Do you anticipate that the water will be taken on vacuum or under pressure?

A We will have to go to a pressure injection. Our system will be designed to handle up to 1500 pounds without adjustment.

Q Will the injection wells handle that pressure without too much trouble?

A Yes, sir.

Q Do you have anything to add to your testimony, Mr. Czirr?

A The only other points I think we might want emphasized would be that we are rescheduling our injection well for the Queen Sand. That is to be consistent with the patterns being used in the area and with balanced injection will protect correlative rights across the various boundaries; and the production curve shown as Exhibit A with its production of an average and low in excess of four barrels per day is considered to be a marginal or stripper operation; and it would be, then, our opinion that those fall within the limits for Rule 701.

Q Do you know whether or not all of the area in the plot is in this project?

A Yes, the project was based on the unit area as shown in the unit agreement.

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Q It was negotiated on this basis on which all the parties agreed, is that correct, sir?

A Yes, sir. All the working interest and royalty interest has indicated agreement.

Q Is this project in the interest of conservation, prevention of waste and in the preservation of correlative rights?

A Yes, sir.

Q Were Exhibits A, B, and C prepared by you or under your supervision?

A Yes, sir.

MR. KELLAHIN: We offer them into evidence.

EXAMINER UTZ: Such exhibits will be entered into the record of this case.

Are there other questions of the witness?

MR. DURRETT: Yes, sir.

CROSS EXAMINATION

BY MR. DURRETT:

Q How do you pronounce your name, Sirr or Seen?

A Sirr.

Q Mr. Czirr, do you propose that if this application be approved by the Commission, that it be governed by the provisions of Rule 701 governing waterflood projects?

A Yes, sir.

MR. DURRETT: Thank you.

CROSS EXAMINATION



BY MR. PORTER:

Q Is this regarding the old Caprock pool or the Drickey or the two combined?

A We drilled our wells in the Caprock Queen, I believe. It used to be the Drickey Queen area, to answer your question, and I can't remember the date that consolidation was made.

MR. PORTER: Thank you, sir.

REDIRECT EXAMINATION

BY MR. KELLAHIN:

Q As to the Drickey Queen Unit or Cities Service as approved in this area, was that substantially developed so it was the Caprock Queen at that time?

A Yes, sir.

MR. PORTER: I had an idea it was because of low productivity of the well at the present time.

CROSS EXAMINATION

BY EXAMINER UTZ:

Q Mr. Czirr, you will have a total of sixteen injection wells?

A We plan to drill one additional well, which would make seventeen.

Q You do not have the location for it?

A Yes, not the footage location. It would be in the--

Q Do you intend to drill the well right away?

A Yes, sir, it was in our initial budget. It would

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normally be in the Southeast of the Northeast quarter of Section 21, Range 31 East, Township 14 South, Chaves County, New Mexico.

Q That would be known as what?

A It will carry a unit designation probably; when drilled, it will be known as the 9-W-4.

Q The West Cap 9-W-4?

A Yes, sir.

Q That is in the Southeast of the Northeast Quarter of Section 21?

A The Southeast of the Northeast of Section 21.

Q You don't have a footage location?

A No, sir, we have not staked the well.

MR. PORTER: Mr. Utz, it's indicated on one of the exhibits.

EXAMINER UTZ: We need a pair of glasses to see and understand these locations.

A Yes, sir.

EXAMINER UTZ: Are there other questions of the witness?

Q (by Examiner Utz) All injection wells will have water injection underneath the packer?

A That is our plan, yes, sir.

Q And the water injected is fresh water?

A Yes, sir.

Q So it will be regular tubing?

A We may elect to line our tubing.





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EXAMINER UTZ: Are there other questions of the witness?

The witness may be excused.

Are there other statements in this case?

MR. DURRETT: I would like to ask a question of Mr. Kellahin, if I may do so.

Mr. Kellahin, would you desire to move the Commission to consolidate this case, 2643, with Case 2642 for consideration?

MR. KELLAHIN: Yes, sir. Thank you, Mr. Durrett. I do so move. These were brought on a single application and the exhibits filed pertain to both cases and for the matter of the record, I move the two be combined and the matters contained in both applications be considered together under the same case.

MR. PORTER: Under one order?

MR. KELLAHIN: At the convenience of the Commission, for the purposes of considering the exhibits, we would move to combine the two applications.

MR. DURRETT: I have one other statement for the record, Mr. Chairman. The telegrams that I read previously in 2642 from the Gulf Oil Corporation and Cities Service Petroleum Company also stated they have no objections to the granting of this application.

EXAMINER UTZ: Are there other statements in this case?

The case will be taken under advisement.

\* \* \*



STATE OF NEW MEXICO )  
 ) ss.  
 COUNTY OF BERNALILLO)

I, MICHAEL RICE, NOTARY PUBLIC in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached transcript of proceedings was reported by me in stenotype and that the same was reduced to typewritten transcript under my personal supervision and contains a true and correct record of said proceedings, to the best of my knowledge, skill and ability.

*Michael Rice*  
 NOTARY PUBLIC

My Commission Expires:

*May 11, 1966*

I do hereby certify that the foregoing is a complete record of the proceedings in the Examination of June 11, 1962, 264202643 heard by me at *Sept. 27* 1962.

*Thurston*, Examiner  
 New Mexico Oil Conservation Commission

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