BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
December 6, 1962

EXAMINER HEARING

IN THE MATTER OF:

Application of Cima Capitan Incorporated for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to inject water into the Grayburg-San Andres formations through seven wells located in Section 17, Township 18 South, Range 28 East, Artesia Pool, Eddy County, New Mexico. CASE 2712

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: Call Case 2712.

MR. DURRETT: Application of Cima Capitan Incorporated for a waterflood project, Eddy County, New Mexico.

MR. LOSEE: A. J. Losee, appearing for the Applicant, and I have one witness, Mr. Hal C. Porter.

(Witness sworn.)

(Whereupon, Applicant's Exhibits 1 through 8 inclusive marked for identification.)

MR. LOSEE: Mr. Examiner, I had a little difficulty acquiring the correct legal name to my client. I would like to show for the record that the correct name is Cima Capitan, Inc. or Incorporated.

MR. NUTTER: Yes, sir. We have correspondence correcting

that in our file.

HAL C. PORTER

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

DIRECT EXAMINATION

BY MR. LOSEE:

Q State your name, please.

A Hal C. Porter.

Q Where do you live, Mr. Porter?

A Artesia.

Q What is your occupation?

A Petroleum Engineer.

MR. LOSEE: Are Mr. Porter's qualifications as an expert acceptable?

MR. NUTTER: Yes, sir, they are.

Q (By Mr. Losee) Please refer to what has been marked Exhibit 1 and state what it reflects.

A Exhibit 1 is an area plat showing the leases involved in the application, these being the South Half of the Southeast Quarter, and the Northwest Quarter of the Southeast Quarter, and the Northeast Quarter of the Southwest Quarter of Section 17, Township 18 South, Range 28 East, Eddy County, in the Artesia Pool. It shows the wells and the leases in an area of one mile around the area of the application.

Q These leases are in what is known as the Artesia Pool,

are they not?

A Yes, sir.

Q Is Cima Capitan, Inc. the operator of these leases?

A Yes, sir. Let me say that they have operating agreements which are presently being negotiated.

Q To cover both of these two leases?

A Yes, sir. That's true.

Q Have you made a study of the production history on these two leases?

A Yes, sir, I have.

Q Please refer to Exhibit 2 and state what it portrays.

A Exhibit 2 is a plat showing again the two leases, the Welch State and the Adkins Williams leases, and the wells which are being applied for for injection wells are shown circled in black.

Q Now your project area is outlined in yellow, is it not?

A The yellow outline shows the outline of the two leases, yes, sir.

Q Does this plat also show the location of the plugged and abandoned wells?

A Yes, sir, it does.

Q For the record, would you state which wells in the leases have been plugged and abandoned?

A The wells shown on the plat with the cross are the ones that have been plugged and abandoned. The Wells No. 3 and

7 have been plugged and abandoned on Welch State; and on the Adkins, the Well No. 1 is plugged and abandoned. Also, Mr. Losee, Wells No. 2 and 2-X, which you can see are drilled on nearly the same location very close to each other, the reason that 2-X is drilled is because No. 2 penetrated only the upper zone and No. 2-X is completed into the deeper zones.

Q I notice on the Adkins Williams lease that Wells 7, 8, 9, and 10 are proposed locations. What are the company's plans with respect to those locations?

A The 40-acre tract on which these wells are located has never been drilled, and Wells No. 7 and 10 are included in the application for injection wells when they are drilled. Nos. 8 and 9 will be producers.

Q Please refer to Exhibit 3-A and state what it portrays.

A Exhibit 3-A is a tabulation of the production history from the Adkins Williams lease. This lease has produced on the order of 170,000 barrels. You can see there are some years where there was no record of the production data. You can't be exactly sure what it has produced, but extrapolating the curve, it's on the order of that. The production for 1962, the first nine months was 1706 barrels; and bringing that out on barrels per day per well basis, the well is presently producing approximately one and a half barrels per well per day.

Q You mean the wells on this lease are averaging that?

A Yes.

Q I notice in 1961 the production went up some for that year, 3580 barrels as to what it had been for the previous years. Was that because the 2-X Well was drilled in that area during that year?

A Yes, sir.

Q Has that well now fallen off?

A Yes, it has. No well in there is making an appreciable amount of production.

Q Refer to Exhibit 3-B.

A Exhibit 3-B is a tabulation of the oil production from the Welch State lease, and this lease has produced on the order of 160,000 barrels of oil. Again there's some years we had no record. The lease in 1962, the first nine months, averaged one and a quarter barrels per well per day.

Q Now as to either of these leases, either the Adkins-Williams or the Welch State lease, are there any wells to your knowledge on either lease producing over an average of three barrels a day?

A No, sir, they are all down to stripper stage.

Q There are four producing wells on the Adkins and five on the Welch State lease, from your Exhibit 2. In your opinion, have all of these wells reached an advanced or stripper state of depletion?

A Yes, sir.

Q Based upon your study of the production history of

these leases and the data that is presented here to the Examiner, have you reached an opinion as to the amount of oil that would be recovered by the proposed waterflood project? If so, what is that volume or ratio?

A Well, sir, we have produced on these leases approximately 330,000 barrels of primary oil. By drawing an analogy between this and other waterfloods in the area, we should produce on the order of approximately 400,000 barrels of oil.

Q What was that figure again?

A 400,000 barrels of oil.

Q This is not set up as a pilot project. Are there any other floods in the immediate area flooding the same zones?

A Yes, sir. The original Graridge waterflood, which is in Section 21, is less than a mile from this area, from the project, and this flood is being conducted in the same pay zones that the floods we propose.

Q Is that flood of Graridge being successfully operated?

A Yes, sir, it is. The last figures I had, the original lease that was put under flood had recovered more than one times primary.

Q In your opinion, then, these two leases, would they be floodable?

A Yes, sir.

Q Please refer to Exhibit 4 and state what that portrays.

A Exhibit 4 is a graph showing the oil production from



the two leases plotted in barrels per year. There are some years there, of course, you can see we don't have any records. You'll notice that in 1951 and '52, the production increased. This was due to deepening. The wells were originally completed in what is known as the old field pay or the first Grayburg, and during this period some of the wells were deepened down to the Lovington sand and you can see the production did increase, and then it started dropping off again. In 1962, it's plotted in barrels per month instead of barrels per year; it's barrels per month. It's indicated there that the 1962 average for all the wells was 1.7 barrels per well per day. It indicates that the wells are depleted and are nearing their economic limit.

Q Please refer to Exhibit 5-A and state what it purports to portray.

A Exhibit 5-A is a presentation of the well data showing the completion date, elevation, location, casings, T.D., treatments, and remarks concerning these wells.

Q On this exhibit I noticed dates of, completed dates of June 25th with the year not shown. Were those completed back in 1925?

A Yes, sir, they were. These were some of the earlier wells that were drilled in the area, and these wells were drilled in 1925, 1926.

Q In your left-hand column on this exhibit, you have an "I" and "P". Does that indicate injection and producing wells

proposed?

A Yes, sir.

Q With reference to the injection wells, the casing, surface casing, is that cemented or has it been set, or do you have any records?

A The records that we have, of course, are very, very old. It does not state that this casing was cemented, and I doubt very seriously if it was.

Q Please refer to 5-B.

A Exhibit 5-B is the same as 5-A, except it covers the Adkins-Williams lease.

Q Are there any type logs available on the wells on either of these two leases?

A No, sir. There are no electric logs at all, of any kind. There are some old driller's logs which are very, very general and give no information whatsoever. We do, however, have this Exhibit 5-C which is an offset, a log on an offset well. This well is the Allison No. 1, which is located in the Southeast of the Southwest in the same section, and the purpose of this exhibit is to show the zones which we propose to waterflood; these being the first zone in the Grayburg or the old field pay, as it's called down in Eddy County, at roughly 2,000 feet. This is the same zone that's being flooded by Graridge. Also open in all the wells and to be included in the flood are the Metex zones, which occur on this log between 2,050 and 2,110; the

Premier, which on these logs, the production occurs at 2200; top of the San Andres, which is at 2256; and the Lovington pay, which is, the top of it is at 2400.

Q Are these the intervals that are open to production in the producing wells on the Welch and the Adkins leases?

A Yes, sir.

Q Is it proposed that these same intervals will be open to water in the injection wells?

A Yes, sir, that's right.

Q There will be no exception on any of those injection wells as to these intervals being open?

A No, sir, not so far as everything except possibly the Lovington sand. It's very questionable floodability. I don't think it produced a whole lot primarily, and the chances are it won't produce much secondary. As far as the other pays are concerned, we intend to flood them.

Q What is the source of water for this proposed flood?

A There's no available water on the project as far as shallow surface water sufficient to cover the needs of the waterflood. The Caprock Water Company has a pipeline approximately one-half mile from this area, and they have agreed to sell water for the project.

Q Is that reflected by this letter which has been marked Exhibit 6?

A Yes, sir.

Q Please refer to your Exhibit 7. Explain the proposed casing program for the injection wells.

A The injection wells, we propose to clean them out to bottom and pull the long string which is not cemented, apparently is not cemented, and then run a string of 4-1/2 casing all the way to bottom and circulate the cement to the surface and perforate the pay intervals; and Exhibit 7 is a schematic showing how we would like to complete our injection wells.

Q So that actually your production string would be cemented from the top to the bottom?

A Yes, sir.

Q Would that be true on all of your injection wells?

A It would be true on all the old wells that are converted. Now we would like, of course, to retain the privilege of setting sufficient amount of surface pipe and not cementing our long string all the way back to the surface on the new wells that have been drilled.

Q Would you cement your surface casing on those two proposed injection wells?

A Yes.

Q How far above the shallowest perforation would your cement be circulated?

A Well, the chances are we would use enough to give us at least 200 feet above the perforations.

Q And you would like permission as to those two new wells

to complete them in that fashion?

A Yes, if we so elect, or to use this method here, circulate to the surface. But there's no reason why, if we were to drill the new wells, that we couldn't go ahead and complete them in a conventional manner. The reason we have suggested going ahead and circulating -- the surface pipe, the chances are, have not been cemented because they were drilled in 1925, and I doubt very seriously if they had any cement.

Q Is there any substantial amount of water present in this area within your knowledge?

A There's no substantial amount. I know Graridge did some extensive drilling, trying to find water to waterflood with, and they couldn't do it in this area.

Q Do you feel like this type of completion for your injection wells would satisfactorily protect any fresh water that might be found in the area?

A Yes, sir, I do.

Q Have you contacted the State Engineer's office with respect to this proposed casing program for the injection wells?

A Yes, sir, I did. I wrote to the State Engineer, Mr. Irby, the Water Rights Division, and explained our proposed casing program to him, and Exhibit 8 is a copy of that letter. Also his letter back to me is attached.

Q At what initial pressure and rate do you propose to inject water?

A Our maximum pressure will probably be on the order of 1,050 pounds, from experience that Graridge has had. The initial rate will probably be on the order of four or five hundred barrels a day.

Q Do you request the Commission to authorize this project with an allowable provided for under Rule 701?

A Yes.

Q Under that rule, the allowable, by reason of the 10-acre spacing on these two leases, would permit you to have a 42-barrel allowable plus one-third of that for each additional well on a proration unit, on a 40-acre tract?

A Yes, sir. That's the way Rule 701 is written.

Q In your opinion, is this proposed waterflood project in the interest of conservation, and will it recover oil by secondary methods which could not otherwise be recovered?

A Yes, sir.

Q Were these exhibits, except the letters, prepared by you or under your supervision?

A Yes,sir.

MR. LOSEE: I move the introduction of Exhibits 1 through 8.

MR. NUTTER: Applicant's Exhibits 1 through 8 will be admitted in evidence.

(Whereupon, Applicant's Exhibits Nos. 1 through 8 admitted in evidence.)



A Referring to Exhibit 8 again, Mr. Irby's letter to me, he asked for certain things. He says, "However, I would appreciate very much you informing me as to whether the construction program will be the same on each of the injection wells and the approximate depth of the salt in each case."

I wrote back to him on December 3rd, saying: "Regarding the waterflood application of Cima Capitan, Incorporated, and your letter of November 28, 1962, our intended injection well completion will be the same in each case; i.e., with 4-1/2 casing cemented to the surface.From our best available information the top of the salt in this area is about 450 feet below the ground."

MR. NUTTER: 450 feet where?

A Below the surface of the ground.

MR. IRBY: Thank you. That's all.

BY MR. NUTTER:

Q Will the pipe be new pipe that's run in these old wells, the 4-1/2?

A Well, it will be very good quality. Now we might want to use, possibly use some second-hand pipe, but chances are we won't.

Q You are going to set this through the pay, possibly down to the top of the Lovington, is that it?

A Yes, sir.

Q And then perforate your flood intervals?

A Right.