

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
November 23, 1965

EXAMINER HEARING

IN THE MATTER OF:)

Application of Sinclair Oil & Gas Company)
for a waterflood project, Lea County, New)
Mexico. Applicant, in the above-styled)
cause, seeks authority to institute a)
waterflood project in the Maljamar Pool by)
the injection of water into the Grayburg-)
San Andres formations through eight wells)
in Section 24, Township 17 South, Range)
32 East, Lea County, New Mexico.)
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Case No. 3346

BEFORE: Daniel S. Nutter, Examiner.

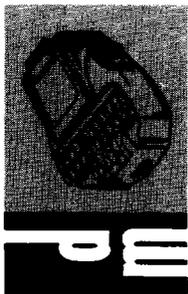
TRANSCRIPT OF HEARING

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MR. WHITE: If the Examiner please. Charles White appearing on behalf of the Applicant. We have one witness, Mr. Anderson, to be sworn.

(Witness sworn.)

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

MR. DURRETT: Case 3346. Application of Sinclair Oil and Gas Company for a waterflood project, Lea County, New Mexico.

R. M. A N D E R S O N, a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. WHITE:

Q Mr. Anderson, will you please state your full name for the record?

A R. M. Anderson.

Q And by whom are you employed and in what capacity, Mr. Anderson?

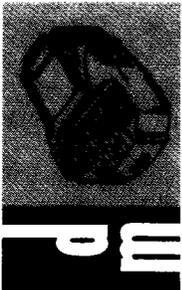
A Sinclair Oil and Gas Company; Senior Petroleum Engineer.

Q Have you previously testified before the New Mexico Oil Conversation Commission or its Examiners?

A Yes, I have.

Q What does Sinclair seek by the application?

A Sinclair seeks approval of a waterflood project for



its Johns "A" 24 lease located in Section 24 in Township 17 South, Range 32 East.

Q Will you refer to Exhibit 1 and explain the exhibit, please?

A Exhibit 1 is an exhibit of an area ownership map of the ownership within a two-mile radius of the lease. I also caused to be added to the exhibit the present waterflood pattern that is being used by other operators in the area of the Sinclair lease. The subject lease of this application are colored dark in the center of the exhibit. The "B" lease is the north 480. The "A" lease is the south 160 acres. There are 16 wells on the lease. We propose an 80-acre five spot pattern in conformance with the pattern established by the operators to the north and east of these Sinclair leases.

Q Does it also show the proposed injection wells?

A The proposed injection wells are circled and connected with dash lines.

Q I now refer to Exhibit 2 and ask you to explain that exhibit, please?

A Exhibit 2 is a west-east cross section through the northern portion of the "B" lease as shown by the index map on the end of the cross section. Logs of all of the wells across the north section of the lease are shown as well as the Pennzoil "B" Well Number 12 on the east end of the cross section. The



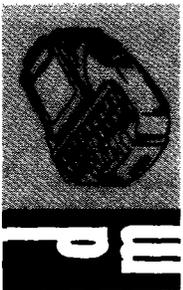
perforated intervals are shown on each well log. In this respect we propose to open additional pay zones in many of the wells during the development of this flooding. It can be seen from the Pennzoil Phillips "B" 12 well that there are several zones up the hole from those zones which we correlated across the Sinclair properties as well as a zone down the hole and eventually as we develop this flood we will open those zones.

Q Would you now similarly explain Exhibit Number 3?

A The north-south cross section extended from the Murphy Baxter Well Number 5 on the north down through four of the Sinclair wells. This exhibit similarly has the completion intervals indicated thereon and again we plan to open some additional porosity development zones in these wells as the flood progresses.

Q Would you explain the diagrammatic sketch?

A Exhibit 4 is a diagrammatic sketch which was submitted with our application; a copy furnished the State Engineer's office. The completion intervals are shown on the schematic sketch, the location of the various casings that are set, the amount of cement used and the top of cement in each case as best we know it. I have also shown dashed the packers that we propose to run in the injection wells and we will fill the annulus with a corrosion inhibited fluid above the packer. We will open in all of the wells that are perforated. We will



open additional perforations above the perforations shown and below the packer. In that interval there will be some additional perforations. Some of these have shown that interval to be rather short but it is not to scale. There is plenty of room for additional perforations between the uppermost perforation and the packer. We propose to drill out and remove the two bridge plugs that are shown on the two center wells: Numbers 4 and 5.

Q What will be your source of water supply?

A We will purchase water from the Yucca Water Company; fresh water.

Q And what do you anticipate to be your initial water injection?

A Initially we anticipate that we will inject 600 barrels per well per day at a surface pressure of between 2,500 to 3,000 pounds.

Q Have you submitted this application to the State Engineer?

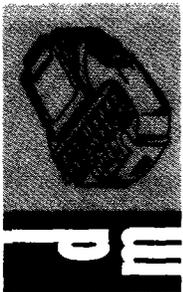
A Yes, we have.

Q Has he approved the project?

A Yes, he has.

Q Will you refer to Exhibit 5, the production history curve and future production?

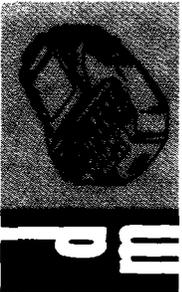
A Exhibit 5 is the production history for the last five



and a half years and it reflects the decline that these two leases, combined, have experienced. In 1964 production was increased and has leveled off to around 3,000 barrels per month as a result of installing seven pumping units and as a result of one of the wells receiving a small response from the offsetting Pennzoil waterflood. I predicted the secondary production with a dashed line and I have calculated that if the Statewide secondary recovery waterflood allowable were used that we would not exceed the allowable granted by that Rule which would be in the neighborhood of some 20,000 barrels per month and we will take, according to the graph, somewhat less than that. I might state while we are talking about the production history curve that we have produced to May 1, 1965; 840,000 barrels of oil from this section and we estimate that the remaining primary reserve is about 82,000 barrels, making a total ultimate recovery of 922,000 barrels. We feel that we will receive, in addition to this primary recovery, another 922,000 barrels of secondary oil as a result of this secondary recovery project.

Q Are any of your wells making top allowable at the present?

A No. September's production was 101 barrels of oil per day for 16 wells which calculates as an average of 6.3 barrels per well per day. No well is anywhere near top allowable.



Q Do you intend to work this project in cooperation with any other waterflood programs within the area?

A Yes. Exhibit 1 reflects the other waterflooding projects in effect at this time and we see offsetting the Sinclair lease to the east Pennzoil has wells number 12 and 15 on injection. Offsetting this lease to the north Murphy Baxter has well number 6. He also has a well number 4 north of well 6 and west of well 6 and I don't know whose well 7 and 9 are but it is proposed that those two wells be converted at such a time that Sinclair flood gets under operation as they anticipate that they will be converted to water injection also.

Q In regard to your secondary recovery allowables, do you desire a single project allowable for both leases?

A Yes. We would like both leases to be treated as a single project with ability to transfer to produce the secondary oil from whichever wells it is found in.

Q Is there anything further that you care to add to your testimony?

A Only that the ownership is identical in leases on the "A" and "B" leases and I have discussed this matter with John Anderson in Roswell and he advises that as royalty owner they would be very satisfied with a single project allowable and with us having the flexibility asked for here today.

Q Does that conclude your testimony?



A I believe so.

MR. WHITE: At this time we offer Exhibits 1 through 5.

MR. NUTTER: Sinclair's Exhibits 1 through 5 will be admitted into evidence.

(Whereupon, Applicant's Exhibits 1 through 5 were offered and admitted into evidence.)

MR. WHITE: And that concludes our presentation.

CROSS EXAMINATION

BY MR. PORTER:

Q Mr. Anderson, were these wells ever a part of the Maljamar pressuring project?

A No, sir. A part of our "A" lease as shown on Exhibit 1 is in that Maljamar repressuring project, that is the east half of the northeast quarter of Section 26, a diagonal offset. That lease is in the project but this lease is not now nor never has been in the Maljamar unit.

BY MR. NUTTER:

Q Is that little hashed line that's wandering around through this area the Maljamar repressuring project?

A Yes, operated by Continental.

Q So this is just adjacent to it but outside?

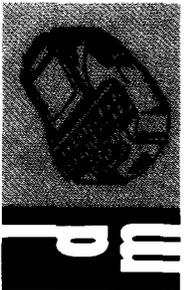
A Yes.

BY MR. PORTER:

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Q So you would say that all the recovery that you have had there so far is strictly primary without benefit of any repressuring?

A Yes, sir.

MR. PORTER: That's all I have.

BY MR. NUTTER:

Q Now with reference, Mr. Anderson, to the Johns "A" and the John's "B" lease. You are referring to the Johns "A" lease in the south half of the south half of 24, not that section over there in 26, right?

A Yes, sir. That portion in 26 is no longer under the operation of Sinclair. It is operated by Continental.

Q So your allowable would be confined here to Section 24?

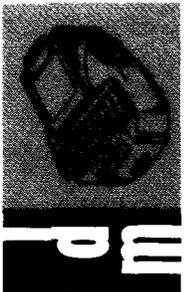
A Yes.

Q In your project also?

A Yes.

Q Now, did you intend to have any kind of coating on this tubing that's going to be in the injection wells?

A No, sir. We intend to treat the water with chlorine for bacteria and to deaerate it and we found from injecting the same kind of water in other parts of this area that it is not necessary to coat the tubing and we are not planning on coating it the tubing.



Q But the annulus will be filled with a corrosion inhibited fluid?

A Yes.

Q And there will be a packer in each well?

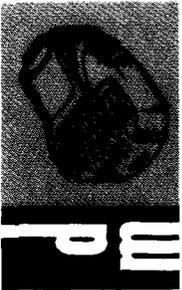
A Yes.

Q Now, do you propose to reinject the water at a later date?

A The study of the Pennzoil flood and the other operators, Murphy Baxter operators, shown on this Exhibit 1 of ours reflects that they are as yet producing very little water and for that we have not planned to initially fool with produced water because we anticipate it will be in very small quantities. A little later we do anticipate that we will have to reinject it and only after specially treating it making sure that it's of it compatibility and that we will be able to use it. So, we would just as soon not use it initially if we do start producing small amounts of it. At present we are producing only 24 barrels of water a month from this lease.

Q These other projects to the northeast so far the water cuts haven't got so sizeable that they are injecting the produced water?

A As of a recent check with them a month or two ago we made our study, they as yet had not been producing any water to speak of.



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MR. NUTTER: I see. Are there any further questions of Mr. Anderson? You may be excused.

Do you have anything further, Mr. White?

MR. WHITE: No, sir.

MR. NUTTER: Does anyone have anything further they wish to offer in Case 3346?

We will take the case under advisement.

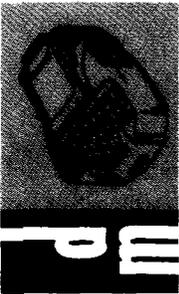
MR. DURRETT: I would like to state for the record: The Commission has received a letter from Frank Irby of the State Engineer's office stating that his office has no objection to the granting of the application provided that the well construction and equipment can conform to the application and the casing tubing in the wells is filled with a corrosion inhibited fluid.

MR. NUTTER: Thank you. Is there anything further in Case 3346?

We will take the case under advisement.

The hearing is adjourned.

(Whereupon, the Hearing was adjourned at 3:15 o'clock P.M.)



I N D E X

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E X H I B I T S

<u>Exhibit</u>	<u>Marked for Identification</u>	<u>Offered</u>	<u>Admitted</u>
App's. 1	2	8	8
App's. 2	2	8	8
App's. 3	2	8	8
App's. 4	2	8	8
App's. 5	2	8	8



