Case No.

2354

Application

Transcripts.

Small Exhibits

ETC

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
7 October 1981

EXAMINER HEARING

IN THE MATTER OF:

Application of Corona Oil Company for a pilot steam-enhanced oil recovery project, Guadalupe County, New Mexico. CASE 7354

BEFORE: Daniel S. Nutter

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division:	W. Perry Pearce, Esq. Legal Counsel to the Division State Land Office Bldg. Santa Fe, New Mexico 87501
For the Applicant:	Randolph M. Richardson, Esq. Roswell, New Mexico

I N D E X

E X H I B I T S

MR. NUTTER: We'll move on to Case 7354.

MR. PEARCE: Application of Corona Oil Company for a pilot steam-enhanced oil recovery project, Guadalupe County, New Mexico.

MR. RICHARDSON: Randolph M. Richardson, Roswell, New Mexico, appearing on behalf of the applicant.

And I have two witnesses to be sworn.

(Witnesses sworn.)

MR. RICHARDSON: I'd like to call Mr. George Scott first.

And on the record and before actually qualifying Mr. Scott, I'd like to point out that the original application for this pilot was made under the name of Public Lands Exploration, and they gone through a name change and it is now Corona Oil Company, and they have been qualified to do business in the State of New Mexico, and do have a statutory agent.

So some of the exhibits may show Public Lands and some may show Corona, but it is exactly the same company with merely a name change.

MR. NUTTER: Well now, Mr. Richardson, the previously approved steam project was issued under the

name of Public Lands. That will also be changed to Corona?

MR. RICHARDSON: Corona.

MR. NUTTER: So the company itself is just changing its name. It's still the same company.

MR. RICHARDSON: That's right, uh-huh.

MR. NUTTER: As a matter of observation, I think that we don't have a bond yet for Corona, so we will need a bond before we can approve any changes, and also we would have to have names changes filed for the old Public Lands wells.

I think the drilling permits for these wells may have been filed in the name of Public Lands, also.

MR. RICHARDSON: Well, may I ask Mr. Williams, do you know anything about the bond?

MR. WILLIAMS: Yes. I handled that. The bond is with Kemper Insurance Company and they have moved their headquarters to -- back to Kansas and they're in the process of changing the name.

Now I checked about four days ago and it still hadn't come through.

MR. NUTTER: You have requested it.

MR. WILLIAMS: Yes, that's been requested over six weeks ago.

MR. NUTTER: I see.

MR. WILLIAMS: I talked to Mr. Padilla just before he left and he informed me that we'd have to get this through and we'd have to have the president of Corona Oil Company also verify this.

MR. NUTTER: Okay.

MR. RICHARDSON: I just wanted to make a statement about the name change and have handed the Examiner, Mr. Nutter, eight different exhibits and Mr. Scott will be testifying on a portion of the exhibits and Mr. Joy will be testifying to a portion of the exhibits.

GEORGE L. SCOTT, JR.

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. RICHARDSON:

Q. And Mr. Scott, would you please state your name, address, present occupation?

A. My name is George L. Scott, Junior. I am a consulting geologist, located in Roswell, New Mexico.

Q. And you have testified several times before the Oil Conservation Division in the past?

A. Yes.

Q And --

MR. RICHARDSON: Do I need to go into them? Are they acceptable?

MR. NUTTER: Mr. Scott is qualified, yes, sir.

MR. RICHARDSON: You've examined him before.

Q Mr. Scott, would you please tell the Division the township, section, range of the proposed pilot steam injection program?

A Yes. This proposed pilot steam operation, flood operation, is located in Section 17 of Township 11 North, Range 26 East, in Guadalupe County, New Mexico.

Within the section the pilot will be located in the northeast quarter of the northwest quarter. And this location is shown on Exhibit Number One, a topographic map.

Q Exhibit Number One there is a topo map showing the pilot, location of the pilot project, which is 40 acres.

Would you like to add anything additional as to your topo map, Exhibit One?

A Yes, I would. This map could be useful to anyone that wanted to go to the area. It has the -- shows

the access road coming down from the northwest to the pilot area. There's a notation in the upper lefthand corner as to the New Mexico Highway 129, which is a short distance to the west of the map area. Other prominant terrain features are Mesa Rica in the northeast corner of the topo map.

Q Mr. Scott, would you refer to Exhibit Number Two, which is a base map, showing wells that have been drilled within the immediate area?

A Yes. The purpose of this base map is to -- is to show the wells that have been drilled within a distance of two miles of the proposed pilot.

The proposed pilot is shown, well, is in the northeast quarter of the northwest quarter of Section 17. This shows that there are two wells in that area right now, the No. 1 and 2 Jeanne. These Late wells have been previously drilled and cased and are ready to become a part of the pilot steam operation.

There are two other wells nearby that have also been drilled by Corona and casing run to TD, and these -- these two wells are the No. 1 Karen State in Section 8 and the No. 1 Barbara in Section 17, south half of 17 there. These two wells could be utilized at some future date in production, possibly.

Other wells on the map are stratigraphic

tests drilled by Exxon and those well symbols are explained down on the information block.

Also shown on the map are dry holes, wells that have been drilled and plugged, by Corona or Public Lands Exploration, and one wildcat drilled by Hankins over in Section 15. I believe all of the other wells shown on this map were either the Humble or Exxon stratigraphic tests or wells drilled by Corona.

Let me back up, that's not correct.

There -- in Section 18 there is a well drilled by Wilbanks, the No. 2 T-4 Cattle Company, and also in the northwest quarter of 17 there is a well drilled by Wilbanks, the No. 1 T-4.

Q Mr. Scott, would you in addition to your base map showing all the wells that have been drilled in the immediate area, would you refer to Exhibit Three, and would you tell the Division what Exhibit Three portrays?

A All right. Exhibit Three is a larger scale map of a portion of the area in which -- on which I've contoured on top of the O'Connell sand, a little bit of the Santa Rosa formation.

It is the O'Connell sand that is carrying the -- the heavy oil in the area. The contour interval on this map is 20 feet. It simply shows a segment of the east-

ward trending Newkirk anticline;in the vicinity of the pilot we've got possibly as much as 20 feet of closure.

The -- now on this map the wells that are in the proposed pilot are shown, together with the injection well. The wells are the -- that will be producing wells in the pilot are the 1, 3, 4, and 6 Jeanne. The injection well will be the No. 5 Jeanne, and the No. 7 Jeanne will be our water supply well.

If you'll refer back to the previous map you will see that the No. 7 Jeanne is the same as the Exxon No. 6-12-17 stratigraphic test, and this well is to be re-entered and recompleted as a water supply well.

And Mr. Joy, who will follow, will cover the discussion of mechanics of re-entering that well.

Q. Mr. Scott, how was your geological structure map contoured? It's contoured on top of the O'Connell sand, and the information for the map was obtained from what sources?

A. Okay, primarily as a result of our coring, and -- and logs, but primarily we drilled into the -- to near the top of this sand and go in with a core barrel and cut cores. Our data and our evaluation of the area is based upon cores and core analysis, primarily.

Q. Mr. Scott, on our last case, No. 7048,

Conservation Division Order No. 6504, the Conservation Division approved a pilot steam injection program, located some four to five miles west of this proposed pilot program. Is there a geological reason for having a second pilot project that near the first pilot project?

A. Yes.

Q. Would you explain the reasons?

A. Yes, there sure is. In the first place, it appears from our work that there is no direct connection between the two areas. They are the same sand zone. Apparently this O'Connell sand, the O'Connell member of the Santa Rosa formation, deposited as a result of meandering stream channeling environment, and it's not unusual for segments of those type of reservoirs to be cut off and isolated from each other, one another, and we think that this is the case, and that we're actually in a separate segment of the same general reservoir.

Also, it's deeper over here. It's approximately 350 - 400 feet deeper, greater overburden, and there's a likelihood that to be successful, a steam injection program would have to have higher pressures, and this could be an advantageous thing.

Q. Could you tell the Division, please, the approximate depths, top and bottom of thicknesses of the

O'Connell member of the Santa Rosa?

A. Yes. The --

Q. The reason I ask that, Mr. Scott, was you mentioned that this pilot is somewhat deeper than the first, so I do need to get in the depths for this proposed pilot.

A. All right. We estimate in the pilot area the producing sand which we have encountered at a depth of approximately 709 to 760 feet.

Q. And it is approximately how thick?

A. The gross pay interval would be approximately 50 to 55 feet thick.

Q. In other words, this particular area is both deeper and is isolated from the initial pilot.

A. That is correct.

Q. By the time both pilots are in complete operation you will have a better idea as to other areas that you could obtain oil known to be in place.

And there is oil in place in this area.

A. That is correct.

Q. And Mr. Joy will testify as to the engineering aspect of obtaining the oil and Mr. Scott, I think you might also refer to Number Four, Exhibit Number Four, which is a plat showing the location of the pilot on the

particular 40-acre tract, together with the footage locations and I wonder, Mr. Scott, if you could go through and tell the Commission, or the Division, the location of the wells, footage locations from the section lines and which wells have been drilled and which ones are proposed to be drilled, and the location of your injection well?

A All right. This -- this plat is on a still larger scale, a scale of one inch equal 200 feet, and shows the -- primarily here the northeast quarter of the northeast quarter -- excuse me, northeast quarter of the northwest quarter of Section 17.

The wells that presently exist are the No. 1 and 3 Jeanne. They have been drilled and cased, and are awaiting perforation and inclusion in the project.

Q Could you --

A Also --

Q -- give a footage location for the No. 1 and then the No. 2?

A Yes. All right. The No. 1 Jeanne was located 800 feet from the north line and 1900 -- 1980 feet from the west line.

The No. 3 Jeanne was 800 feet from the north and 2310 feet from the west line.

We are proposing that the No. 4, 5, and

6 will be drilled. The 4 and the 6 would be producing wells, so indicated here by the appropriate symbol on the map.

The No. 5 would be the injection well.

The No. 4 would be located 463 feet from the north line and 2145 feet from the west line.

The No. 5, the injection well, would be located 800 feet from north and 2145 feet from the west.

The No. 6 would be located 965 feet from north and 2145 feet from the west line.

We would also utilize the -- the old Humble 6-12-17, stratigraphic test, as a water supply well, and that well is located 660 feet from the north and 1980 feet from the west line.

And I believe that covers the description.

Q The No. 7 well, which is the water supply well, was a Humble stratigraphic test drilled, what, several years ago, back in, what, '60?

A. Back -- back in the 1960s,yes.

Q. Mr. Scott, you might also briefly refer to Exhibit Number Five, which is an electric log of the No. 1 Jeanne. I believe Mr. Nutter has a copy. Would you point out the depths and how the log is marked as to the --

A. Yes.

Q. -- recoverable zone?

A. All right. The -- this is a compensated neutron log run through casing and on this log on the 5-inch scale at 708 feet we show the top of the O'Connell sand of the Santa Rosa formation. This -- the top of the O'Connell sand is also the same as the top of the Santa Rosa in this area.

And at a depth of 806 feet you go out of this O'Connell sand into a shale unit that varies from 10 to 50 feet thick that separates the O'Connell sand from the next sand in the Santa Rosa, called the Monsimer sand, locally, and it will be from 30 to 100 feet thick, the Monsimer sand.

That sand is carrying water in the area and will be the objective of our water supply efforts in the former Humble well.

I'd like to point out on this log here that the lower part of the O'Connell sand typically carries water in this area and on the log that would be that segment from 750 -- or 778 to about 806. It is separated from the good porosity above by approximately 20 feet of tight and low permeability sand.

Our reservoir pay extends on this log from 708 down to 759 feet.

Q. Mr. Scott, let me say all the land in this particular quarter section, that is patented fee lands.

There is no State or Federal land involved in this pilot.

A. That is correct.

Q. That is correct, and the base lease on which the pilot will be located is actually in the name of Amoco Production Company.

A. That is correct.

Q. And Corona does have a written farmout contract agreement with Amoco to drill and inject steam.

A. That is correct.

Q. In the event the Commission approves, or Division approves the pilot project, will the institution be in the interest of conservation and protection of correlative rights, and the project will be towards the prevention of waste, economical waste, as well as possibly recovering oil which would not be recovered?

A. Yes.

Q. And the correlative rights of all parties will be protected?

A. Yes, they will.

MR. RICHARDSON: I have nothing further, Mr. Nutter.

CROSS EXAMINATION

BY MR. NUTTER:

Q. Mr. Scott, in looking at your Exhibit Four, I find it hard to figure out the actual distance of No. 4 Well from the north line. Now you say 463 feet from the north line.

MR. JOY: 635 from the north.

MR. NUTTER: 635, not 463, then.

MR. JOY: 635 and 2145. The wells are all located 165 feet from the injection well.

A. Let me see, we may have made an error in the -- right there on that -- excuse me, just one moment, please.

MR. RICHARDSON: That is a drafting mistake.

MR. NUTTER: Okay, so this --

MR. RICHARDSON: It is -- it should be 635 feet from the north.

MR. NUTTER: Okay, the pattern, then, is uniform. It's 165 feet from the injection well to each of the four producers, is that it?

MR. RICHARDSON: That is correct.

MR. NUTTER: So you have a uniform pattern then.

MR. RICHARDSON: Yes, we do.

MR. NUTTER: Okay. Well, that had me

disturbed there.

Q Now, Mr. Joy -- or Mr. Scott, you're putting this project on the north side of this 40/40 closure on Exhibit Number Three. There's a slight slope there. Does the slope in the pay have anything to do with the positioning of the pilot project?

Did you want to get on the side of the hill, so to speak?

A No. That is not a factor in -- in our locating it. You're referring there, now, to the subsurface map?

Q Yes, sir.

A No, the structure is not that critical to us. We're not sure as yet about the structural control on this. Structure is important we know, but there's a number of variables involved in the trapping of this oil and we don't have a firm handle on all of them yet.

But we -- we'd have to say that this local structuring situation is not critical for the location of our pilot.

Q Well now, you mentioned that the O'Connell down here below your pay, starting at about 780 feet, carried water on down to 806. Are there other water sands up above here anywhere?

A. Yes. We drilled these wells with air and it is not uncommon to get small amounts of water while we're drilling with air. It's a -- however, the amount of water is very minor, and in any event, that's cased off and cemented to -- protected by cement to the surface on our wells.

Q. Now is there any ranch, windmills or waterwells in this vicnity?

A. I would have to defer that to Chuck Joy, who will follow. I do not --

MR. RICHARDSON: I think --

A. There's none producing from zones as deep as the O'Connell sand, but there are some shallow windmills.

Q. Well, I was thinking of the shallower ones, any shallower supply zones.

MR. RICHARDSON: I think Mr. Joy will probably cover that, as to the water.

MR. NUTTER: Okay.

A. The -- I do know they have real problems out in this area of getting an adequate supply of stock water in the shallow zones. If you look at the topo map, they've got a number of tanks.

Q. I see tanks there but I don't see any

windmills except up here in Section 6 there is one.

A. Mr. Joy can help you on that, I think.

MR. RICHARDSON: I would like to, if you have no further questions of Mr. Scott, call Mr. Joy.

MR. NUTTER: I think we're through with Mr. Scott for the time being.

We may have some further questions, Mr. Scott.

A. Yes, sir.

MR. NUTTER: In the interim he's excused.

MR. RICHARDSON: All right.

I'd like to now call Mr. Charles Joy.

CHARLES JOY

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. RICHARDSON:

Q. Mr. Joy, will you please state your name and present occupation?

A. Charles Joy, and I'm a consulting engineer, located out of Artesia, New Mexico.

Q. And you have testified several times

before the Oil Conservation Division.

A. Yes, I have.

Q. And I'd say recently?

A. Yes.

Q. And --

MR. RICHARDSON: Are his qualifications acceptable?

MR. NUTTER: They are.

Q. Mr. Joy, would you -- well, you have heard Mr. Scott's testimony as to the geology of the area. Would you please tell the Division some of the engineering, reservoir engineering aspects as to permeabilities, porosities, pressures, water saturation, and other factors which render it impossible to recover the oil in place without some sort of artificial stimulation?

A. Well, core analyses indicate permeabilities range from 100 to 500 millidarcies; porosities from 18 to 22 percent; and a connate water saturation of approximately 12 percent.

Oil analyses indicate oil gravities range from 15 to 17 degrees API and oil viscosity from 29.2 centipoise at 250 degrees Fahrenheit to 6006 centipoise at 70 degrees Fahrenheit.

And core analyses indicate little or no

gas saturation and air drilling operations show no natural water drive and little or no gravity drainage. And these conditions leave the reservoir without a driving mechanism and it is planned to reduce oil viscosity to approximately 27 centipoise and create a driving mechanism by injecting steam.

Q. Mr. Joy, would you advise the Division of the pressure at which you propose to inject this steam?

A. Yes. Approximately 150 barrels of water will be injected per day and will be converted to steam and this will be injected in the O'Connell sand at 465 degrees Fahrenheit and 475 pounds psig.

Q. In the event the pressure is not adequate we would like to reserve the right without a hearing to increase or decrease the pressure to how much, Mr. Joy, would you say?

A. Oh, we might have to later go up to about 510 pounds, around 500.

Q. In the event the Division does approve the pilot, could the order allow that leeway for approval of increasing the pressure?

MR. NUTTER: We may be able to put that in the order, Mr. Richardson. We'll check it.

MR. RICHARDSON: Without the necessity

of another hearing.

MR. NUTTER: We'll check on that.

Q Mr. Joy, refer please, if you would, to Exhibit Number Six, which, for the record, Exhibit Six is a set of the schematic completions diagrams for several different wells, and it is covering all the wells within the immediate area.

Could you go through and very briefly mention the well, the location, and some of them have been drilled, some of them are closed wells, could you tell the Division which ones have been drilled and what your casing program is as to all wells that will be drilled in the pilot area to protect the shallow water?

A Yes. I've drawn schematics of every well within a half mile radius of the pilot area.

And the first I'll look at Exhibit Number Two on the ownership map there, I've set out, and it indicates these wells.

Q That is Exhibit --

A Right. Now, the first one, though, will be on the proposed injection well and this will be our Jeanne No. 5 Well, and if you look at this schematic, I will -- we will run 30 feet of J-55 casing, 10-3/4 inch, 51 pound, and cement with 10 sacks and circulate back to the surface. I

plan on casing through this well and running 850 feet of K-55 casing, 5-1/2 pounds, 17 pounds to the approximate TD of 850 feet, and I have been cementing all these wells with 220 sacks and circulating it back to the surface to protect any fresh water zones.

And if you'll note, we have not perfor -- I will perforate this well from approximately 710 feet to 770 feet. This is just proposed. We'll have to log these wells to find the exact interval we want to open up for steam injection.

And I will run a 700 -- I mean a Baker packer, HB-1 single jet, at 760 feet. Now this is a high temperature packer with an expansion joint built into the packer.

Now, on this inhibited water, it's almost impossible, and originally I plan to try to load back the annulus with inhibited water. The thing is when we start going down with steam we convert this water behind that tubing into steam and we can't hardly contain it, I mean, it puts a lot of pressure on it.

So I'll just have to work this out later. I may want to open that up. We may not be able to contain that water in there.

The next well would be the Jeanne No.

well, and this is a well we've already set casing in and I think -- if you want me to go through each one of these, but I think -- I believe the schematics are self explanatory here. I've shown the TD, the casing I'm going to set, and how much cement I'm going to be using.

MR. RICHARDSON: Would you like to, Mr. Nutter, have him go through each schematic or -- basically, the program on all the wells that have been drilled and will be drilled is to circulate cement from total depth back to the surface.

There is a proposal there for one open hole or --

A. Two. We will have two open hole completions, Mr. Nutter.

MR. NUTTER: I notice that the No. 4 is an open hole.

A. Right.

MR. NUTTER: And No. 6 is an open hole, Mr. Joy.

A. We're doing that for one purpose. We're going to see what kind of results we get and if we can recover a larger percentage of oil because this area is highly laminated and we thought maybe the recoveries from these wells might exceed the wells that are cased through.

MR. NUTTER: Well, in the case of the No. 1 and the No. 3, which are both producing wells, the west and the east producing wells, you've got casing set down to TD at about 840, which would be down below the base of the O'Connell --

A. Right.

MR. NUTTER: -- sand.

A. It will be in the shale --

MR. NUTTER: It will be in the O'Connell.

A. Right, and it's about 10 or 15 feet above the Monsimer.

MR. NUTTER: Right. Okay, then we get over to the Jeanne 4 and Jeanne 6, which are the north and the south offsets to the injection well, and you show your casing set at 724 and 710. Now where is that with respect-- where would you propose to set that with respect to the top of the O'Connell?

A. That would be right in the top of the O'Connell.

MR. NUTTER: Right in the top.

A. I'll drill right to the top of the O'Connell and when we top it, then I'll set my casing.

MR. NUTTER: So that footage that you give there is just tentative.

A. Right.

MR. NUTTER: What it really means is that you're going to set this casing in the top of the O'Connell.

A. Correct.

MR. NUTTER: Okay.

A. Now, --

MR. NUTTER: And then how deep would it be drilled? Would it be drilled through the pay of the O'Connell?

A. No, we'll drill down to where we estimate the bottom of the oil bearing zone is from the two wells that we have already completed in the area.

MR. NUTTER: Okay, in other words, you would drill to where you would anticipate --

A. Getting into that tight area, right there.

MR. NUTTER: Getting into that tight area, which starts at 759 feet on the Jeanne No. 1.

A. Right, that is correct.

MR. NUTTER: And that would be the bottom, so you wouldn't be penetrating this section down here where the water is.

A. No, I will not be penetrating it.

MR. NUTTER: Okay.

MR. RICHARDSON: Do you want him to go each one separately before placing them in evidence?

MR. NUTTER: I don't think he will. If he just generally discusses them and then I'll, if I have any questions on them specifically, I'll ask him, like I just now did.

MR. RICHARDSON: Okay, real fine.

A. Well now, the No. 7, Jeanne No. 7 is going to be our water source well, and I --

Q. Mr. Joy, anticipating -- anticipating the No. 7 well is your water supply, water source well, now what zone, where will that water come from, and how much water do you propose to use?

A. We would be using approximately 150 barrels of water per day, and that may exceed our needs. At this time we plan on converting 150 barrels of water per day to steam.

Q. And that water is coming from the -- what formation?

A. The Monsimer.

Q. Monsimer, which is a localized name and it is a lower member of the Santa Rosa formation.

A. And this will be an open hole completion.

I plan on re-entering that well, in fact, we're in the process of re-entering it at this time, and I will top the Monsimer and set casing in the top of the Monsimer sand and then I'm going to cement that with 75 sacks.

Now if you'll look at this schematic, the top of the O'Connel sand is approximately 700 feet in this well. The calculated top of the cement will bring this back to 600 feet, and I've already talked with Steve Reynolds, the State Engineer. He has authorized the recompletion of this well as a water source well, since it's going to be a water well.

Q. And you'll actually use very little water.

A. Right.

Q. Would you --

A. And that's the reason there's no C-101 in on this. This comes under State Engineer's jurisdiction.

I thought I'd show the Commission I am going to cement this for two purposes. One is to protect the water zone and the other is to restrict any loss of steam due to the proximity of this well to the pilot area.

MR. NUTTER: Now this is an old Humble stratigraphic test, right?

A. Right.

MR. NUTTER: What kind of a casing or whatever is in it right now?

A. Nothing right now. I'm down to about 750 feet at this time.

MR. NUTTER: You're re-entering it now.

A. I'm re-entering it, but there was one plug in this well. No, there was two plugs. There's one at the surface and then we had one that was over this water sand at about 220 feet. They did have a plug over that.

Q. In your opinion, will that zone produce enough water for your steam injection project?

A. Yes, because I have penetrated the Monsimer in the Karen -- in the Barbara No. 1 South, and in the Karen No. 2, located directly east there in Section 17, and we had probably -- it was probably making close to a barrel a minute in those wells.

Q. In other words, you do have sufficient water --

A. Right, water, and I --

Q. -- in the immediate area.

A. In fact, those should average about 14,000 barrels per acre feet. I've run the reserves out on the water there.

Q. Could you please refer to the Exhibits

Numbers Seven and Eight. One of those is the request for a permit for a pit, a lined, sealed pit, for your discharge water from the water softener, and Exhibit Number Eight is a request for permit to the Oil Conservation Division for water produced from the heater-treaters.

Could you please go into more detail as to the lining of the pits and protection of surface water? Surface ground water from discharging in the pits?

A. Right. Due to the future production, and anticipating that we will produce some water in this area and in order to take care of this and to handle it, I have proposed to dig earthen pits and I've made out the OCD's application for this, and if you'll look at this first exhibit, that was in Public Lands Exploration Company, Incorporated's name, and this would be on the Jeanne lease and it will be Unit C, Section 17, 11 North, Range 26 East, and analysis of some of the waters from some of the wells from this -- not in this exact area, but in other areas, indicates that the chlorides content is about 700 parts per million; total solids were not available, but I know they're very low because we were -- I've used water in other areas. And at this time we probably would not produce over about a half a barrel of water per day. We have not -- well, that would be the deal on the waterflood, but we don't have the problem.

And then on the method of hydrocarbon entrapment to be employed, I just put out there in -- they've got header pits, I put an asterisk down below. This is, let's see, this is the water produced from the heater-treater, and I've elected to build a 20x20x6 foot pit and that gives me 400 square feet and from the top of the firewalls down to the bottom of the pit it will be approximately 8 feet, and I will use a polyethylene which has thickness of 6 mils, and it goes in there.

Does manufacturer recommend protection of material from direct sunlight? No.

Is material resistant to hydrocarbons? Yes.

Is material resistant to acid and alkalies? Yes.

Is material resistant to salt? Yes.

Is material resistant to fungus? Yes.

Is material rot resistant? Yes.

Will joints of material be fabricated in the field? No.

And then that will take care of this first pit.

The other pit will be required, because when we want to use softeners out there to convert our water

so we will not plug up our steam generator, and these softeners have to be regenerated approximately every 20,000 gallons, and brine water is used to regenerate these softeners with, and it is approximately 60 gallons is produced.

Consequently, we're going to have to have an area to discharge this brine water in, and I plan to build a similar pit but a little bit larger,30x30x6 feet, and the rest of the information is identical to the other pit, and the -- we're going to use a polyethylene and it will be 6 mils thick.

Now the reason we're not splicing this, I can buy the material large enough to cover the pit without splicing in the field.

Q. You will actually have two pits, then.

A. Right, we will have two pits there. And I've checked this, and this should be ample or sufficient large enough -- the pit should be large enough to take care of -- of the water produced at this time from either source there. The evaporation is approximately 70 - 80 inches per year in New Mexico.

Q. They definitely will be lined.

A. Right, they definitely will be lined.

Q. And I'll ask Mr. Nutter, those permits, which you have, which were given as Exhibits Seven and Eight,

do we need to file a separate one -- application or can the ones that are -- will be introduced in evidence, will that suffice?

MR. NUTTER: No, Separate permits will have to be issued for the pits. These are just exhibits in this hearing. They're not actually applications.

I think Mr. Joy brought some applications in this morning.

A. Well, we'll have to submit these, then, because this is your application that we're using for exhibits. That is the OCD's legal application.

MR. NUTTER: Right. Well, didn't you give some of those to --

A. Well, that was for another area.

MR. NUTTER: Oh, that's for that other area.

A. Well, we'll have to submit new ones then to avoid that.

MR. NUTTER: Well, we'll have some question on this material. 6 mils doesn't meet our specifications in the first place.

A. All right, we can go much higher.

MR. NUTTER: The minimum is 30 mils under our specification.

A. Okay, 30 mils. We'll pick that up, then, Mr. Nutter.

MR. NUTTER: And I've never seen polyethylene yet that didn't have to be protected from sunlight.

A. Okay, well, we've got it covered with dirt out there right now.

MR. NUTTER: Yeah.

A. It's covered with dirt.

MR. NUTTER: And if you don't protect it from sunlight it just will be in shreds in a little while.

A. Okay. We need 30 mil, 30 mil, and now what material do you recommend?

MR. NUTTER: I think Mr. Johnson here can furnish you with a copy of our pit specification booklet.

A. All right.

MR. NUTTER: He probably didn't have a copy.

A. He didn't -- Bill Griffith didn't have one because I went in and talked to him there in Artesia.

MR. NUTTER: If you'll ask Mr. Johnson here before you leave.

A. All right. I'll get it. We'll pick that up, then.

Q. Mr. Joy, I have only one other question.

And that is I see on all the plats that you are not having an observation well. You're having an injection well, water supply well, and then four producers, is that correct?

A. Correct.

Q. And there's no mention of an observation well, so you will not have an observation well in this particular project, is that correct?

A. No. That is correct.

Q. So you will have basically, the producers, your injection well, and the water well, all located on one lease.

A. Right.

Q. Within a very small area. Will the -- Mr. Joy, will the institution of this project be in the interest of conservation and prevention of waste?

A. Yes, it will.

Q. Will correlative rights of all parties be protected?

A. Yes.

MR. RICHARDSON: I have nothing further, Mr. Nutter.

CROSS EXAMINATION

BY MR. NUTTER:

Q. Mr. Joy, I asked Mr. Scott about existing shallow fresh waters in the area and he deferred to you.

Can you tell me what the situation is?

A. Yes, we -- they are not consistent throughout the area. You'll run into them occasionally in individual wells.

We've encountered some around 100 feet down to 250 and those will be coming in on C-105s when I get those submitted.

Q. Do you know the quality of the water?

A. No, we haven't been able to get the quality because I haven't run any analysis and oftentimes we do foam up in order to help get our cuttings out because you're cutting through about 300 feet of shale in this area, and you get a little water, fresh water on there and it balls up and it causes tremendous problems in drilling. Consequently, we have to use a foaming agent, which would contaminate any fresh waters.

Q. Well, now you've been out there a lot. Are there any windmills in the vicinity?

A. No, not in that immediate vicinity.

The closest one is there about four miles up there. It's on the Monsimer right -- where's the topo map?

Q. Is that the one that shows up there in Section 6?

A. Yeah, it's up there in Section 6.

There is another windmill over in, it would be, just a minute, I think there's one up in here somewhere on the west -- it would be in 12 or 7. Wait a minute, that's 12, isn't it? Yeah, 12, Section 12, right there in Section 12.

Q. That would be east of here then.

A. It's west. Go west from 7 up there.

Q. Oh. .

MR. RICHARDSON: The nearest windmill is located how far from the --

A. Well, that's approximately -- yeah, it's on the topo there. If you'll look at your topo there just west of 7. That would be the nearest windmill to this area.

Q. Well, is that a windmill there at that --

A. Right.

Q. -- 4674?

A. Right.

MR. RICHARDSON: That's roughly, what, about a mile?

A. But I've been circulating them about approximately 100 sacks from each well when I cement from TD to surface.

Q. Well, I notice on a number of these pages in Exhibit Number Six, Mr. Joy, for these old wells it doesn't show any plugs at all.

Are those wells that were drilled and you have no knowledge of how they were plugged?

A. Those were all -- these are strat tests. We have no knowledge on them.

The 6-12-17, I put Humble, it's now Exxon. That was a strat.

The 6-14-17 was a strat. All we know is the TD and we picked that up off of a log.

And the 6-33-17, and that was a strat test.

Now the Wilbanks, we do not know how it was plugged but we did find some information that indicated they had 12-1/4 inch casing set at 75 feet.

Q. But on the other strat tests that -- of Humble's that you did enter, you found a surface plug and you found another plug at about 200 feet, I think you said.

A. Are you talking about the whole general area or just the pilot area here?

Q. I'm talking about in the pilot area.

A. In the pilot area that did have one plug down at 220 to 230 feet and we encountered that water when we drilled it out.

Q. Uh-huh.

A. So it covered a water zone down there, and that's the reason --

Q. So at least on one well Humble did plug off the water.

A. Right.

Q. But you don't know whether they did on these others?

A. Not in this area, no. We did not re-enter those wells.

Q. Now, you mentioned that the -- the viscosity of this oil was about 6000 centipoise.

A. Right.

Q. At 70 degrees.

A. Right.

Q. And 27 centipoise at 200 and some degrees?

A. 65, that's correct.

Q. Now what centipoise do you have to lower it to in order to get to flow through the reservoir?

A. Well, we feel like if we can raise it up to this temperature that we'll get it down to about 27 centipoise.

Q. And it ought to flow.

A. Right, then it should move. And then we'll create a drive with the steam.

Now -- but on these steam floods what will happen, the top part is going to be a steam drive, the bottom is going to be a hot water drive.

Q. That's right.

A. As the water condenses out and moving out through the reservoir.

MR. NUTTER: Are there any other questions of Mr. Joy?

He may be excused.

Did you have anything further?

MR. RICHARDSON: I have nothing further.

MR. NUTTER: You want to present your exhibits, I presume.

MR. RICHARDSON: Yes, I would like to offer Exhibits One through Eight into --

MR. NUTTER: Exhibit One through Eight will be admitted into evidence.

And you have nothing further?

MR. RICHARDSON: I have nothing further.

MR. NUTTER: Does anyone have anything they wish to offer in Case Number 7354?

We'll take the case under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd C.S.R.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 7354, heard by me on 10/7 19 81.

Oil Conservation Division, Examiner

SALLY W. BOYD, C.S.R.
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STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
7 October 1981

EXAMINER HEARING

IN THE MATTER OF:

Application of Corona Oil Company for a pilot steam-enhanced oil recovery project, Guadalupe County, New Mexico. CASE **7354**

BEFORE: **Daniel S. Nutter**

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: W. Perry Pearce, Esq.
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant: **Randolph M. Richardson, Esq.**
Roswell, New Mexico

I N D E X

E X H I B I T S

MR. NUTTER: We'll move on to Case 7354.

MR. PEARCE: Application of Corona Oil Company for a pilot steam-enhanced oil recovery project, Guadalupe County, New Mexico.

MR. RICHARDSON: Randolph M. Richardson, Roswell, New Mexico, appearing on behalf of the applicant.

And I have two witnesses to be sworn.

(Witnesses sworn.)

MR. RICHARDSON: I'd like to call Mr. George Scott first.

And on the record and before actually qualifying Mr. Scott, I'd like to point out that the original application for this pilot was made under the name of Public Lands Exploration, and they gone through a name change and it is now Corona Oil Company, and they have been qualified to do business in the State of New Mexico, and do have a statutory agent.

So some of the exhibits may show Public Lands and some may show Corona, but it is exactly the same company with merely a name change.

MR. NUTTER: Well now, Mr. Richardson, the previously approved steam project was issued under the

name of Public Lands. That will also be changed to Corona?

MR. RICHARDSON: Corona.

MR. NUTTER: So the company itself is just changing its name. It's still the same company.

MR. RICHARDSON: That's right, uh-huh.

MR. NUTTER: As a matter of observation, I think that we don't have a bond yet for Corona, so we will need a bond before we can approve any changes, and also we would have to have names changes filed for the old Public Lands wells.

I think the drilling permits for these wells may have been filed in the name of Public Lands, also.

MR. RICHARDSON: Well, may I ask Mr. Williams, do you know anything about the bond?

MR. WILLIAMS: Yes. I handled that. The bond is with Kemper Insurance Company and they have moved their headquarters to -- back to Kansas and they're in the process of changing the name.

Now I checked about four days ago and it still hadn't come through.

MR. NUTTER: You have requested it.

MR. WILLIAMS: Yes, that's been requested over six weeks ago.

MR. NUTTER: I see.

MR. WILLIAMS: I talked to Mr. Padilla just before he left and he informed me that we'd have to get this through and we'd have to have the president of Corona Oil Company also verify this.

MR. NUTTER: Okay.

MR. RICHARDSON: I just wanted to make a statement about the name change and have handed the Examiner, Mr. Nutter, eight different exhibits and Mr. Scott will be testifying on a portion of the exhibits and Mr. Joy will be testifying to a portion of the exhibits.

GEORGE L. SCOTT, JR.

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. RICHARDSON:

Q And Mr. Scott, would you please state your name, address, present occupation?

A My name is George L. Scott, Junior. I am a consulting geologist, located in Roswell, New Mexico.

Q And you have testified several times before the Oil Conservation Division in the past?

A Yes.

Q And --

MR. RICHARDSON: Do I need to go into them? Are they acceptable?

MR. NUTTER: Mr. Scott is qualified, yes, sir.

MR. RICHARDSON: You've examined him before.

Q Mr. Scott, would you please tell the Division the township, section, range of the proposed pilot steam injection program?

A Yes. This proposed pilot steam operation, flood operation, is located in Section 17 of Township 11 North, Range 26 East, in Guadalupe County, New Mexico.

Within the section the pilot will be located in the northeast quarter of the northwest quarter. And this location is shown on Exhibit Number One, a topographic map.

Q Exhibit Number One there is a topo map showing the pilot, location of the pilot project, which is 40 acres.

Would you like to add anything additional as to your topo map, Exhibit One?

A Yes, I would. This map could be useful to anyone that wanted to go to the area. It has the -- shows

the access road coming down from the northwest to the pilot area. There's a notation in the upper lefthand corner as to the New Mexico Highway 129, which is a short distance to the west of the map area. Other prominant terrain features are Mesa Rica in the northeast corner of the topo map.

Q Mr. Scott, would you refer to Exhibit Number Two, which is a base map, showing wells that have been drilled within the immediate area?

A Yes. The purpose of this base map is to -- is to show the wells that have been drilled within a distance of two miles of the proposed pilot.

The proposed pilot is shown, well, is in the northeast quarter of the northwest quarter of Section 17. This shows that there are two wells in that area right now, the No. 1 and 2 Jeanne. These Late wells have been previously drilled and cased and are ready to become a part of the pilot steam operation.

There are two other wells nearby that have also been drilled by Corona and casing run tc TD, and these -- these two wells are the No. 1 Karen State in Section 8 and the No. 1 Barbara in Section 17, south half of 17 there. These two wells could be utilized at some future date in production, possibly.

Other wells on the map are stratigraphic

tests drilled by Exxon and those well symbols are explained down on the information block.

Also shown on the map are dry holes, wells that have been drilled and plugged, by Corona or Public Lands Exploration, and one wildcat drilled by Hankins over in Section 15. I believe all of the other wells shown on this map were either the Humble or Exxon stratigraphic tests or wells drilled by Corona.

Let me back up, that's not correct.

There -- in Section 18 there is a well drilled by Wilbanks, the No. 2 T-4 Cattle Company, and also in the northwest quarter of 17 there is a well drilled by Wilbanks, the No. 1 T-4.

Q. Mr. Scott, would you in addition to your base map showing all the wells that have been drilled in the immediate area, would you refer to Exhibit Three, and would you tell the Division what Exhibit Three portrays?

A. All right. Exhibit Three is a larger scale map of a portion of the area in which -- on which I've contoured on top of the O'Connell sand, a little bit of the Santa Rosa formation.

It is the O'Connell sand that is carrying the -- the heavy oil in the area. The contour interval on this map is 20 feet. It simply shows a segment of the east-

ward trending Newkirk anticline;in the vicinity of the pilot we've got possibly as much as 20 feet of closure.

The -- now on this map the wells that are in the proposed pilot are shown, together with the injection well. The wells are the -- that will be producing wells in the pilot are the 1, 3, 4, and 6 Jeanne. The injection well will be the No. 5 Jeanne, and the No. 7 Jeanne will be our water supply well.

If you'll refer back to the previous map you will see that the No. 7 Jeanne is the same as the Exxon No. 6-12-17 stratigraphic test, and this well is to be re-entered and recompleted as a water supply well.

And Mr. Joy, who will follow, will cover the discussion of mechanics of re-entering that well.

Q Mr. Scott, how was your geological structure map contoured? It's contoured on top of the O'Connell sand, and the information for the map was obtained from what sources?

A Okay, primarily as a result of our coring, and -- and logs, but primarily we drilled into the -- to near the top of this sand and go in with a core barrel and cut cores. Our data and our evaluation of the area is based upon cores and core analysis, primarily.

Q Mr. Scott, on our last case, No. 7048,

Conservation Division Order No. 6504, the Conservation Division approved a pilot steam injection program, located some four to five miles west of this proposed pilot program. Is there a geological reason for having a second pilot project that near the first pilot project?

A Yes.

Q Would you explain the reasons?

A Yes, there sure is. In the first place, it appears from our work that there is no direct connection between the two areas. They are the same sand zone. Apparently this O'Connell sand, the O'Connell member of the Santa Rosa formation, deposited as a result of meandering stream channeling environment, and it's not unusual for segments of those type of reservoirs to be cut off and isolated from each other, one another, and we think that this is the case, and that we're actually in a separate segment of the same general reservoir.

Also, it's deeper over here. It's approximately 350 - 400 feet deeper, greater overburden, and there's a likelihood that to be successful, a steam injection program would have to have higher pressures, and this could be an advantageous thing.

Q Could you tell the Division, please, the approximate depths, top and bottom of thicknesses of the

O'Connell member of the Santa Rosa?

A Yes. The --

Q The reason I ask that, Mr. Scott, was you mentioned that this pilot is somewhat deeper than the first, so I do need to get in the depths for this proposed pilot.

A All right. We estimate in the pilot area the producing sand which we have encountered at a depth of approximately 708 to 760 feet.

Q And it is approximately how thick?

A The gross pay interval would be approximately 50 to 55 feet thick.

Q In other words, this particular area is both deeper and is isolated from the initial pilot.

A That is correct.

Q By the time both pilots are in complete operation you will have a better idea as to other areas that you could obtain oil known to be in place.

And there is oil in place in this area.

A That is correct.

Q And Mr. Joy will testify as to the engineering aspect of obtaining the oil and Mr. Scott, I think you might also refer to Number Four, Exhibit Number Four, which is a plat showing the location of the pilot on the

particular 40-acre tract, together with the footage locations and I wonder, Mr. Scott, if you could go through and tell the Commission, or the Division, the location of the wells, footage locations from the section lines and which wells have been drilled and which ones are proposed to be drilled, and the location of your injection well?

A All right. This -- this plat is on a still larger scale, a scale of one inch equal 200 feet, and shows the -- primarily here the northeast quarter of the northeast quarter -- excuse me, northeast quarter of the northwest quarter of Section 17.

The wells that presently exist are the No. 1 and 3 Jeanne. They have been drilled and cased, and are awaiting perforation and inclusion in the project.

Q Could you --

A Also --

Q -- give a footage location for the No. 1 and then the No. 2?

A Yes. All right. The No. 1 Jeanne was located 800 feet from the north line and 1900 -- 1980 feet from the west line.

The No. 3 Jeanne was 800 feet from the north and 2310 feet from the west line.

We are proposing that the No. 4, 5, and

6 will be drilled. The 4 and the 6 would be producing wells, so indicated here by the appropriate symbol on the map.

The No. 5 would be the injection well.

The No. 4 would be located 463 feet from the north line and 2145 feet from the west line.

The No. 5, the injection well, would be located 800 feet from north and 2145 feet from the west.

The No. 6 would be located 965 feet from north and 2145 feet from the west line.

We would also utilize the -- the old Humble 6-12-17, stratigraphic test, as a water supply well, and that well is located 660 feet from the north and 1980 feet from the west line.

And I believe that covers the description.

Q The No. 7 well, which is the water supply well, was a Humble stratigraphic test drilled, what, several years ago, back in, what, '60?

A Back -- back in the 1960s, yes.

Q Mr. Scott, you might also briefly refer to Exhibit Number Five, which is an electric log of the No. 1 Jeanne. I believe Mr. Nutter has a copy. Would you point out the depths and how the log is marked as to the --

A Yes.

Q -- recoverable zone?

A All right. The -- this is a compensated neutron log run through casing and on this log on the 5-inch scale at 708 feet we show the top of the O'Connell sand of the Santa Rosa formation. This -- the top of the O'Connell sand is also the same as the top of the Santa Rosa in this area.

And at a depth of 806 feet you go out of this O'Connell sand into a shale unit that varies from 10 to 50 feet thick that separates the O'Connell sand from the next sand in the Santa Rosa, called the Monsimer sand, locally, and it will be from 30 to 100 feet thick, the Monsimer sand.

That sand is carrying water in the area and will be the objective of our water supply efforts in the former Humble well.

I'd like to point out on this log here that the lower part of the O'Connell sand typically carries water in this area and on the log that would be that segment from 750 -- or 778 to about 806. It is separated from the good porosity above by approximately 20 feet of tight and low permeability sand.

Our reservoir pay extends on this log from 708 down to 759 feet.

Q Mr. Scott, let me say all the land in this particular quarter section, that is patented fee lands.

There is no State or Federal land involved in this pilot.

A. That is correct.

Q. That is correct, and the base lease on which the pilot will be located is actually in the name of Amoco Production Company.

A. That is correct.

Q. And Corona does have a written farmout contract agreement with Amoco to drill and inject steam.

A. That is correct.

Q. In the event the Commission approves, or Division approves the pilot project, will the institution be in the interest of conservation and protection of correlative rights, and the project will be towards the prevention of waste, economical waste, as well as possibly recovering oil which would not be recovered?

A. Yes.

Q. And the correlative rights of all parties will be protected?

A. Yes, they will.

MR. RICHARDSON: I have nothing further, Mr. Nutter.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Scott, in looking at your Exhibit Four, I find it hard to figure out the actual distance of No. 4 well from the north line. Now you say 463 feet from the north line.

MR. JOY: 635 from the north.

MR. NUTTER: 635, not 463, then.

MR. JOY: 635 and 2145. The wells are all located 165 feet from the injection well.

A Let me see, we may have made an error in the -- right there on that -- excuse me, just one moment, pleare.

MR. RICHARDSON: That is a drafting mistake.

MR. NUTTER: Okay, so this --

MR. RICHARDSON: It is -- it should be 635 feet from the north.

MR. NUTTER: Okay, the pattern, then, is uniform. It's 165 feet from the injection well to each of the four producers, is that it?

MR. RICHARDSON: That is correct.

MR. NUTTER: So you have a uniform pattern then.

MR. RICHARDSON: Yes, we do.

MR. NUTTER: Okay. Well, that had me

disturbed there.

Q Now, Mr. Joy -- or Mr. Scott, you're putting this project on the north side of this 40/40 closure on Exhibit Number Three. There's a slight slope there. Does the slope in the pay have anything to do with the positioning of the pilot project?

Did you want to get on the side of the hill, so to speak?

A No. That is not a factor in -- in our locating it. You're referring there, now, to the subsurface map?

Q Yes, sir.

A No, the structure is not that critical to us. We're not sure as yet about the structural control on this. Structure is important we know, but there's a number of variables involved in the trapping of this oil and we don't have a firm handle on all of them yet.

But we -- we'd have to say that this local structuring situation is not critical for the location of our pilot.

Q Well now, you mentioned that the O'Connell down here below your pay, starting at about 780 feet, carried water on down to 806. Are there other water sands up above here anywhere?

A. Yes. We drilled these wells with air and it is not uncommon to get small amounts of water while we're drilling with air. It's a -- however, the amount of water is very minor, and in any event, that's cased off and cemented to -- protected by cement to the surface on our wells.

Q. Now is there any ranch, windmills or waterwells in this vicnity?

A. I would have to defer that to Chuck Joy, who will follow. I do not --

MR. RICHARDSON: I think --

A. There's none producing from zones as deep as the O'Connell sand, but there are some shallow windmills.

Q. Well, I was thinking of the shallower ones, any shallower supply zones.

MR. RICHARDSON: I think Mr. Joy will probably cover that, as to the water.

MR. NUTTER: Okay.

A. The -- I do know they have real problems out in this area of getting an adequate supply of stock water in the shallow zones. If you look at the topo map, they've got a number of tanks.

Q. I see tanks there but I don't see any

windmills except up here in Section 6 there is one.

A Mr. Joy can help you on that, I think.

MR. RICHARDSON: I would like to, if you have no further questions of Mr. Scott, call Mr. Joy.

MR. NUTTER: I think we're through with Mr. Scott for the time being.

We may have some further questions, Mr. Scott.

A Yes, sir.

MR. NUTTER: In the interim he's excused.

MR. RICHARDSON: All right.

I'd like to now call Mr. Charles Joy.

CHARLES JOY

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. RICHARDSON:

Q Mr. Joy, will you please state your name and present occupation?

A Charles Joy, and I'm a consulting engineer, located out of Artesia, New Mexico.

Q And you have testified several times

before the Oil Conservation Division.

A. Yes, I have.

Q. And I'd say recently?

A. Yes.

Q. And --

MR. RICHARDSON: Are his qualifications acceptable?

MR. NUTTER: They are.

Q. Mr. Joy, would you -- well, you have heard Mr. Scott's testimony as to the geology of the area. Would you please tell the Division some of the engineering, reservoir engineering aspects as to permeabilities, porosities, pressures, water saturation, and other factors which render it impossible to recover the oil in place without some sort of artificial stimulation?

A. Well, core analyses indicate permeabilities range from 100 to 500 millidarcies; porosities from 18 to 22 percent; and a connate water saturation of approximately 12 percent.

Oil analyses indicate oil gravities range from 15 to 17 degrees API and oil viscosity from 29.2 centipoise at 250 degrees Fahrenheit to 6006 centipoise at 70 degrees Fahrenheit.

And core analyses indicate little or no

gas saturation and air drilling operations show no natural water drive and little or no gravity drainage. And these conditions leave the reservoir without a driving mechanism and it is planned to reduce oil viscosity to approximately 27 centipoise and create a driving mechanism by injecting steam.

Q Mr. Joy, would you advise the Division of the pressure at which you propose to inject this steam?

A Yes. Approximately 150 barrels of water will be injected per day and will be converted to steam and this will be injected in the O'Connell sand at 465 degrees Fahrenheit and 475 pounds psig.

Q In the event the pressure is not adequate we would like to reserve the right without a hearing to increase or decrease the pressure to how much, Mr. Joy, would you say?

A Oh, we might have to later go up to about 510 pounds, around 500.

Q In the event the Division does approve the pilot, could the order allow that leeway for approval of increasing the pressure?

MR. NUTTER: We may be able to put that in the order, Mr. Richardson. We'll check it.

MR. RICHARDSON: Without the necessity

of another hearing.

MR. NUTTER: We'll check on that.

Q Mr. Joy, refer please, if you would, to Exhibit Number Six, which, for the record, Exhibit Six is a set of the schematic completions diagrams for several different wells, and it is covering all the wells within the immediate area.

Could you go through and very briefly mention the well, the location, and some of them have been drilled, some of them are closed wells, could you tell the Division which ones have been drilled and what your casing program is as to all wells that will be drilled in the pilot area to protect the shallow water?

A Yes. I've drawn schematics of every well within a half mile radius of the pilot area.

And the first I'll look at Exhibit Number Two on the ownership map there, I've set out, and it indicates these wells.

Q That is Exhibit --

A Right. Now, the first one, though, will be on the proposed injection well and this will be our Jeanne No. 5 Well, and if you look at this schematic, I will -- we will run 30 feet of J-55 casing, 10-3/4 inch, 51 pound, and cement with 10 sacks and circulate back to the surface. I

plan on casing through this well and running 850 feet of K-55 casing, 5-1/2 pounds, 17 pounds to the approximate TD of 850 feet, and I have been cementing all these wells with 220 sacks and circulating it back to the surface to protect any fresh water zones.

And if you'll note, we have not perfor -- I will perforate this well from approximately 710 feet to 770 feet. This is just proposed. We'll have to log these wells to find the exact interval we want to open up for steam injection.

And I will run a 700 -- I mean a Baker packer, HB-1 single jet, at 760 feet. Now this is a high temperature packer with an expansion joint built into the packer.

Now, on this inhibited water, it's almost impossible, and originally I plan to try to load back the annulus with inhibited water. The thing is when we start going down with steam we convert this water behind that tubing into steam and we can't hardly contain it, I mean, it puts a lot of pressure on it.

So I'll just have to work this out later. I may want to open that up. We may not be able to contain that water in there.

The next well would be the Jeanne No.

well, and this is a well we've already set casing in and I think -- if you want me to go through each one of these, but I think -- I believe the schematics are self explanatory here. I've shown the TD, the casing I'm going to set, and how much cement I'm going to be using.

MR. RICHARDSON: Would you like to, Mr. Nutter, have him go through each schematic or -- basically, the program on all the wells that have been drilled and will be drilled is to circulate cement from total depth back to the surface.

There is a proppsal there for one open hole or --

A. Two. We will have two open hole completions, Mr. Nutter.

MR. NUTTER: I notice that the No. 4 is an open hole.

A. Right.

MR. NUTTER: And No. 6 is an open hole, Mr. Joy.

A. We're doing that for one purpose. We're going to see what kind of results we get and if we can recover a larger percentage of oil because this area is highly laminated and we thought maybe the recoveries from these wells might exceed the wells that are cased through.

MR. NUTTER: Well, in the case of the No. 1 and the No. 3, which are both producing wells, the west and the east producing wells, you've got casing set down to TD at about 840, which would be down below the base of the O'Connell --

A. Right.

MR. NUTTER: -- sand.

A. It will be in the shale --

MR. NUTTER: It will be in the O'Connell.

A. Right, and it's about 10 or 15 feet above the Monsimer.

MR. NUTTER: Right. Okay, then we get over to the Jeanne 4 and Jeanne 6, which are the north and the south offsets to the injection well, and you show your casing set at 724 and 710. Now where is that with respect-- where would you propose to set that with respect to the top of the O'Connell?

A. That would be right in the top of the O'Connell.

MR. NUTTER: Right in the top.

A. I'll drill right to the top of the O'Connell and when we top it, then I'll set my casing.

MR. NUTTER: So that footage that you give there is just tentative.

A. Right.

MR. NUTTER: What it really means is that you're going to set this casing in the top of the O'Connell.

A. Correct.

MR. NUTTER: Okay.

A. Now, --

MR. NUTTER: And then how deep would it be drilled? Would it be drilled through the pay of the O'Connell?

A. No, we'll drill down to where we estimate the bottom of the oil bearing zone is from the two wells that we have already completed in the area.

MR. NUTTER: Okay, in other words, you would drill to where you would anticipate --

A. Getting into that tight area, right there.

MR. NUTTER: Getting into that tight area, which starts at 759 feet on the Jeanne No. 1.

A. Right, that is correct.

MR. NUTTER: And that would be the bottom, so you wouldn't be penetrating this section down here where the water is.

A. No, I will not be penetrating it.

MR. NUTTER: Okay.

MR. RICHARDSON: Do you want him to go each one separately before placing them in evidence?

MR. NUTTER: I don't think he will. If he just generally discusses them and then I'll, if I have any questions on them specifically, I'll ask him, like I just now did.

MR. RICHARDSON: Okay, real fine.

A Well now, the No. 7, Jeanne No. 7 is going to be our water source well, and I --

Q Mr. Joy, anticipating -- anticipating the No. 7 well is your water supply, water source well, now what zone, where will that water come from, and how much water do you propose to use?

A We would be using approximately 150 barrels of water per day, and that may exceed our needs. At this time we plan on converting 150 barrels of water per day to steam.

Q And that water is coming from the -- what formation?

A The Monsimer.

Q Monsimer, which is a localized name and it is a lower member of the Santa Rosa formation.

A And this will be an open hole completion.

I plan on re-entering that well, in fact, we're in the process of re-entering it at this time, and I will top the Monsimer and set casing in the top of the Monsimer sand and then I'm going to cement that with 75 sacks.

Now if you'll look at this schematic, the top of the O'Connel sand is approximately 700 feet in this well. The calculated top of the cement will bring this back to 600 feet, and I've already talked with Steve Reynolds, the State Engineer. He has authorized the recompletion of this well as a water source well, since it's going to be a water well.

Q. And you'll actually use very little water.

A. Right.

Q. Would you --

A. And that's the reason there's no C-101 in on this. This comes under State Engineer's jurisdiction.

I thought I'd show the Commission I am going to cement this for two purposes. One is to protect the water zone and the other is to restrict any loss of steam due to the proximity of this well to the pilot area.

MR. NUTTER: Now this is an old Humble stratigraphic test, right?

A. Right.

MR. NUTTER: What kind of a casing or whatever is in it right now?

A. Nothing right now. I'm down to about 750 feet at this time.

MR. NUTTER: You're re-entering it now.

A. I'm re-entering it, but there was one plug in this well. No, there was two plugs. There's one at the surface and then we had one that was over this water sand at about 220 feet. They did have a plug over that.

Q. In your opinion, will that zone produce enough water for your steam injection project?

A. Yes, because I have penetrated the Monsimer in the Karen -- in the Barbara No. 1 South, and in the Karen No. 2, located directly east there in Section 17, and we had probably -- it was probably making close to a barrel a minute in those wells.

Q. In other words, you do have sufficient water --

A. Right, water, and I --

Q. -- in the immediate area.

A. In fact, those should average about 14,000 barrels per acre feet. I've run the reserves out on the water there.

Q. Could you please refer to the Exhibits

Numbers Seven and Eight. One of those is the request for a permit for a pit, a lined, sealed pit, for your discharge water from the water softener, and Exhibit Number Eight is a request for permit to the Oil Conservation Division for water produced from the heater-treaters.

Could you please go into more detail as to the lining of the pits and protection of surface water? Surface ground water from discharging in the pits?

A. Right. Due to the future production, and anticipating that we will produce some water in this area, and in order to take care of this and to handle it, I have proposed to dig earthen pits and I've made out the OCD's application for this, and if you'll look at this first exhibit, that was in Public Lands Exploration Company, Incorporated's name, and this would be on the Jeanne lease and it will be Unit C, Section 17, 11 North, Range 26 East, and analysis of some of the waters from some of the wells from this -- not in this exact area, but in other areas, indicates that the chlorides content is about 700 parts per million; total solids were not available, but I know they're very low because we were -- I've used water in other areas. And at this time we probably would not produce over about a half a barrel of water per day. We have not -- well, that would be the deal on the waterflood, but we don't have the problem.

And then on the method of hydrocarbon entrapment to be employed, I just put out there in -- they've got header pits, I put an asterisk down below. This is, let's see, this is the water produced from the heater-treater, and I've elected to build a 20x20x6 foot pit and that gives me 400 square feet and from the top of the firewalls down to the bottom of the pit it will be approximately 8 feet, and I will use a polyethylene which has thickness of 6 mils, and it goes in there.

Does manufacturer recommend protection of material from direct sunlight? No.

Is material resistant to hydrocarbons? Yes.

Is material resistant to acid and alkalies? Yes.

Is material resistant to salt? Yes.

Is material resistant to fungus? Yes.

Is material rot resistant? Yes.

Will joints of material be fabricated in the field? No.

And then that will take care of this first pit.

The other pit will be required, because when we want to use softeners out there to convert our water

so we will not plug up our steam generator, and these softeners have to be regenerated approximately every 20,000 gallons, and brine water is used to regenerate these softeners with, and it is approximately 60 gallons is produced.

Consequently, we're going to have to have an area to discharge this brine water in, and I plan to build a similar pit but a little bit larger,30x30x6 feet, and the rest of the information is identical to the other pit, and the -- we're going to use a polyethylene and it will be 6 mils thick.

Now the reason we're not splicing this, I can buy the material large enough to cover the pit without splicing in the field.

Q You will actually have two pits, then.

A Right, we will have two pits there. And I've checked this, and this should be ample or sufficient large enough -- the pit should be large enough to take care of -- of the water produced at this time from either source there. The evaporation is approximately 70 - 80 inches per year in New Mexico.

Q They definitely will be lined.

A Right, they definitely will be lined.

Q And I'll ask Mr. Nutter, those permits, which you have, which were given as Exhibits Seven and Eight,

do we need to file a separate one -- application or can the ones that are -- will be introduced in evidence, will that suffice?

MR. NUTTER: No, Separate permits will have to be issued for the pits. These are just exhibits in this hearing. They're not actually applications.

I think Mr. Joy brought some applications in this morning.

A. Well, we'll have to submit these, then, because this is your application that we're using for exhibits. That is the OCD's legal application.

MR. NUTTER: Right. Well, didn't you give some of those to --

A. Well, that was for another area.

MR. NUTTER: Oh, that's for that other area.

A. Well, we'll have to submit new ones then to avoid that.

MR. NUTTER: Well, we'll have some question on this material. 6 mils doesn't meet our specifications in the first place.

A. All right, we can go much higher.

MR. NUTTER: The minimum is 30 mils under our specification.

A. Okay, 30 mils. We'll pick that up, then, Mr. Nutter.

MR. NUTTER: And I've never seen polyethylene yet that didn't have to be protected from sunlight.

A. Okay, well, we've got it covered with dirt out there right now.

MR. NUTTER: Yeah.

A. It's covered with dirt.

MR. NUTTER: And if you don't protect it from sunlight it just will be in shreds in a little while.

A. Okay. We need 30 mil, 30 mil, and now what material do you recommend?

MR. NUTTER: I think Mr. Johnson here can furnish you with a copy of our pit specification booklet.

A. All right.

MR. NUTTER: He probably didn't have a copy.

A. He didn't -- Bill Griffith didn't have one because I went in and talked to him there in Artesia.

MR. NUTTER: If you'll ask Mr. Johnson here before you leave.

A. All right. I'll get it. We'll pick that up, then.

Q. Mr. Joy, I have only one other question.

And that is I see on all the plats that you are not having an observation well. You're having an injection well, water supply well, and then four producers, is that correct?

A. Correct.

Q. And there's no mention of an observation well, so you will not have an observation well in this particular project, is that correct?

A. No. That is correct.

Q. So you will have basically, the producers, your injection well, and the water well, all located on one lease.

A. Right.

Q. Within a very small area. Will the -- Mr. Joy, will the institution of this project be in the interest of conservation and prevention of waste?

A. Yes, it will.

Q. Will correlative rights of all parties be protected?

A. Yes.

MR. RICHARDSON: I have nothing further, Mr. Mutter.

CROSS EXAMINATION

BY MR. NUTTER:

Q. Mr. Joy, I asked Mr. Scott about existing shallow fresh waters in the area and he deferred to you.

Can you tell me what the situation is?

A. Yes, we -- they are not consistent throughout the area. You'll run into them occasionally in individual wells.

We've encountered some around 100 feet down to 250 and those will be coming in on C-105s when I get those submitted.

Q. Do you know the quality of the water?

A. No, we haven't been able to get the quality because I haven't run any analysis and oftentimes we do foam up in order to help get our cuttings out because you're cutting through about 300 feet of shale in this area, and you get a little water, fresh water on there and it balls up and it causes tremendous problems in drilling. Consequently, we have to use a foaming agent, which would contaminate any fresh waters.

Q. Well, now you've been out there a lot. Are there any windmills in the vicinity?

A. No, not in that immediate vicinity.

The closest one is there about four miles up there. It's on the Monsimer right -- where's the topo map?

Q. Is that the one that shows up there in Section 6?

A. Yeah, it's up there in Section 6.

There is another windmill over in, it would be, just a minute, I think there's one up in here somewhere on the west -- it would be in 12 or 7. Wait a minute, that's 12, isn't it? Yeah, 12, Section 12, right there in Section 12.

Q. That would be east of here then.

A. It's west. Go west from 7 up there.

Q. Oh.

MR. RICHARDSON: The nearest windmill is located how far from the --

A. Well, that's approximately -- yeah, it's on the topo there. If you'll look at your topo there just west of 7. That would be the nearest windmill to this area.

Q. Well, is that a windmill there at that --

A. Right.

Q. -- 4674?

A. Right.

MR. RICHARDSON: That's roughly, what, about a mile?

A But I've been circulating them about approximately 100 sacks from each well when I cement from TD to surface.

Q Well, I notice on a number of these pages in Exhibit Number Six, Mr. Joy, for these old wells it doesn't show any plugs at all.

Are those wells that were drilled and you have no knowledge of how they were plugged?

A Those were all -- these are strat tests. We have no knowledge on them.

The 6-12-17, I put Humble, it's now Exxon. That was a strat.

The 6-14-17 was a strat. All we know is the TD and we picked that up off of a log.

And the 6-33-17, and that was a strat test.

Now the Wilbanks, we do not know how it was plugged but we did find some information that indicated they had 12-1/4 inch casing set at 75 feet.

Q But on the other strat tests that -- of Humble's that you did enter, you found a surface plug and you found another plug at about 200 feet, I think you said.

A Are you talking about the whole general area or just the pilot area here?

Q I'm talking about in the pilot area.

A In the pilot area that did have one plug down at 220 to 230 feet and we encountered that water when we drilled it out.

Q Uh-huh.

A So it covered a water zone down there, and that's the reason --

Q So at least on one well Humble did plug off the water.

A Right.

Q But you don't know whether they did on these others?

A Not in this area, no. We did not re-enter those wells.

Q Now, you mentioned that the -- the viscosity of this oil was about 6000 centipoise.

A Right.

Q At 70 degrees.

A Right.

Q And 27 centipoise at 200 and some degrees?

A 65, that's correct.

Q Now what centipoise do you have to lower it to in order to get to flow through the reservoir?

A. Well, we feel like if we can raise it up to this temperature that we'll get it down to about 27 centipoise.

Q. And it ought to flow.

A. Right, then it should move. And then we'll create a drive with the steam.

Now -- but on these steam floods what will happen, the top part is going to be a steam drive, the bottom is going to be a hot water drive.

Q. That's right.

A. As the water condenses out and moving out through the reservoir.

MR. NUTTER: Are there any other questions of Mr. Joy?

He may be excused.

Did you have anything further?

MR. RICHARDSON: I have nothing further.

MR. NUTTER: You want to present your exhibits, I presume.

MR. RICHARDSON: Yes, I would like to offer Exhibits One through Eight into --

MR. NUTTER: Exhibit One through Eight will be admitted into evidence.

And you have nothing further?

MR. RICHARDSON: I have nothing further.

MR. NUTTER: Does anyone have anything they wish to offer in Case Number 7354?

We'll take the case under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 7854 heard by me on 10/7 1981.

, Examiner
Oil Conservation Division

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-2434

January 12, 1982

Re: CASE NO. 7354
ORDER NO. R-6868

Mr. Randolph Richardson
J. P. White Building
Roswell, New Mexico 88201

Applicant:

Corona Oil Company

Dear Sir:

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

Copy of order also sent to:

Hobbs OCD x
Artesia OCD x
Aztec OCD

Other

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

CASE NO. 7354
Order No. R-6868

APPLICATION OF CORONA OIL COMPANY FOR A PILOT STEAM ENHANCED OIL RECOVERY PROJECT GUADALUPE COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on October 7, 1981, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 12th day of January, 1982, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Corona Oil Company, seeks authority to institute a pilot steam enhanced oil recovery project on its Jeanne Lease, Undesignated Santa Rosa Pool, by the injection of approximately 150 barrels of water as steam into the "O'Connell Sand" zone of the Santa Rosa formation through its Jeanne Well No. 5 located approximately 800 feet from the North line and 2145 feet from the West line (in Unit C) of Section 17, Township 11 North, Range 26 East, NMPM, Guadalupe County, New Mexico.

(3) That the wells in the project area are incapable of commercial production due to the low viscosity of the oil found in the pay sand and the lack of any significant natural drive mechanism.

(4) That the proposed enhanced recovery project may result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(5) That the operator should take all steps necessary to ensure that the injected fluid enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

(6) That the applicant shall take such steps as may be necessary to ensure that the operation of the steam injection project does not contaminate surface or subsurface waters or damage nearby properties.

(7) That the injection wells or injection pressurization system should be so equipped as to limit injection pressure at the wellhead to no more than 475 psi, but the Division Director should have authority to increase said pressure limitation, should circumstances warrant.

(8) That the applicant proposes to drill and complete four new wells as producers, all located, respectively, at orthodox and unorthodox locations within the NE/4 NW/4 of said Section 17 as follows:

Jeanne Lease Well No.	Location
1	800 feet from the North line and 1980 feet from the East line
3	800 feet from the North line and 2310 feet from the East line
4	635 feet from the North line and 2145 feet from the East line
6	965 feet from the North line and 2145 feet from the East line

(9) That the applicant should submit monthly reports of injection volumes, pressures, temperatures and production in a form acceptable to the Division.

(10) That the subject application should be approved and the project should be governed by the provisions of this order and of Rules 702 through 708 of the Division Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Corona Oil Company, is hereby authorized to institute a pilot steam enhanced recovery project

on its Jeanne Lease, Undesignated Santa Rosa Pool, by the injection of water into the "O'Connell Sand" zone of the Santa Rosa formation through its Jeanne Well No. 5 located approximately 800 feet from the North line and 2145 feet from the West line of Section 17, Township 11 North, Range 26 East, NMPM, Guadalupe County, New Mexico.

(2) That injection into said well shall be through internally coated tubing, set in a packer at approximately 660 feet; that the casing-tubing annulus of each injection well shall, at the option of the applicant, be loaded with an inert fluid and shall be equipped with an approved pressure gauge or attention-attracting leak detection device.

(3) That the operator shall immediately notify the supervisor of the Division's Santa Fe District 4 office of the failure of the tubing or packer in the injection well, the leakage of water or oil from or around any producing well, or the leakage of water or oil from any plugged and abandoned well within the project area and shall take such timely steps as may be necessary or required to correct such failure or leakage.

(4) That the injection well herein authorized and/or the injection pressurization system shall be so equipped as to limit injection pressure at the wellhead to no more than 475 psi, provided however, the Division Director may authorize a higher surface injection pressure upon satisfactory showing that such pressure will not result in fracturing of the confining strata.

(5) That the applicant is further authorized to drill and complete four new wells as producers, all located, respectively, at orthodox and unorthodox locations within the NE/4 NW/4 of said Section as follows:

Jeanne Lease Well No.	Location
1	800 feet from the North line and 1980 feet from the East line
3	800 feet from the North line and 2310 feet from the East line
4	635 feet from the North line and 2145 feet from the East line
6	965 feet from the North line and 2145 feet from the East line

(6) That the subject project is hereby designated the Corona Oil Company Santa Rosa Enhanced Recovery Project and shall be governed by the provisions of Rules 702 through 708 of the Division Rules and Regulations.

(7) That the applicant shall operate said project in such a manner as to ensure against contamination of surface or subsurface waters or damage to nearby properties.

(8) That monthly progress reports of the project herein authorized shall be submitted to the Division in a form acceptable to the Division.

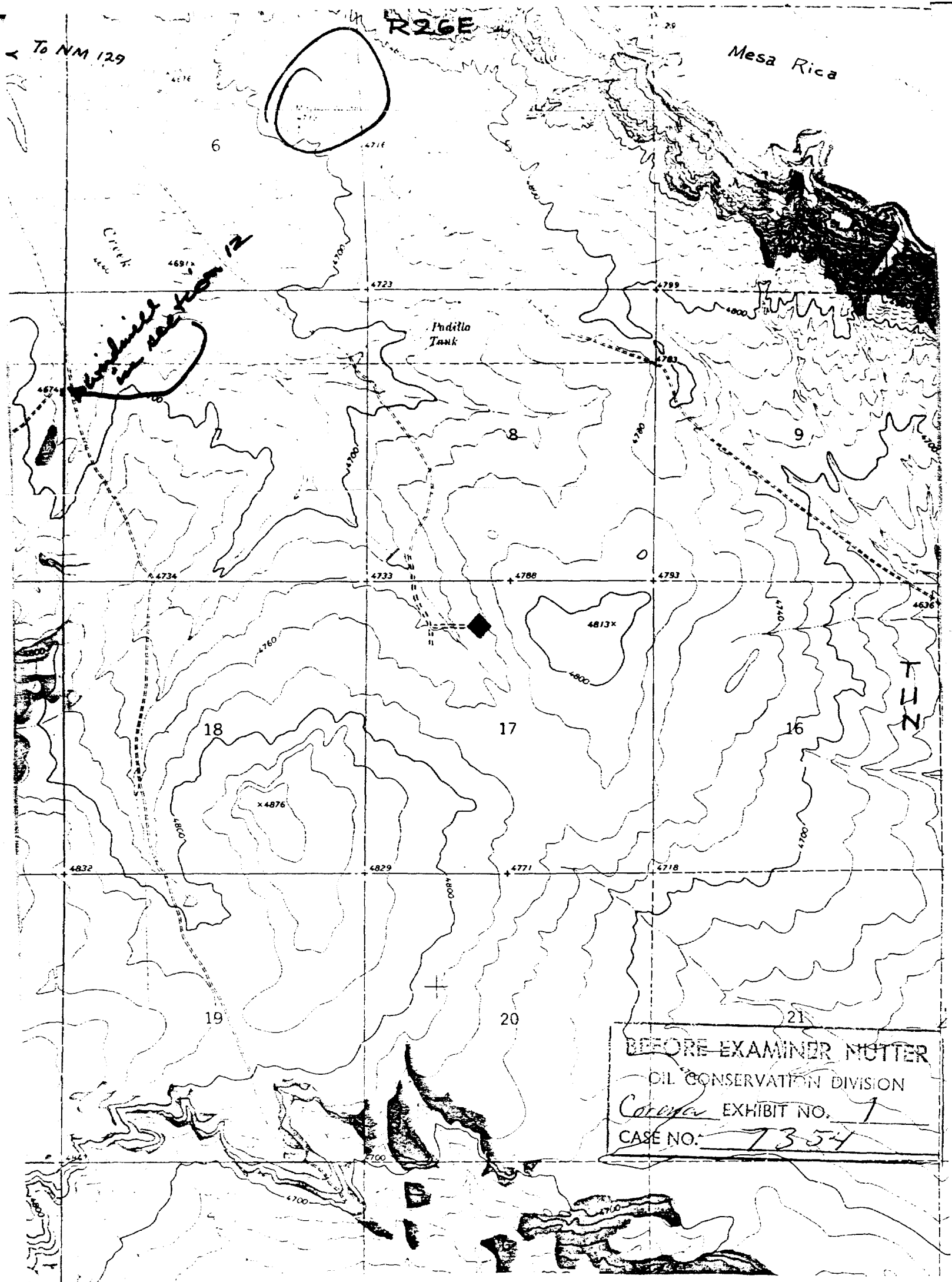
(9) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

JOE D. RAMEY,
Director

S

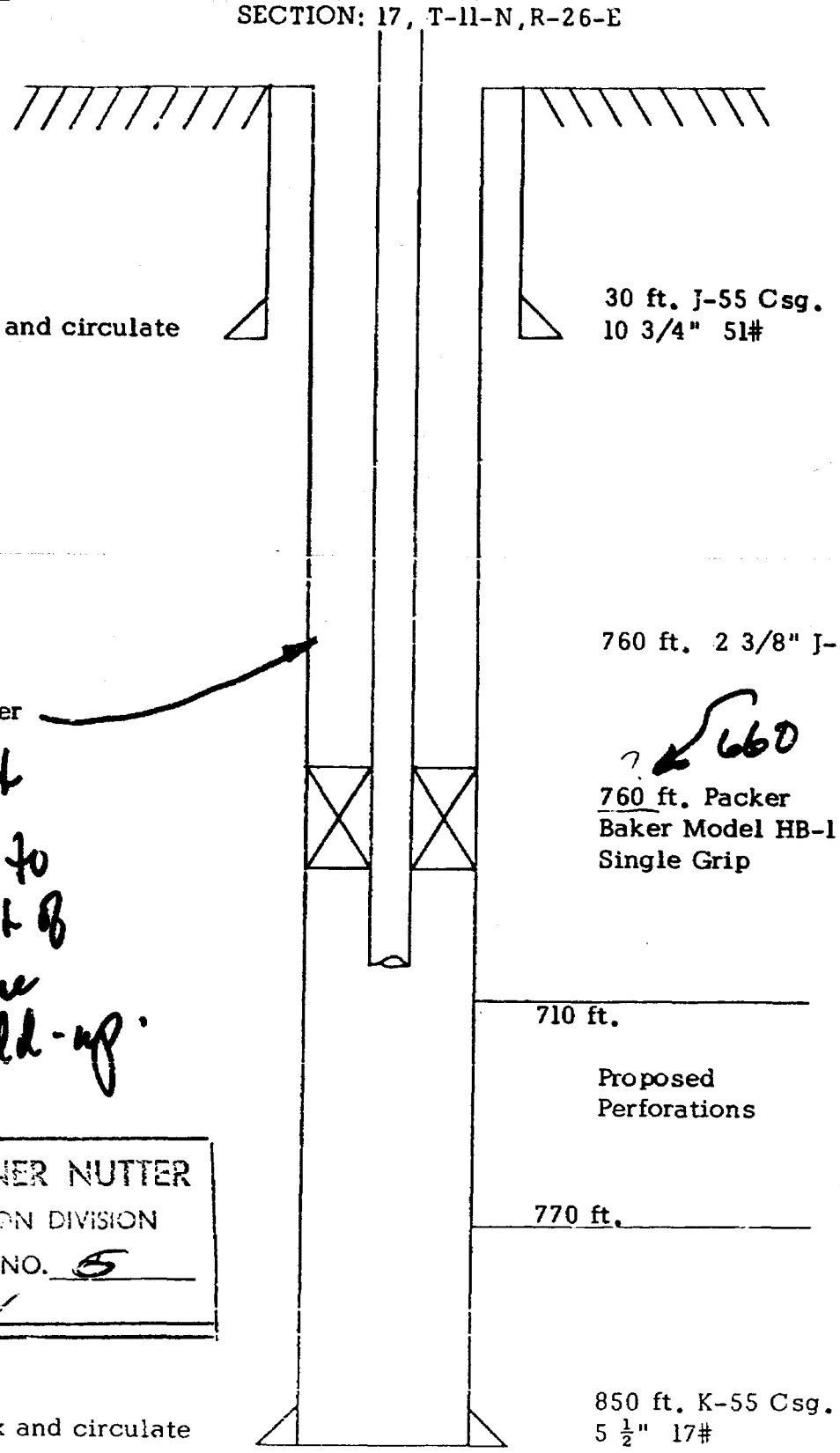


BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
Corega EXHIBIT NO. 1
CASE NO. 7354

TYPE MAP	Topographic		
AREA	Portions of USGS Neafus Ranch, N. & Ortega Tank Maps		
HORIZON	Contoured on surface topography		
C.I.	20 feet	SCALE	1:24,000 (1" = 2000')
COUNTY	Guadalupe	STATE	New Mexico
DATE	October, 1981	Map shows pilot steam flood.	

PROPOSED INJECTION WELL
CORONA OIL CO.
JEANNE No.5 WELL
LOCATION: 800' FNL & 2145' FWL
SECTION: 17, T-11-N, R-26-E

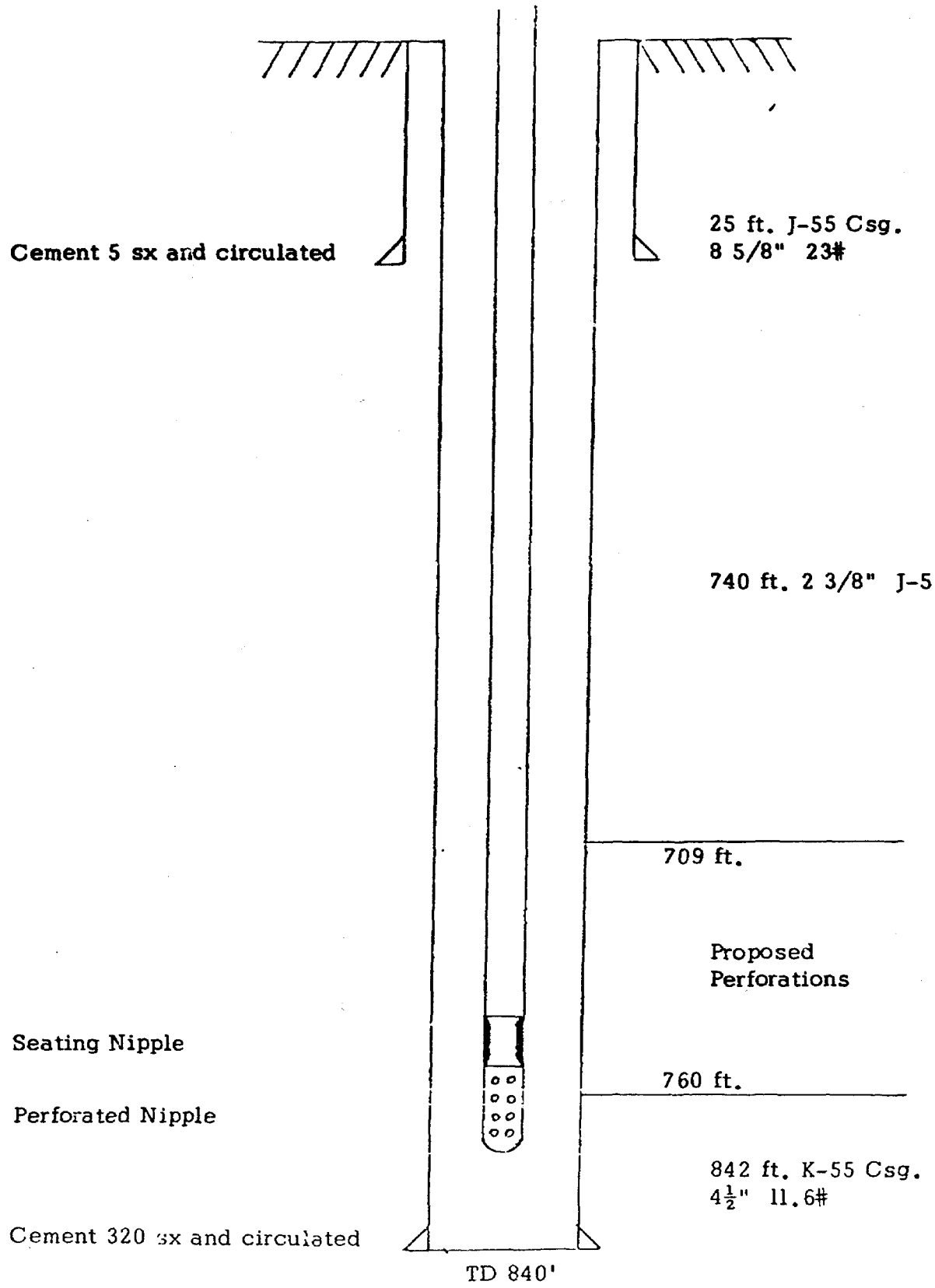
prop inj well



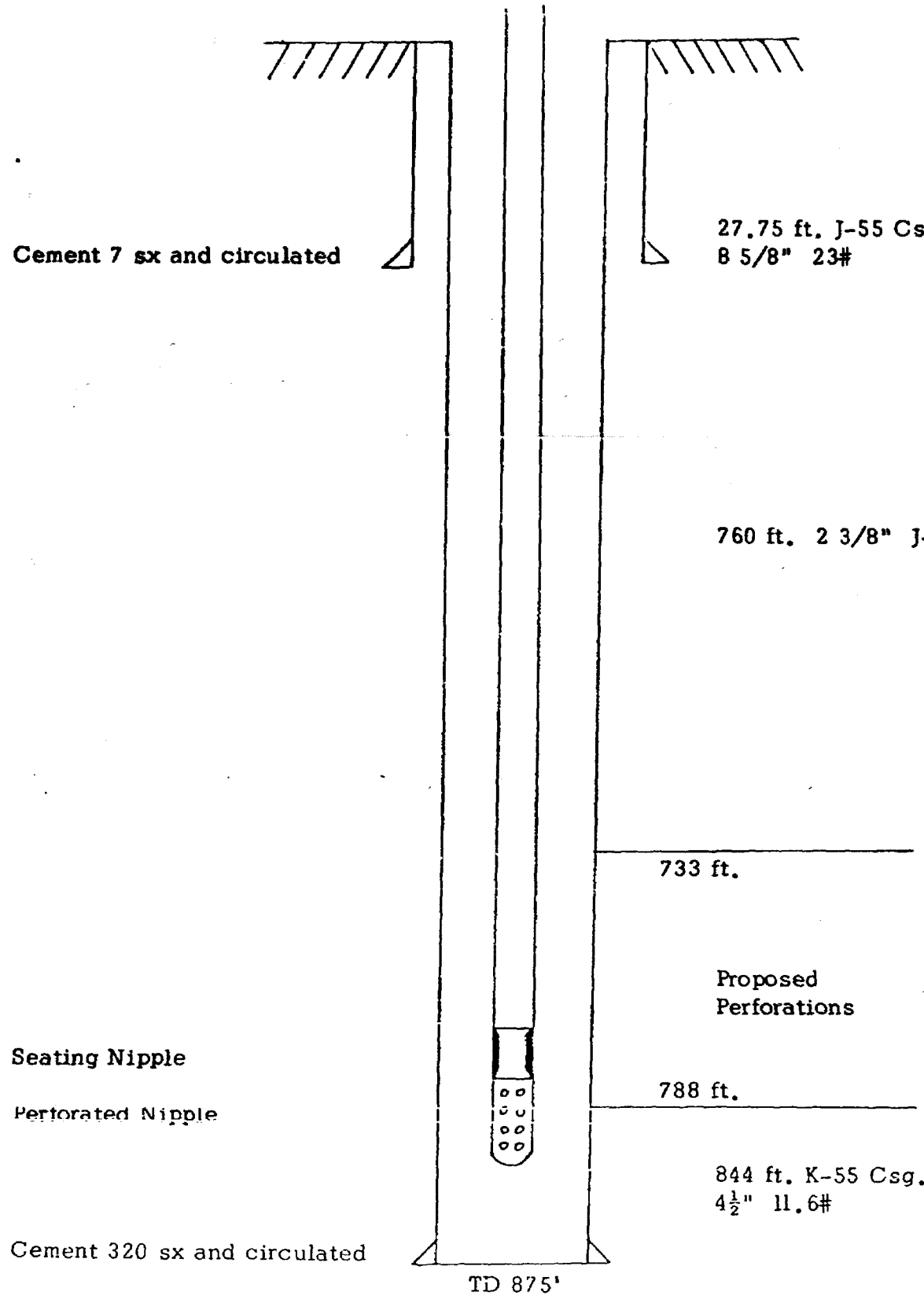
may not be seen to on acct of pressure build-up.

BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
Corona EXHIBIT NO. 5
CASE NO. 7354

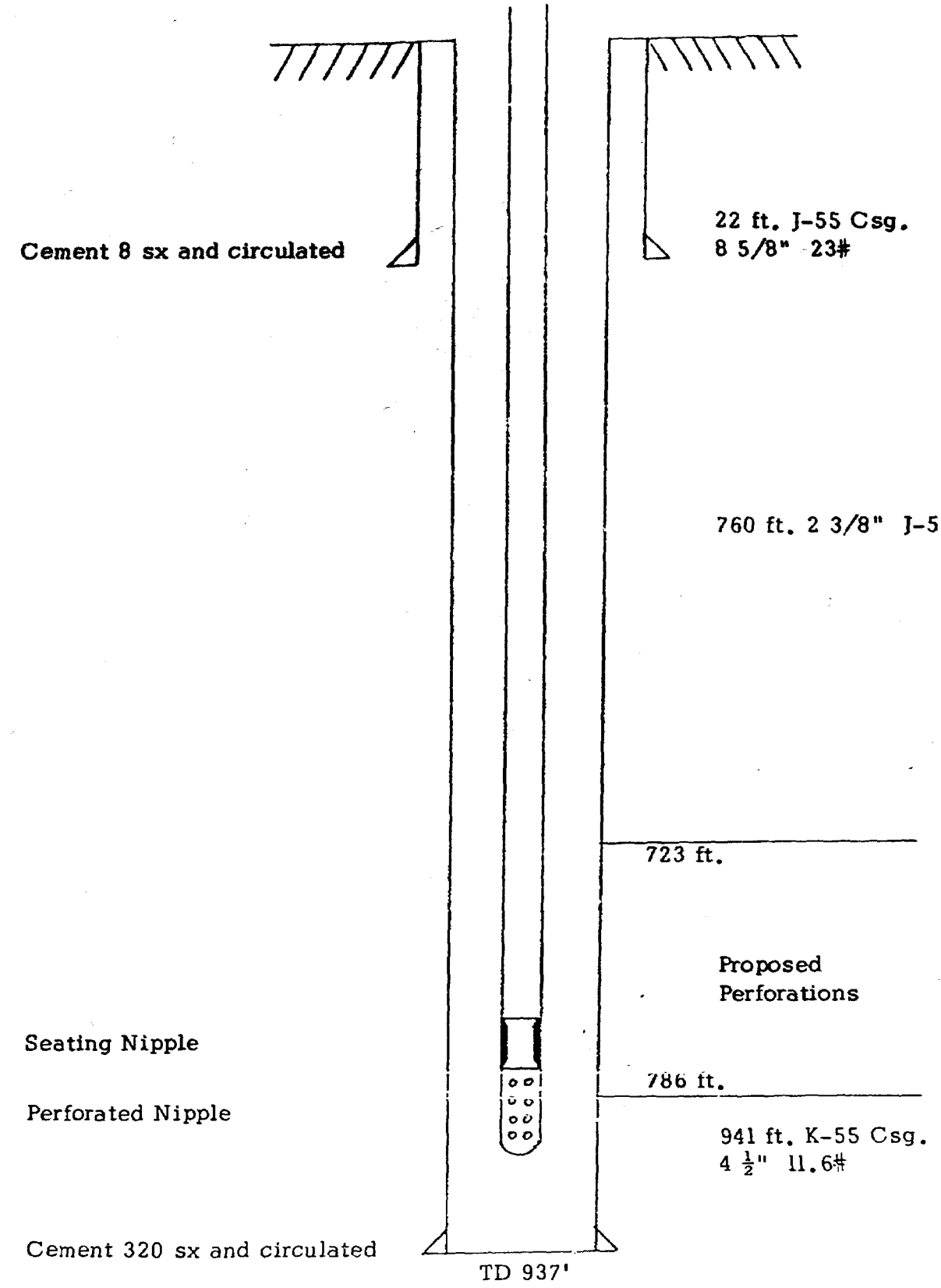
PRODUCER
CORONA OIL CO.
JEANNE No.1 WELL
LOCATION: 800' FNL & 1980' FWL
SECTION 17, T-11-N, R-26-E



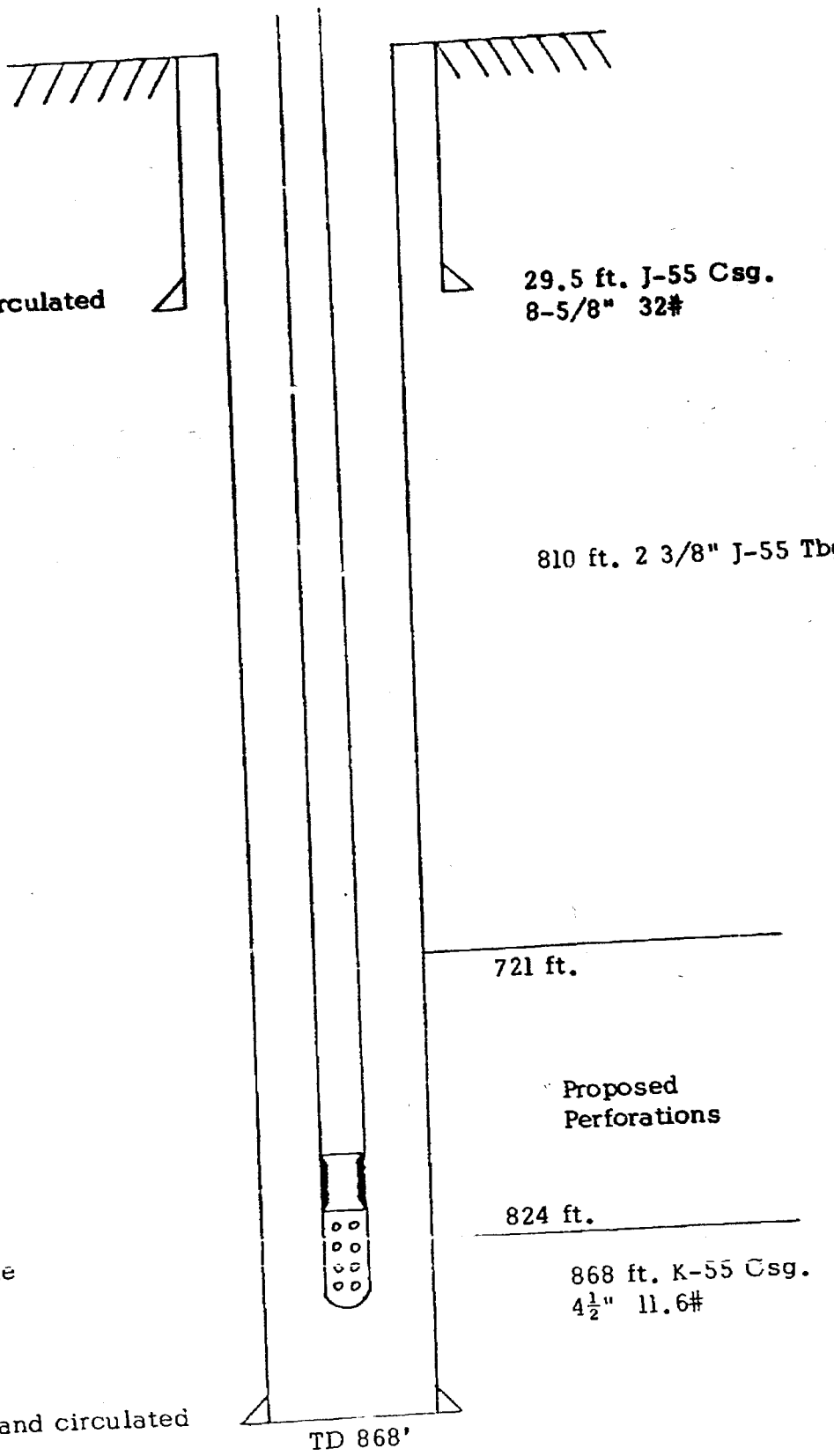
PRODUCER
CORONA OIL CO.
JEANNE No. 3 WELL
LOCATION: 800' FNL & 2310' FWL
SECTION 17, T-11-N, R-26-E



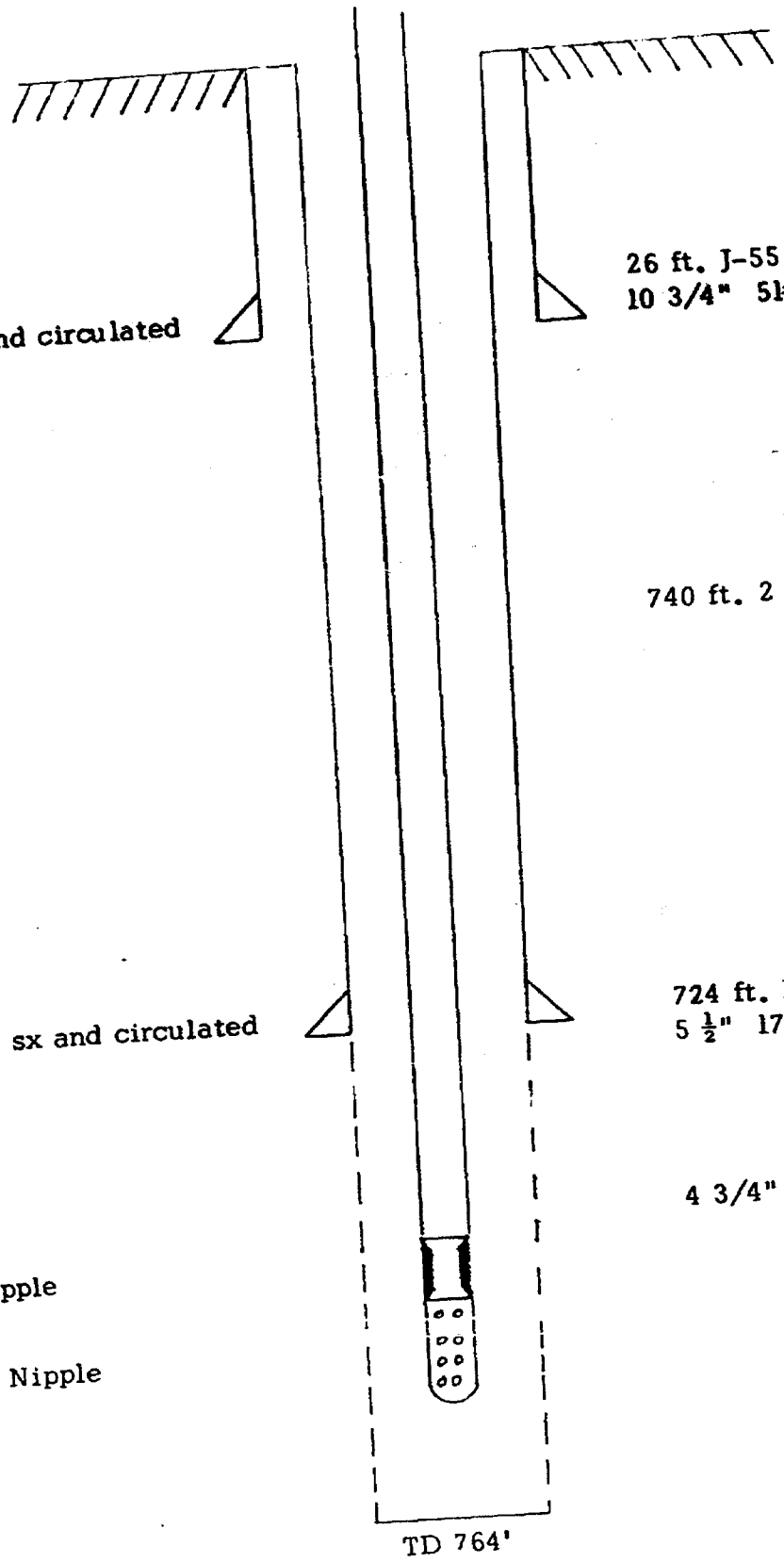
PRODUCER
CORONA OIL CO.
BARBARA No.1 WELL
LOCATION: 2030' FS L & 2030' FEL
SECTION: 17, T-11-N, R-26-E



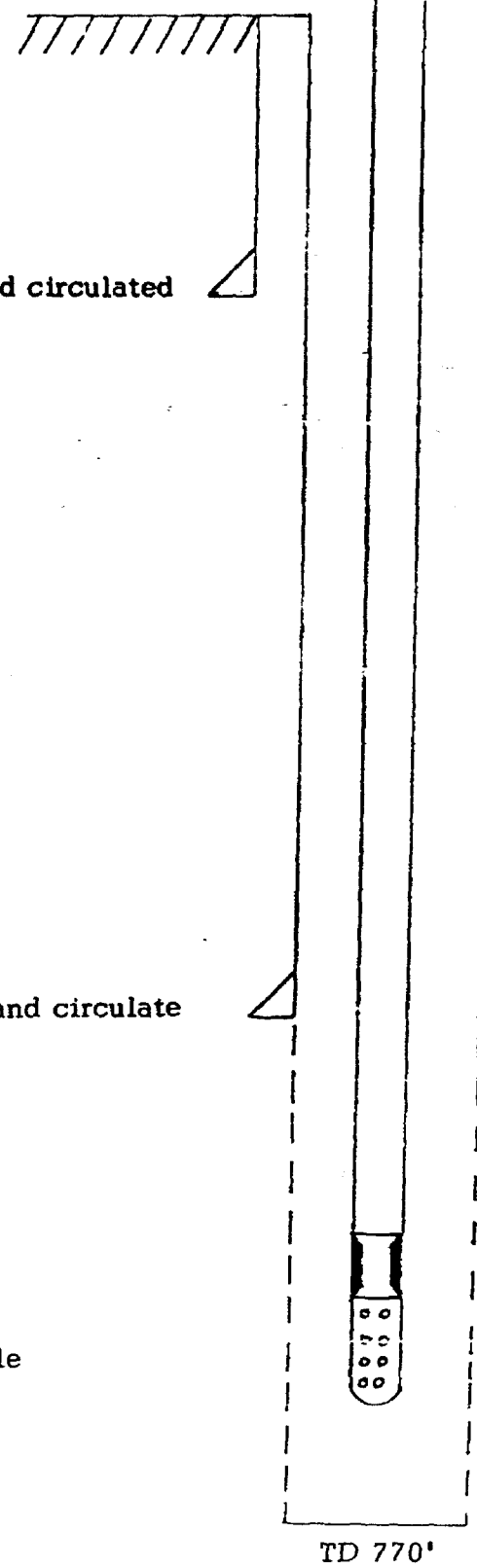
PRODUCER
CORONA OIL CO.
KAREN STATE No. 1 WELL
LOCATION: 330' FWL & 2310' FWL
SECTION 8, T-11-N, R-26-E



PROPOSED PRODUCER
CORONA OIL CO.
JEANNE No.4 WELL
LOCATION: 635' FNL & 2145' FWL
SECTION 17, T-11-N, R-26-E



PROPOSED PRODUCER
CORONA OIL CO.
JEANNE No.6 WELL
LOCATION: 965' FNL & 2145' FWL
SECTION 17, T-11-N, R-26-E



Cement 9 sx and circulated

26 ft. J-55 Csg.
10 3/4" 51#

750 ft. 2 3/8" J-55 Tbg.

Cement 320 sx and circulate

710 ft. K-55 Csg.
5 ½" 17#

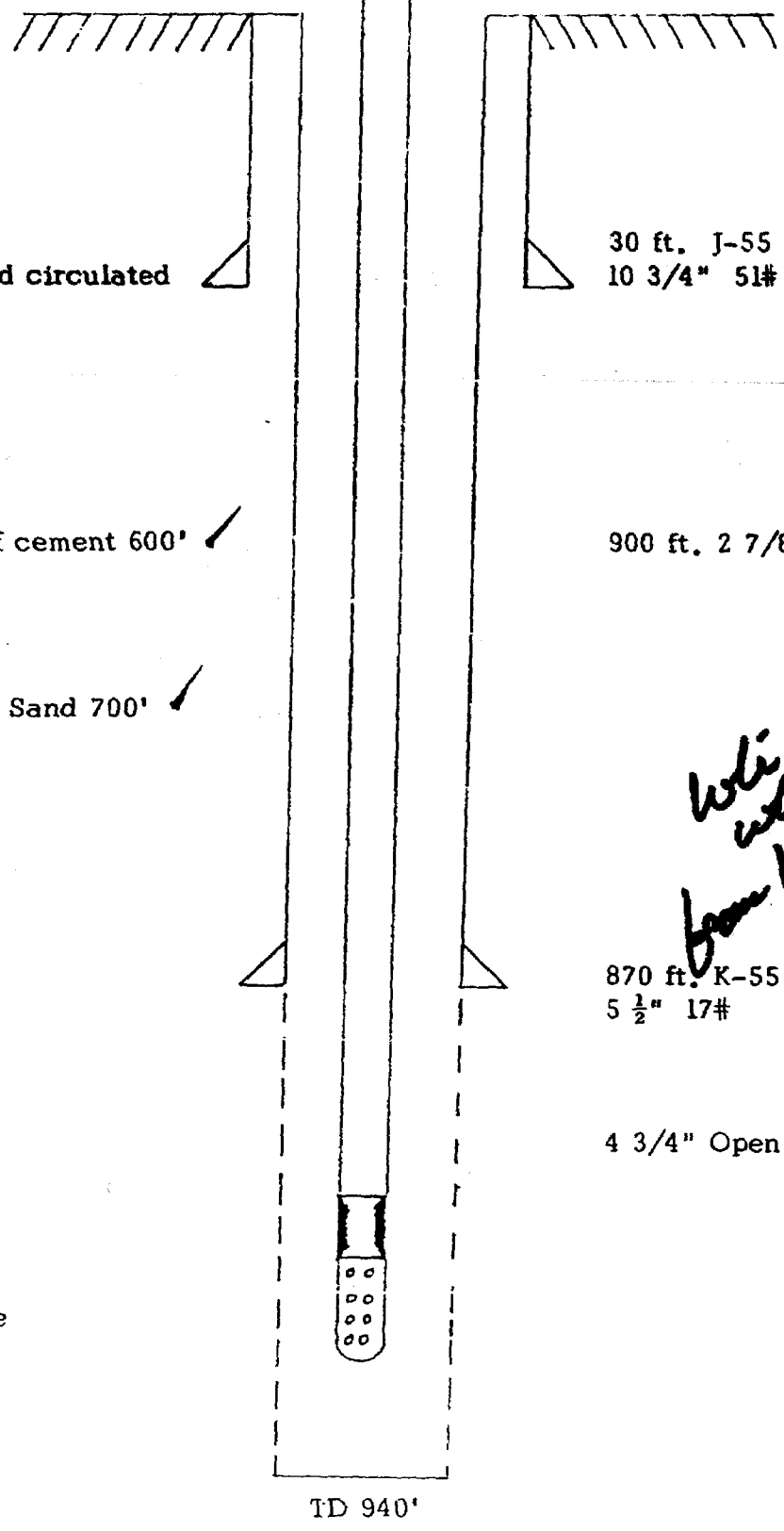
4 3/4" Open Hole

Seating Nipple

Perforated Nipple

TD 770'

WATER SOURCE WELL
CORONA OIL CO.
JEANNE No. 7 WELL
LOCATION: 660' FNL & 1980' FWL
SECTION 17, T-11-N, R-26-E



Cement 10 sx and circulated

Calculated top of cement 600'

Top of O'Connell Sand 700'

Cement 75 sx

Seating Nipple

Perforated Nipple

TD 940'

30 ft. J-55 Csg.
10 3/4" 51#

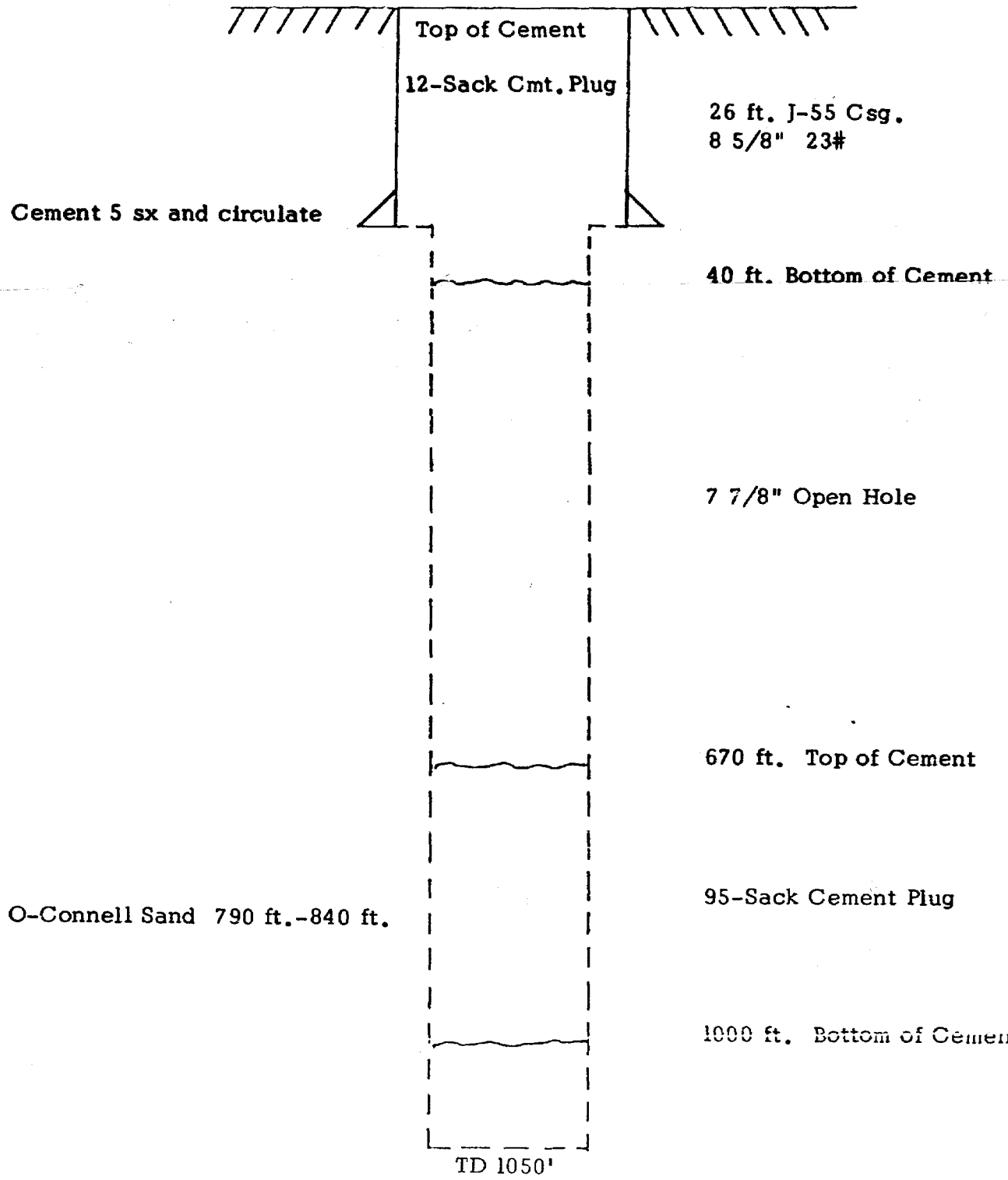
900 ft. 2 7/8" J-55 Tbg.

870 ft. K-55 Csg.
5 1/2" 17#

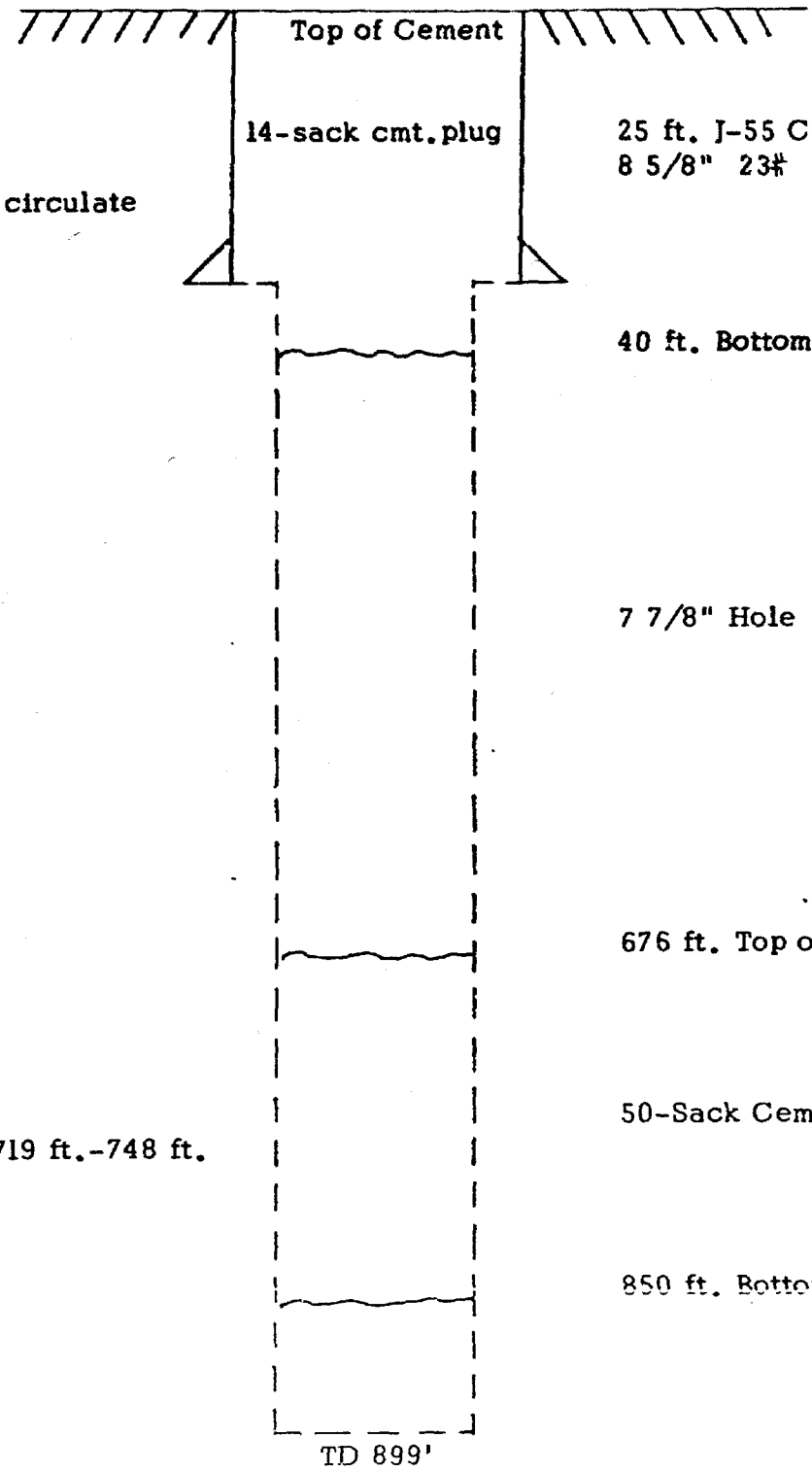
4 3/4" Open Hole

Will supply well with the same information (below O'Connell sand)

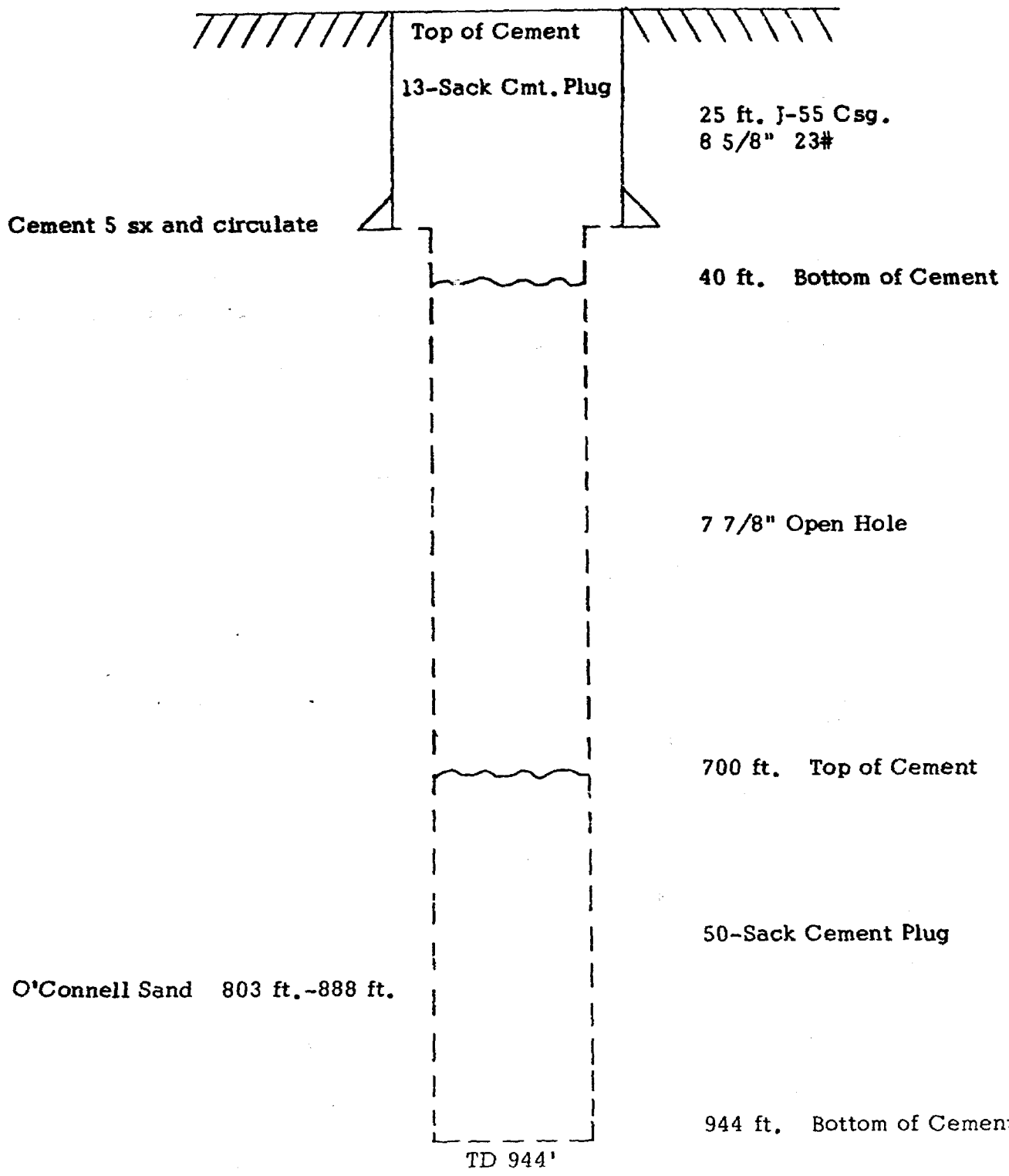
PLUGGED AND ABANDONED
PUBLIC LANDS EXPLORATION CO., INC.
BERYL No. 1 WELL
LOCATION: 1650' FWL & 1980' FWL
SECTION 8, T-11-N, R-26-E



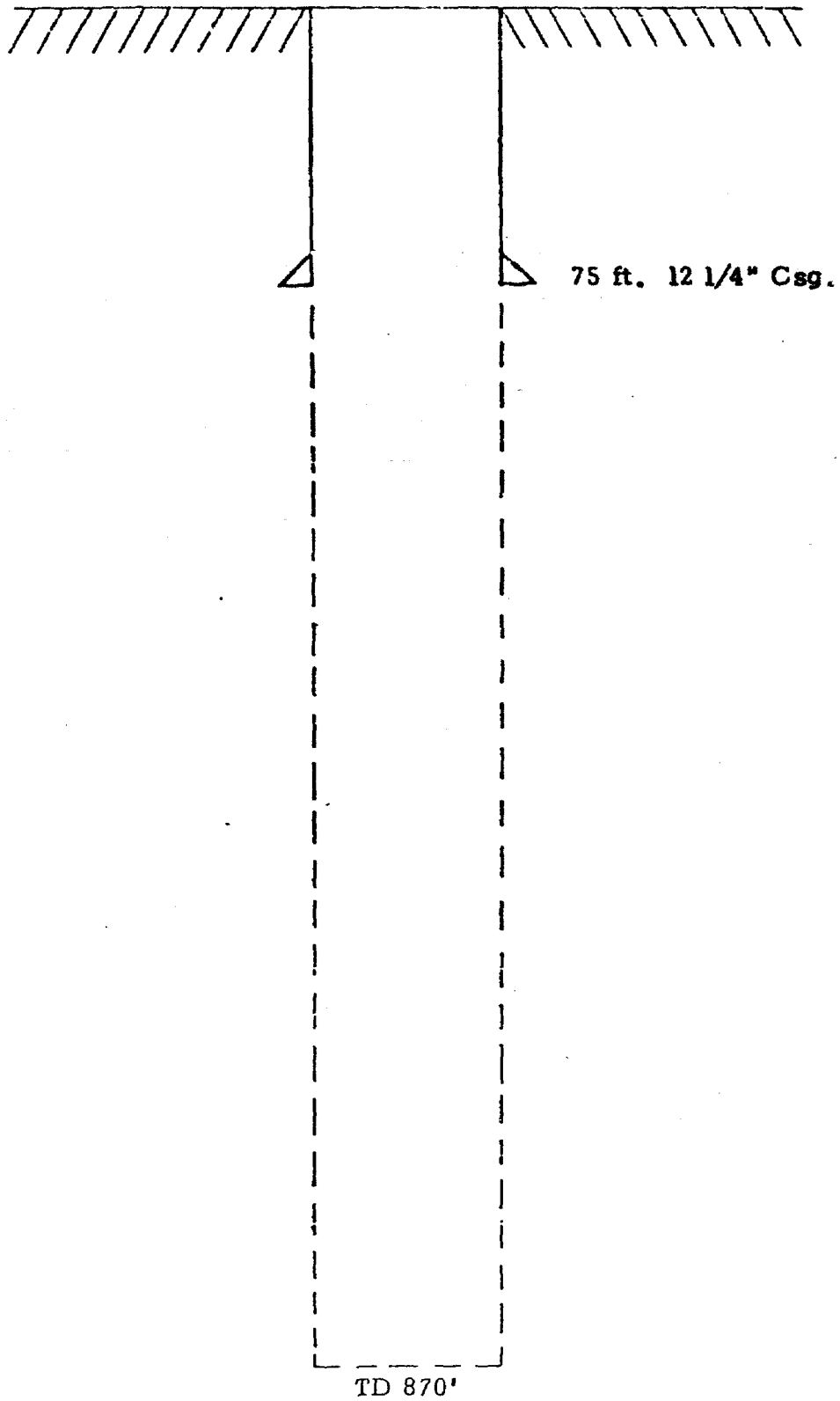
PLUGGED AND ABANDONED
CORONA OIL CO.
JEANNE No. 2 WELL
LOCATION: 1980' FNL & 660' FWL
SECTION 17, T-11-N, R-26-E



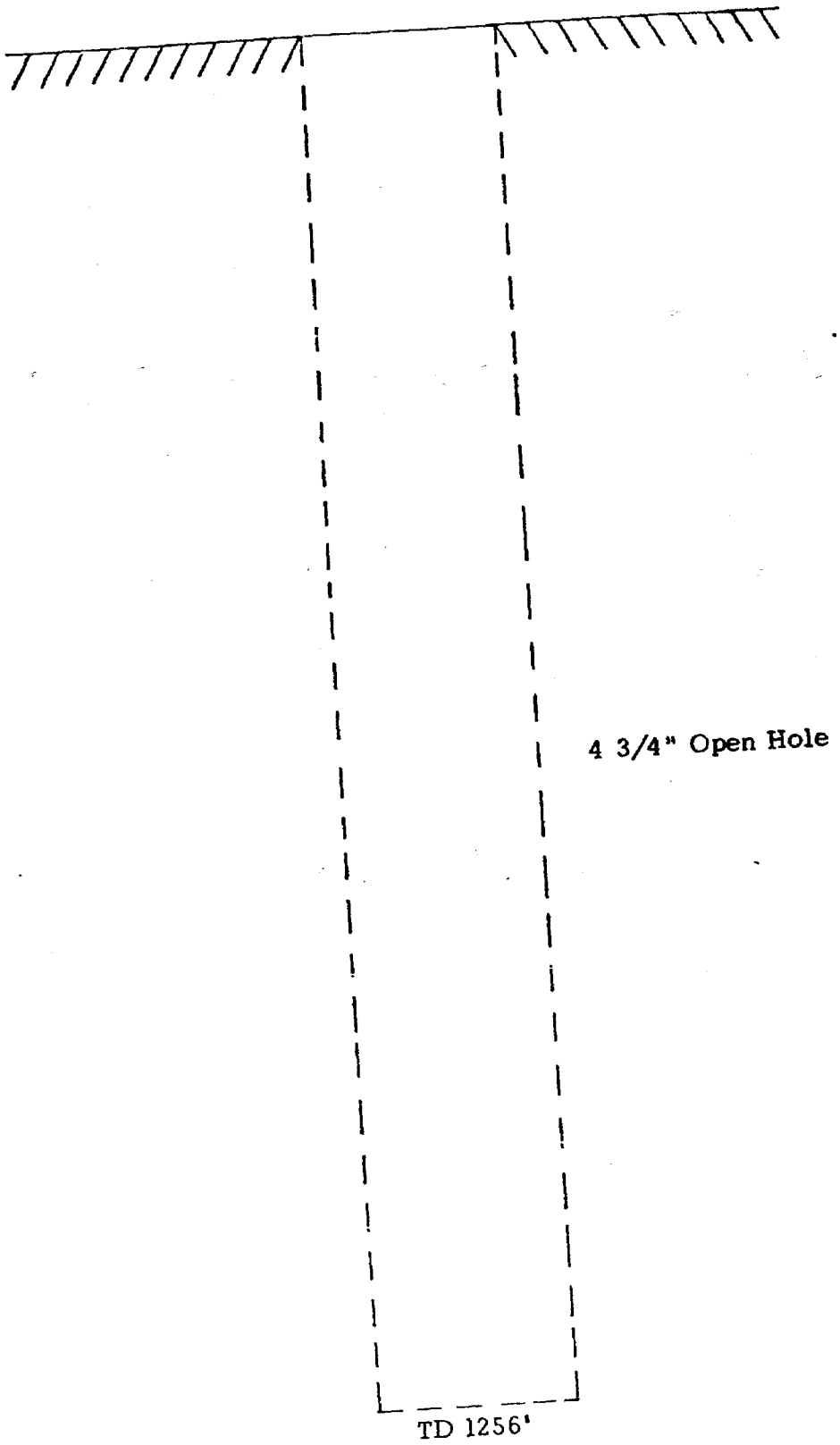
PLUGGED AND ABANDONED
PUBLIC LANDS EXPLORATION CO., INC.
KAREN STATE No. 2 WELL
LOCATION: 990' FNL & 660' FEL
SECTION 17, T-11-N, R-26-E



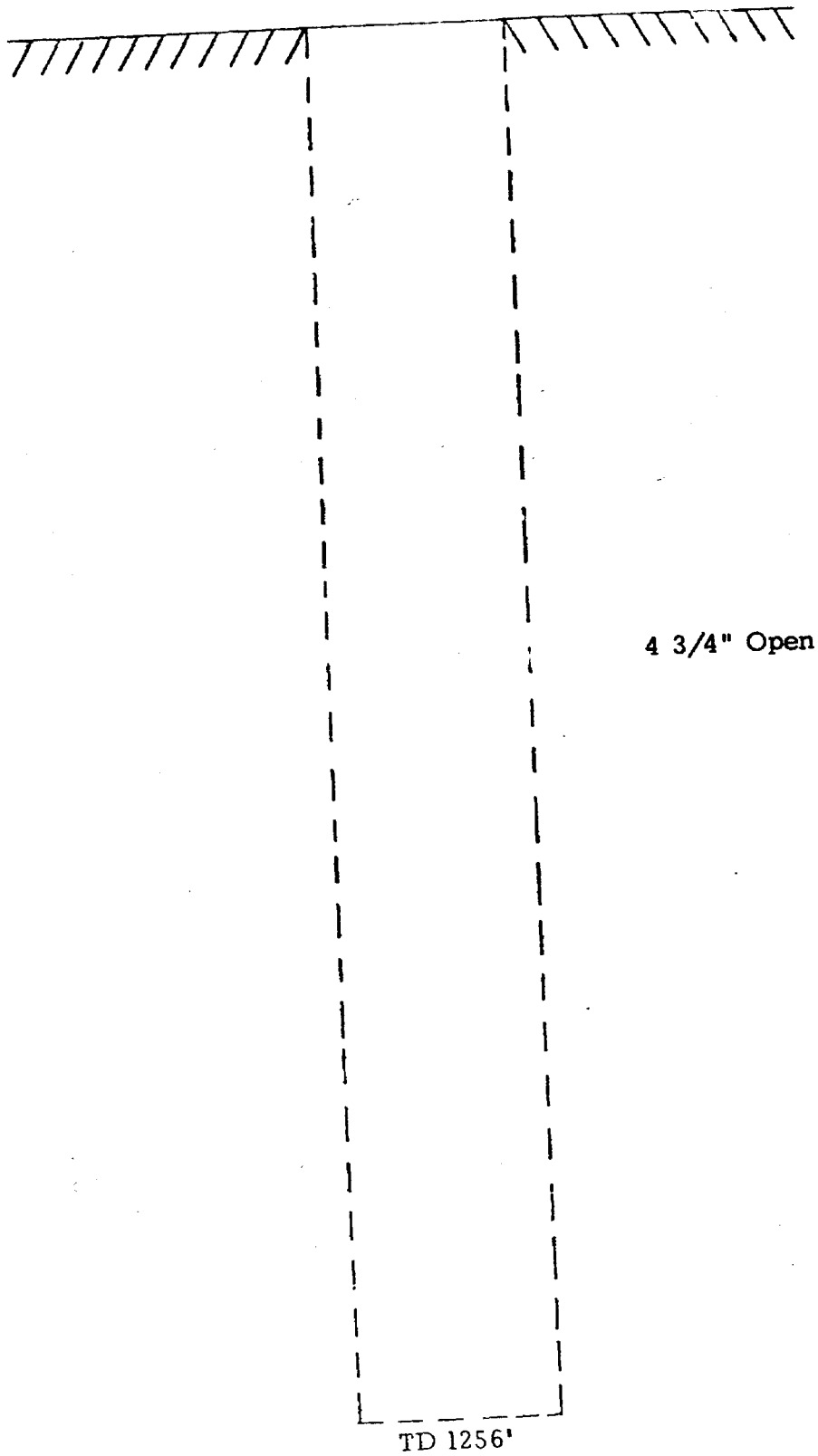
PLUGGED AND ABANDONED
WILBANKS
T4 CATTLE CO. No.1 WELL
LOCATION: 1980' NL &2000' FWL
Section 17, T-11-N, R-26-E



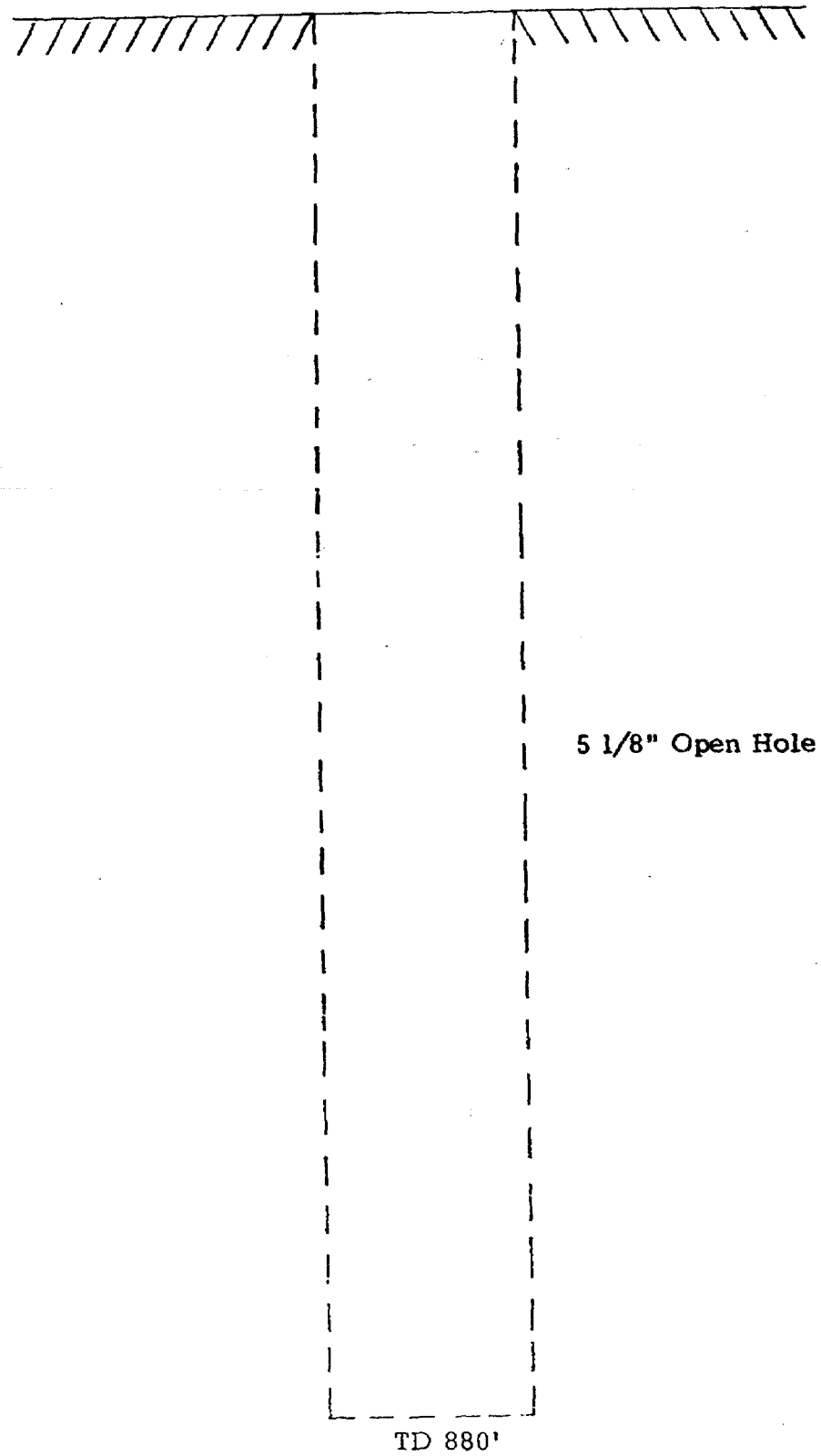
PLUGGED AND ABANDONED
HUMBLE
6 -12- 17
LOCATION: 660' FNL & 1980' FWL
Section 17, T-11-N, R-26-E



PLUGGED AND ABANDONED
HUMBLE
6-14-17 WELL
LOCATION: 660' FNL & 660' FEL
Section 17, T-11-N, R-26-E



PLUGGED AND ABANDONED
HUMBLE
~~6-33-17~~ ~~WELL~~
LOCATION: 1980' FS L & 1980' FEL
Section 17, T-11-N, R-26-E



BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
Conoco EXHIBIT NO. 7
CASE NO. 7334

APPLICATION FOR PERMIT TO UTILIZE A LINED EVAPORATION PIT

PERMIT NO. _____

New Mexico Oil Conservation Commission

Name of Operator Public Lands Exploration Company, Inc.

Address 4835 LBJ Freeway, Suite 635, Dallas, Texas 75234

Name of lease upon which evaporation pit will be located Jeanne

Location of evaporation pit: Unit Letter C Section 17 Township 11N Range 26E

Lease(s) which will be producing into pit

Pool(s) which will be producing into pit

Analysis of disposal water: Chlorides 700 ppm. Total dissolved solids NA ppm.
(If more than one pool will be producing into pit, give water analysis for each pool.)

Quantity of water to be disposed of into this pit 1 barrels per day.

Water production from these same wells six months ago 0 bpd. - Three months ago 0 bpd
(If more than one pool will be producing into pit, give water production data for each)

Method of hydrocarbon entrapment to be employed: Settling tank _____ Header pit *

If settling tank is to be used, give size and number of barrels

If header pit is to be used, give dimensions and depth

Header pit lining material _____ Thickness _____

Dimensions of Evaporation Pit ("A" and "B" on diagram) 30' x 30' x 6'

Number of square feet contained in above 900

Depth (Top of levee to floor of pit--"D" on diagram) 8'

Material to be used as liner Polyethylene Thickness 6 mils

Does manufacturer recommend protection of material from direct sunlight? Yes _____ No XX

If yes, what means will be provided to so protect the material?

Is material resistant to hydrocarbons? Yes XX No _____

Is material resistant to acids and alkalis? Yes XX No _____

Is material resistant to salts? Yes XX No _____

Is material resistant to fungus? Yes XX No _____

Is material rot-resistant? Yes XX No _____

Will joints in material be fabricated in the field? Yes _____ No XX

If yes, describe method to be used in joining material

Attach manufacturer's brochure describing the qualities of the lining material.

Describe the leakage detection system to be used

*Water discharged when softeners are regenerated.

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and further, that the subject evaporation pit and appurtenances, when installed, will be kept in good repair, and that all due diligence will be exercised in keeping the surface of the water free of oil and other debris.

Name Charles C Joy Title Agent Date 10/2/81

Approved by _____ Title _____ Date _____

Exhibit "A" Order No. R-3221-C

BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
Comm EXHIBIT NO. #3
CASE NO. 7357

APPLICATION FOR PERMIT TO UTILIZE A LINED EVAPORATION PIT

PERMIT NO. _____

New Mexico Oil Conservation Commission

Name of Operator Public Lands Exploration Company, Inc.

Address 4835 LBJ Freeway, Suite 635, Dallas, Texas 75234

Name of lease upon which evaporation pit will be located Jeanne

Location of evaporation pit: Unit Letter C Section 17 Township 11N Range 26E

Lease(s) which will be producing into pit

Pool(s) which will be producing into pit

Analysis of disposal water: Chlorides 700 ppm. Total dissolved solids NA ppm.
(If more than one pool will be producing into pit, give water analysis for each pool.)

Quantity of water to be disposed of into this pit 1/2 barrels per day.

Water production from these same wells six months ago 0 bpd. Three months ago 0 bpd
(If more than one pool will be producing into pit, give water production data for each)

Method of hydrocarbon entrapment to be employed: Settling tank _____ Header pit *

If settling tank is to be used, give size and number of barrels

If header pit is to be used, give dimensions and depth

Header pit lining material _____ Thickness _____

Dimensions of Evaporation Pit ("A" and "B" on diagram) 20' x 20' x 6'

Number of square feet contained in above 400

Depth (Top of levee to floor of pit--"D" on diagram) 8'

Material to be used as liner Polyethylene Thickness 6 mils

Does manufacturer recommend protection of material from direct sunlight? Yes _____ No XX

If yes, what means will be provided to so protect the material?

Is material resistant to hydrocarbons? Yes XX No _____

Is material resistant to acids and alkalis? Yes XX No _____

Is material resistant to salts? Yes XX No _____

Is material resistant to fungus? Yes XX No _____

Is material rot-resistant? Yes XX No _____

Will joints in material be fabricated in the field? Yes _____ No XX

If yes, describe method to be used in joining material

Attach manufacturer's brochure describing the qualities of the lining material. N/A

Describe the leakage detection system to be used *Produced water from heater treator

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and further, that the subject evaporation pit and appurtenances, when installed, will be kept in good repair, and that all due diligence will be exercised in keeping the surface of the water free of oil and other debris.

Name Charles C Joy Title Agent Date 10/2/81

Approved by _____ Title _____ Date _____

Exhibit "A" Order No. R-3221-C

September 23rd

Memo

From

FLORENE DAVIDSON
ADMINISTRATIVE SECRETARY

To Called in by Charles Joy
8/13/81

Corona Oil Company
Steam Enhanced Recovery
Project
Newkirk East
NE/4 NW/4
17-11N-26E
Guadalupe County

OIL CONSERVATION COMMISSION-SANTA FE

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
23 September 1981

EXAMINER HEARING

IN THE MATTER OF:

Application of Corona Oil Company for a pilot steam-enhanced oil recovery project, Guadalupe County, New Mexico. CASE 7354

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: W. Perry Pearce, Esq.
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant:

MR. STAMETS: The hearing will please come to order.

We'll call first case 7354.

MR. PEARCE: Application of Corona Oil Company for a pilot steam enhanced recovery project, Guadalupe County, New Mexico.

MR. STAMETS: At the request of the applicant this case will be continued till the October 7th Examiner Hearing.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 7354 heard by me on 9-23 1981.

Richard L. Stamets, Examiner
Oil Conservation Division

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
23 September 1981

EXAMINER HEARING

IN THE MATTER OF:

Application of Corona Oil Company for a pilot steam-enhanced oil recovery project, Guadalupe County, New Mexico. CASE **7354**

BEFORE: **Richard L. Stamets**

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: W. Perry Pearce, Esq.
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant:

MR. STAMETS: The hearing will please come to order.

We'll call first case 7354.

MR. PEARCE: Application of Corona Oil Company for a pilot steam enhanced recovery project, Guadalupe County, New Mexico.

MR. STAMETS: At the request of the applicant this case will be continued till the October 7th Examiner Hearing.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of ability.

Sally W. Boyd C.S.R.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. _____, heard by me on _____ 19____.

_____, Examiner
Oil Conservation Division

CHARLES C. JOY
702 Hermosa Dr.
Artesia, New Mexico 88210

Phone
(505) 746-2480

August 17, 1981

Oil Conservation Division
Attn: Florene Davidson
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: Pilot Steam Enhanced
Oil Recovery Project
Guadalupe Co., N. M.

Case 7354

Dear Ms. Davidson:

A hearing for approval to conduct a Pilot Steam Enhanced Oil Recovery (EOR) project is requested for September 23, 1981, on behalf of Corona Oil Co., 4835 LBJ Freeway, Suite 635, Dallas, Texas, 75234.

Project will be located in NE/4 NW/4 of Section 17-T11N-R26E. Corona plans to use two existing wells and drill three additional wells to complete a five spot pattern. Steam will be injected into sandstones of the Santa Rosa formation of Triassic age.

Sincerely,

Charles C Joy

Charles C. Joy

CCJ:jj

cc: Paul Creson, President, Corona Oil
Dave Martin, PRRC, Socorro, N. M.
George L. Scott, Roswell, N. M.

Docket No. 31-81

Dockets Nos. 33-81 and 34-81 are tentatively set for October 21 and November 4, 1981. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: COMMISSION HEARING - MONDAY - OCTOBER 5, 1981

OIL CONSERVATION COMMISSION - 9 A.M.
ROOM 205, STATE LAND OFFICE BUILDING,
SANTA FE, NEW MEXICO

CASE 7372: Application of Navajo Refining Company for a determination of preference to purchase state royalty oil pursuant to Section 19-10-68, NMSA, 1978.

****

Docket No. 32-81

DOCKET: EXAMINER HEARING - WEDNESDAY - OCTOBER 7, 1981

9 A.M. - OIL CONSERVATION DIVISION CONFERENCE ROOM
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Nutter, Examiner, or Richard L. Stamets, Alternate Examiner:

CASE 7363: Application of Gulf Oil Corporation for a unit agreement, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks approval for the East White Ranch Unit Area, comprising 1920 acres, more or less, of Federal lands in Township 13 South, Range 30 East.

CASE 7364: Application of Gulf Oil Corporation for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the East Chosa Draw Unit Area comprising 5120 acres, more or less, of Federal and State lands in Township 25 South, Range 25 East.

CASE 7365: Application of Yates Petroleum Corporation for the amendment of Order R-6406, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-6406, to permit recompletion of its State "JM" No. 2 Well, drilled at an unorthodox Morrow location 660 feet from the South line and 660 feet from the East line of said Section 25, Township 18 South, Range 24 East, in any and all Wolfcamp and Pennsylvanian pays in said well.

CASE 7354: (Continued from the September 23, 1981, Examiner Hearing)

Application of Corona Oil Company, for a pilot steam-enhanced oil recovery project, Guadalupe County, New Mexico.
Applicant, in the above-styled cause, seeks authority to institute a pilot steam-enhanced oil recovery project in the Santa Rosa formation by using two existing wells and three additional wells to be drilled to complete a five spot pattern located in the NE/4 NW/4 of Section 17, Township 11 North, Range 26 East.

CASE 7359: (Continued from the September 23, 1981 Examiner Hearing)

Application of Energy Reserves Group for creation of a new gas pool and an unorthodox location, Roosevelt County, New Mexico.
Applicant, in the above-styled cause, seeks creation of a new Cisco gas pool for its Miller Com Well No. 1, located in Unit M of Section 12, Township 6 South, Range 33 East.

Applicant further seeks approval of an unorthodox location for its Miller "A" Well No. 1-Y, to be drilled 1800 feet from the South line and 1700 feet from the East line of Section 11 of the same township. The S/2 of said Section 11 to be dedicated to the well.

CASE 7366: Application of Read & Stevens, Inc., for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Strawn, Atoka and Morrow formations underlying the W/2 of Section 19, Township 23 South, Range 28 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7367: Application of Anadarko Production Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp and Pennsylvanian formations underlying the N/2 of Section 12, Township 19 South, Range 25 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7368: Application of Doyle Hartman for an unorthodox gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of a well to be drilled 1980 feet from the South line and 990 feet from the West line of Section 17, Township 24 South, Range 37 East, Jalmat Gas Pool, the S/2 of said Section 17 to be dedicated to the well.

CASE 7369: Application of Morris R. Antweil for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Blinebry and Drinkard formations underlying the NW/4 SE/4 of Section 8, Township 20 South, Range 38 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7370: Application of Southland Royalty Company for compulsory pooling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pictured Cliffs and Fruitland formations, East Blanco Field, underlying the NW/4 of Section 35, Township 30 North, Range 4 West, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7023: (Reopened and Readvertised)

In the matter of case 7023 being reopened pursuant to the provisions of Order No. R-6489, which order created the Stingray-Pennsylvanian Pool and promulgated special rules therefor, including provision for 80-acre spacing. All interested parties may appear and show cause why said pool should not be developed on 40-acre proration units.

CASE 7347: (Continued and Readvertised)

Application of Tenneco Oil Company for an unorthodox gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox Pennsylvanian location of a well to be drilled 660 feet from the South line and 860 feet from the West line of Section 20, Township 16 South, Range 34 East, Kemnitz Field, the W/2 of said Section 20 to be dedicated to the well.

CASE 7371: In the matter of the hearing called by the Oil Conservation Division on its own motion for an order creating, redesignating, extending vertical limits, and contracting and extending horizontal limits of certain pools in Chaves, Eddy, Lea, and Roosevelt Counties, New Mexico.

(a) CREATE a new pool in Lea County, New Mexico, classified as an oil pool for Wolfcamp production and designated as the Antelope Ridge-Wolfcamp Pool. The discovery well is Coquina Oil Corporation Alexander Well No. 1 located in Unit G of Section 10, Township 24 South, Range 34 East, NMPM. Said pool would comprise:

TOWNSHIP 24 SOUTH, RANGE 34 EAST, NMPM
Section 10: NE/4

(b) CREATE a new pool in Lea County, New Mexico, classified as an oil pool for Bone Spring production and designated as the Brinninstool-Bone Spring Pool. The discovery well is Amoco Production Company State IK Well No. 1 located in Unit C of Section 10, Township 23 South, Range 33 East, NMPM. Said pool would comprise:

TOWNSHIP 23 SOUTH, RANGE 33 EAST, NMPM
Section 10: NW/4

(c) CREATE a new pool in Lea County, New Mexico, classified as an oil pool for Wolfcamp production and designated as the Brinninstool-Wolfcamp Pool. The discovery well is Amoco Production Company Federal H Well No. 1 located in Unit L of Section 26, Township 23 South, Range 33 East, NMPM. Said pool would comprise:

TOWNSHIP 23 SOUTH, RANGE 33 EAST, NMPM
Section 26: SW/4

(d) CREATE a new pool in Eddy County, New Mexico, classified as a gas pool for Wolfcamp production and designated as the Collins Ranch-Wolfcamp Gas Pool. The discovery well is the Yates Petroleum Corporation State DF Well No. 1 located in Unit D of Section 35, Township 17 South, Range 24 East, NMPM. Said pool would comprise:

TOWNSHIP 17 SOUTH, RANGE 24 EAST, NMPM
Section 35: N/2

(e) CREATE a new pool in Lea County, New Mexico, classified as a gas pool for Atoka production and designated as the Fairview Mills-Atoka Gas Pool. The discovery well is the Enserch Exploration, Inc. T. G. Bates Well No. 1 located in Unit G of Section 14, Township 25 South, Range 34 East, NMPM. Said pool would comprise:

TOWNSHIP 25 SOUTH, RANGE 34 EAST, NMPM
Section 14: N/2

(f) CREATE a new pool in Lea County, New Mexico, classified as an oil pool for Wolfcamp production and designated as the Gem-Wolfcamp Pool. The discovery well is the Amoco Production Company Federal AM Well No. 1 located in Unit E of Section 26, Township 19 South, Range 32 East, NMPM. Said pool would comprise:

TOWNSHIP 19 SOUTH, RANGE 32 EAST, NMPM
Section 26: NW/4

(g) CREATE a new pool in Lea County, New Mexico, classified as an oil pool for Tubb production and designated as the Hardy-Tubb Pool. The discovery well is the Conoco Inc. State F Well No. 10 located in Unit V of Section 1, Township 21 South, Range 36 East, NMPM. Said pool would comprise:

TOWNSHIP 21 SOUTH, RANGE 36 EAST, NMPM
Section 1: SW/4

(h) CREATE a new pool in Chaves County, New Mexico, classified as a gas pool for Upper Pennsylvanian production and designated as the Moriah-Upper Pennsylvanian Gas Pool. The discovery well is the Tom L. Ingram Moriah Well No. 2 located in Unit J of Section 7, Township 10 South, Range 29 East, NMPM. Said pool would comprise:

TOWNSHIP 10 SOUTH, RANGE 29 EAST, NMPM
Section 7: S/2

(i) CREATE a new pool in Chaves County, New Mexico, classified as a gas pool for Atoka production and designated as the Moriah-Atoka Gas Pool. The discovery well is the Tom L. Ingram Moriah Well No. 1 located in Unit J of Section 7, Township 10 South, Range 29 East, NMPM. Said pool would comprise:

TOWNSHIP 10 SOUTH, RANGE 29 EAST, NMPM
Section 7: S/2

(j) CREATE a new pool in Lea County, New Mexico, classified as a gas pool for Queen production and designated as the West Reeves-Queen Gas Pool. The discovery well is the Collier Energy, Inc. Mesa State Well No. 1 located in Unit F of Section 20, Township 18 South, Range 35 East, NMPM. Said pool would comprise:

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM
Section 20: NW/4

(k) CONTRACT the Cato-San Andres Pool in Chaves County, New Mexico, by the deletion of the following described area:

TOWNSHIP 8 SOUTH, RANGE 31 EAST, NMPM
Section 5: NW/4 SW/4

(l) CONTRACT the East Weir-Blinebry Pool in Lea County, New Mexico, by the deletion of the following described area:

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM
Section 7: N/2 N/2
Section 8: N/2 N/2
Section 9: W/2 NW/4

(m) EXTEND the vertical limits of the Cave-Grayburg Pool in Eddy County, New Mexico, to include the San Andres formation and redesignate said pool as the Cave-Grayburg-San Andres Pool.

(n) EXTEND the Antelope Sink-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 24 EAST, NMPM
Section 33: S/2

TOWNSHIP 19 SOUTH, RANGE 24 EAST, NMPM
Section 4: E/2

(o) EXTEND the Atoka-Yeso Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 26 EAST, NMPM
Section 27: S/2 NE/4, S/2 NW/4, N/2 SE/4 and N/2 SW/4

(p) EXTEND the Baum-Upper Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 13 SOUTH, RANGE 32 EAST, NMPM
Section 23: SW/4

(q) EXTEND the Blinebry Oil and Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
Section 16: SW/4

(r) EXTEND the Boyd-Morrow Gas Pool in Eddy County, New Mexico to include therein:

TOWNSHIP 18 SOUTH, RANGE 25 EAST, NMPM
Section 34: W/2

(s) EXTEND the Bull's Eye-San Andres Pool in Chaves County, New Mexico , to include therein:

TOWNSHIP 8 SOUTH, RANGE 28 EAST, NMPM
Section 12: NE/4 SW/4 and E/2 NW/4

(t) EXTEND the East Crossroads-San Andres Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 10 SOUTH, RANGE 37 EAST, NMPM
Section 7: All

(u) EXTEND the Crow Flats-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 16 SOUTH, RANGE 27 EAST, NMPM
Section 25: E/2
Section 36: E/2

(v) EXTEND the Culebra Bluff-Atoka Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 23 SOUTH, RANGE 28 EAST, NMPM
Section 15: W/2

(w) EXTEND the South Culebra Bluff-Bone Spring Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 23 SOUTH, RANGE 28 EAST, NMPM
Section 27: N/2 SE/4

(x) EXTEND the D-K Abo pool in Lea County, New Mexico, to include therein:

TOWNSHIP 20 SOUTH, RANGE 39 EAST, NMPM
Section 31: NW/4

(y) EXTEND the Happy Valley-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 26 EAST, NMPM
Section 16: E/2
Section 20: N/2

(z) EXTEND the East Hightower-Upper Pennsylvanian Pool in Lea County, New Mexico to include therein:

TOWNSHIP 12 SOUTH, RANGE 34 EAST, NMPM
Section 31: NE/4 and E/2 NW/4

(aa) EXTEND the Imperial-Tubb Drinkard Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 23 SOUTH, RANGE 37 EAST, NMPM
Section 27: NW/4

(bb) EXTEND the Jalmat-Yates-Seven Rivers Pool in Lea County, New Mexico to include therein:

TOWNSHIP 22 SOUTH, RANGE 35 EAST, NMPM
Section 15: NE/4

(cc) EXTEND the Kemnitz-Morrow Gas Pool in Lea County, New Mexico,to include therein:

TOWNSHIP 16 SOUTH, RANGE 34 EAST, NMPM
Section 9: N/2

(dd) EXTEND the Linda-San Andres Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 6 SOUTH, RANGE 26 EAST, NMPM
Section 29: NW/4

(ee) EXTEND the North Loving-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 23 SOUTH, RANGE 28 EAST, NMPM
Section 5: S/2
Section 8: N/2
Section 9: W/2

(ff) EXTEND the Northeast Lovington-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 16 SOUTH, RANGE 37 EAST, NMPM
Section 18: NW/4

(gg) EXTEND the Malaga-Atoka Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 24 SOUTH, RANGE 28 EAST, NMPM
Section 15: N/2

(hh) EXTEND the Midway-Devonian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 37 EAST, NMPM
Section 8: NW/4

(ii) EXTEND the West Milnesand-San Andres Pool in Roosevelt County, New Mexico, to include therein:

TOWNSHIP 8 SOUTH, RANGE 34 EAST, NMPM
Section 17: SE/4

(jj) EXTEND the Penasco Draw-San Andres-Yeso Associated Pool in Eddy County, New Mexico to include therein:

TOWNSHIP 18 SOUTH, RANGE 25 EAST, NMPM
Section 32: S/2 NE/4 and SE/4
Section 33: S/2 NW/4 and SW/4

TOWNSHIP 19 SOUTH, RANGE 25 EAST, NMPM
Section 4: NW/4
Section 5: N/2 NE/4 and SE/4 NE/4

(kk) EXTEND the Quail Ridge-Morrow Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 34 EAST, NMPM
Section 19: N/2

(ll) EXTEND THE Querecho Plains-Lower Bone Spring Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 32 EAST, NMPM
Section 28: S/2

(mm) EXTEND the Rocky Arroyo-Wolfcamp Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 22 EAST, NMPM
Section 9: SW/4
Section 16: NW/4

(nn) EXTEND the South Salt Lake-Morrow Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 21 SOUTH, RANGE 32 EAST, NMPM
Section 7: E/2
Section 18: N/2

(oo) EXTEND the West Sand Dunes-Morrow Gas Pool in Eddy County,New Mexico, to include therein:

TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM
Section 32: N/2

(pp) REDESIGNATE the Sand Ranch-Atoka Gas Pool in Chaves County, New Mexico, to the Sand Ranch-Morrow Gas Pool, as said pool is producing from the Morrow formation rather than the Atoka, and EXTEND the horizontal limits of said pool to include therein:

TOWNSHIP 10 SOUTH, RANGE 29 EAST, NMPM
Section 14: S/2

(qq) EXTEND the San Simon-Wolfcamp Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 35 EAST, NMPM
Section 6: SE/4
Section 7: E/2

(rr) EXTEND the Sawyer-San Andres Associated Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 9 SOUTH, RANGE 38 EAST, NMPM
Section 7: SW/4

(ss) EXTEND the Spencer-San Andres Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 36 EAST, NMPM
Section 23: SE/4

tt) EXTEND the Tomahawk-San Andres Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 7 SOUTH, RANGE 31 EAST, NMPM
Section 36: NW/4

(uu) EXTEND the Tom-Tom-San Andres Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 8 SOUTH, RANGE 31 EAST, NMPM
Section 5: S/2 SW/4
Section 8: N/2 NW/4

(vv) EXTEND the Tonto-Wolfcamp Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 33 EAST, NMPM
Section 27: E/2

(ww) EXTEND the Turkey Track-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 29 EAST, NMPM
Section 3: S/2

(xx) EXTEND the Wantz-Abo Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
Section 10: NE/4

(yy) EXTEND the North Young-Bone Spring Pool in Lea County, New Mexico to include therein:

TOWNSHIP 18 SOUTH, RANGE 32 EAST, NMPM
Section 10: NE/4

Case 7354

9-23-81

Chas Joy notified these locations can not be approved without hearing. (See Rules 104-B, III and 104-C, I.) There are only 165' between wells — need 330'. #1 & #3 approved already. He was advised to bring it up at hearing on 10/1/81 — Case 7354

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-102
Revised 10-1-78

All distances must be from the outer boundaries of the Section.

Operator	Lease	Well No.

Unit Letter	Section	Township	Range	County
C	17	11-N	26-E	Guadalupe

Actual Footage Location of Well:
feet from the line and feet from the line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
			Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

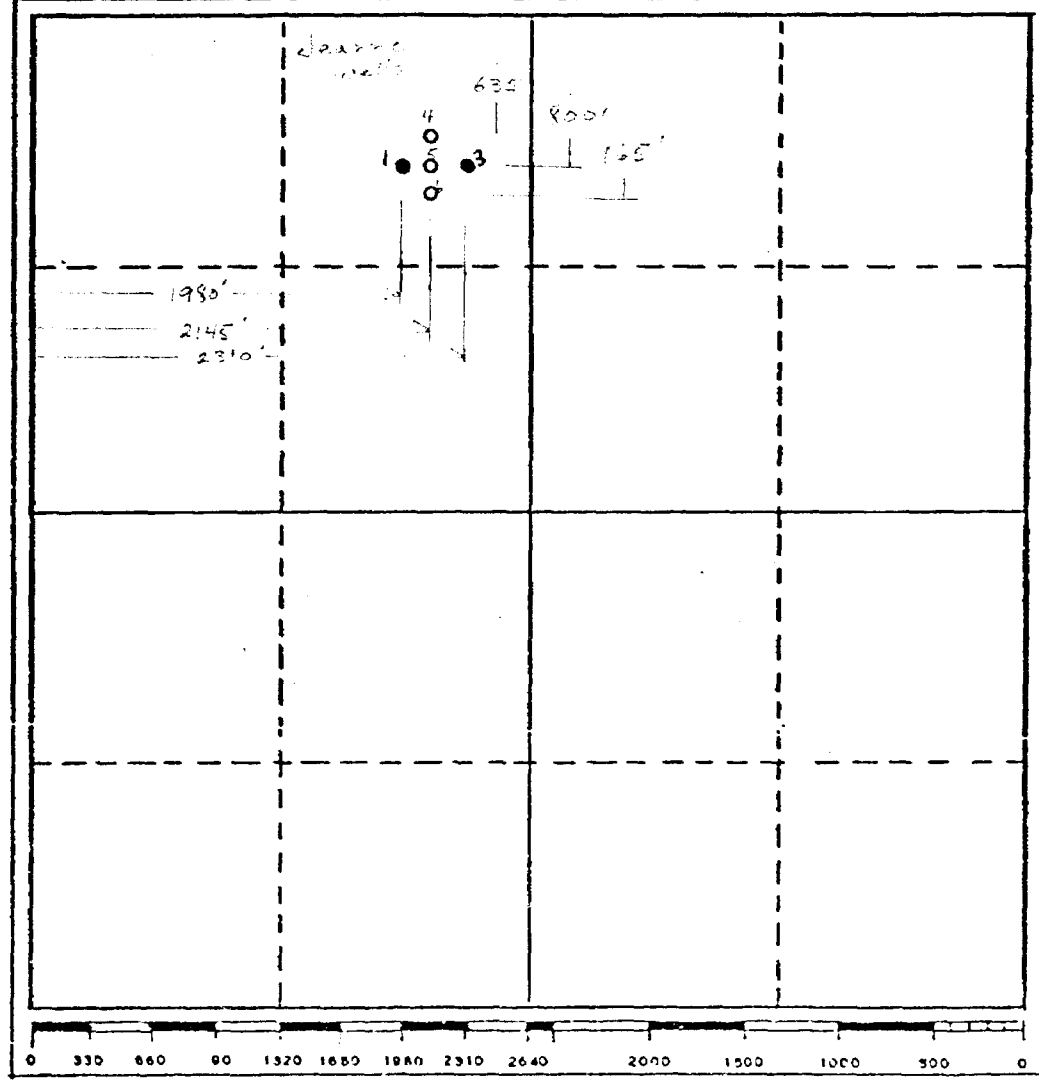
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling. etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Division.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name

Position

Company

Date

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed

Registered Professional Engineer and/or Land Surveyor:

Certificate No.

Memo

From

R. L. STAMETS
Technical
Support Chief

To Florene

Send copy of Oct 7
Docket to.

Charles Joy
Box 1256
Artesia, NM 88211-1256

Wants Case 7354
continued to Oct
7 hearing.

Dockets Nos. 31-81 and 32-81 are tentatively set for October 7, and October 21, 1981. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY -SEPTEMBER 23, 1981

9 A.M. - OIL CONSERVATION DIVISION CONFERENCE ROOM
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Richard L. Stamets, Examiner or Daniel S. Nutter, Alternate Examiner:

CASE 7353: Application of Texaco, Inc., for the amendment of Division Order No. R-5530, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-5530, which authorized its Central Vacuum Unit Area Pressure Maintenace Project, to increase the total project area allowable, or as an alternative, to reclassify the project as a waterflood project.

CASE 7354: Application of Corona Oil Company, for a pilot steam-enhanced oil recovery project, Guadalupe County, New Mexico.
Applicant, in the above-styled cause, seeks authority to institute a pilot steam-enhanced oil recovery project in the Santa Rosa formation by using two existing wells and three additional wells to be drilled to complete a five spot pattern located in the NE/4 NW/4 of Section 17, Township 11 North, Range 26 East.

CASE 7355: Application of Doyle Hartman for directional drilling and an unorthodox location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill his Bates Well No. 3, the surface location of which is 1635 feet from the South line and 1210 feet from the West line of Section 20, Township 25 South, Range 37 East, in such a manner as to bottom it at a depth of 3500 feet in the Jalmat Gas Pool at an unorthodox location 2310 feet from the South line and 1650 feet from the West line of Section 20. The SW/4 of said Section 20 would be dedicated to the well.

CASE 7356: Application of S & I Oil Company for compulsory pooling, San Juan County, New Mexico.
Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the W/2 SW/4 of Section 12, Township 29 North, Range 15 West, Cha Cha-Gallup Oil Pool, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7357: Application of Union Oil Company of California for compulsory pooling, Lea County, New Mexico.
Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Atoka and Morrow formations underlying the W/2 of Section 16, Township 22 South, Range 33 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7343: (Continued from September 9, 1981, Examiner Hearing)

Application of Caribou Four Corners, Inc. for compulsory pooling, San Juan County, New Mexico.
Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Cha Cha Gallup Oil Pool underlying the E/2 NW/4 of Section 18, Township 29 North, Range 14 West, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7358: Application of John Yuronka for compulsory pooling, Lea County, New Mexico.
Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Langley Mattix Pool underlying the SW/4 of Section 6, Township 23 South, Range 37 East, to form four 40-acre tracts, each to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said wells and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the wells, and a charge for risk involved in drilling said wells.

CASE 7359: Application of Energy Reserves Group for creation of a new gas pool and an unorthodox location, Roosevelt County, New Mexico.

Applicant, in the above-styled cause, seeks creation of a new Cisco gas pool for its Miller Com Well No. 1, located in Unit M of Section 11, Township 6 South, Range 33 East.

Applicant further seeks approval of an unorthodox location for its Miller "A" Well No. 1-Y, to be drilled 1800 feet from the South line and 1700 feet from the East line of Section 11 of the same township. The S/2 of said Section 11 to be dedicated to the well.

CASE 7345: (Continued from September 9, 1981, Examiner Hearing)

Application of Bass Enterprises Production Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Lovington Penn Pool underlying the N/2 NE/4 of Section 13, Township 16 South, Range 36 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7360: Application of L. J. Buck for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause seeks authority to dispose of produced salt water into the Seven Rivers formation in the interval from 3221 feet to 3250 feet in his Monco Well No. 2 in Unit M of Section 25, Township 25 South, Range 36 East.

CASE 7352: (Continued from September 9, 1981 Examiner Hearing)

Application of Yates Petroleum Corporation for designation of a tight formation, Eddy County, New Mexico. Applicant, in the above-styled cause, pursuant to Section 107 of the Natural Gas Policy Act 18-CFR Section 271.701-705, seeks the designation as a tight formation of the Permo-Penn and formation underlying all of the following townships:

Township 17 South, Ranges 24 thru 26 East;

18 South, 24 and 25 East;

19 South, 23 thru 25 East;

20 South, 21 thru 24 East;

20½ South, 21 and 22 East;

21 South, 21 and 22 East;

Also Sections 1 thru 12 in 22 South, 21 and 22 East,

All of the above containing a total of 315,000 acres more or less.

CASE 7329: (Readvertised)

Application of Loco Hills Water Disposal Company for an exception to Order No. R-3221, Eddy County, New Mexico

Applicant, in the above-styled cause, seeks an exception to Order No. R-3221 to permit the commercial disposal of produced brine into several unlined surface pits located in the N/2 SW/4 SW/4 of Section 16, Township 17 South, Range 30 East.

Dockets Nos. 31-81 and 32-81 are tentatively set for October 7, and October 21, 1981. Applications for hearing must be filed at least [illegible] prior to hearing date.

DOCKET: [illegible] FOR HEARING - [illegible] AY - SEPTEMBER 2, 1981

9 A.M. - OIL CONSERVATION DIVISION - MORGAN HALL
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

CASE 7116: (DE NOVO)

Application of Southland Royalty Company for designation of a tight formation, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks the designation of the Dakota formation underlying portions of Township 31 and 32 North, Ranges 10, 11, 12, and 13 west, containing 93,860 acres, more or less, as a tight formation pursuant to Section 107 of the Natural Gas Policy Act and 18 CFR Section 271.701-705.

Upon application of Consolidated Oil & Gas, Inc., this case will be heard De Novo pursuant to the provisions of Rule 1220.

CASE 7361: Application of Southland Royalty Company for designation of a tight formation, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks the designation of the Dakota formation underlying all or portions of Township 31 North, Ranges 10 and 11 West, and Township 32 North, Ranges 10, 11, 12, and 13 West, containing 92,871 acres more or less, as a tight formation pursuant to Section 107 of the Natural Gas Policy Act and 18 CFR Section 271. 701-705.

CASE 7362: Application of R. A. Mendenhall Associates, Ltd., for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Delaware Mountain Group formation underlying the NW/4 SE/4 of Section 10, Township 22 South, Range 27 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

DOC

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

CASE NO. 7354
Order No. R-6868

APPLICATION OF ~~PUBLIC LANDS EXPLORATION, INC.~~ CORONA OIL COMPANY FOR A PILOT STEAM ENHANCED OIL RECOVERY PROJECT, GUADALUPE COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on October 7, 1981, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this_____day of January, 1982, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, ~~Public Lands Exploration, Inc.~~ Corona Oil Company, seeks authority to institute a pilot steam enhanced oil recovery project on its Jeanne Lease, Undesignated Santa Rosa Pool, by the injection of approximately 150 barrels of water as steam into the "O'Connell Sand" zone of the Santa Rosa formation through its Jeanne Well No. 5 located approximately 800 feet from the North line and 2145 feet from the West line (in Unit C) of Section 17, Township 11 North, Range 26 East, NMPM, Guadalupe County, New Mexico.

(3) That the wells in the project area are incapable of commercial production due to the low viscosity of the oil found in the pay sand and the lack of any significant natural drive mechanism.

(4) That the proposed enhanced recovery project may result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(5) That the operator should take all steps necessary to ensure that the injected fluid enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

(6) That the applicant shall take such steps as may be necessary to ensure that the operation of the steam injection project does not contaminate surface or subsurface waters or damage nearby properties.

(7) That the injection wells or injection pressurization system should be so equipped as to limit injection pressure at the wellhead to no more than 475 psi, but the Division Director should have authority to increase said pressure limitation, should circumstances warrant.

(8) That the applicant proposes to drill and complete four new wells as producers, all located, respectively, at orthodox and unorthodox locations within the NE/4 NW/4 of said Section 17 as follows:

Jeanne Lease Well No.	Location
1	800 feet from the North line and 1980 feet from the East line
3	800 feet from the North line and 2310 feet from the East line
4	635 feet from the North line and 2145 feet from the East line
6	965 feet from the North line and 2145 feet from the East line

(9) That the applicant should submit monthly reports of injection volumes, pressures, temperatures and production in a form acceptable to the Division.

(10) That the subject application should be approved and the project should be governed by the provisions of this order and of Rules 702 through 708 of the Division Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, ~~Public Lands Exploration, Inc.~~ Corona Oil Company, is hereby authorized to institute a pilot steam enhanced recovery

project on its Jeanne Lease, Undesignated Santa Rosa Pool, by the injection of water into the "O'Connell Sand" zone of the Santa Rosa formation through its Jeanne Well No. 5 located approximately 800 feet from the North line and 2145 feet from the West line of Section 17, Township 11 North, Range 26 East, NMPM, Guadalupe County, New Mexico.

(2) That injection into said well shall be through internally coated tubing, set in a packer at approximately 660 feet; that the casing-tubing annulus of each injection well shall, at the option of the applicant, be loaded with an inert fluid and shall be equipped with an approved pressure gauge or attention-attracting leak detection device.

(3) That the operator shall immediately notify the supervisor of the Division's Santa Fe District 4 office of the failure of the tubing or packer in the injection well, the leakage of water or oil from or around any producing well, or the leakage of water or oil from any plugged and abandoned well within the project area and shall take such timely steps as may be necessary or required to correct such failure or leakage.

(4) That the injection well herein authorized and/or the injection pressurization system shall be so equipped as to limit injection pressure at the wellhead to no more than 475 psi, provided however, the Division Director may authorize a higher surface injection pressure upon satisfactory showing that such pressure will not result in fracturing of the confining strata.

(5) That the applicant is further authorized to drill and complete four new wells as producers, all located, respectively, at orthodox and unorthodox locations within the NE/4 NW/4 of said Section as follows:

Jeanne Lease Well No.	Location
1	800 feet from the North line and 1980 feet from the East line
3	800 feet from the North line and 2310 feet from the East line
4	635 feet from the North line and 2145 feet from the East line
6	965 feet from the North line and 2145 feet from the East line

(6) That the subject project is hereby designated the ~~Public Lands Exploration, Inc~~ Corona Oil Company. Santa Rosa Enhanced Recovery Project and shall be governed by the provisions of Rules 702 through 708 of the Division Rules and Regulations.

(7) That the applicant shall operate said project in such a manner as to ensure against contamination of surface or subsurface waters or damage to nearby properties.

(8) That monthly progress reports of the project herein authorized shall be submitted to the Division in a form acceptable to the Division.

(9) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

JOE D. RAMEY,
Director

S E A L

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

CASE NO. 7354
Order No. R-6868

APPLICATION OF PUBLIC LANDS EXPLORATION, INC. FOR A PILOT STEAM ENHANCED OIL RECOVERY PROJECT, GUADALUPE COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on October 7, 1981, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter

NOW, on this _____ day of December, 1981, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Public Lands Exploration, Inc. seeks authority to institute a pilot steam enhanced oil recovery project on its Jeanne Lease, Undesignated Santa Rosa Pool, by the injection of approximately 150 barrels of water as steam into the "O'Connell Sand" zone of the Santa Rosa formation through its Jeanne Well No. 5 located approximately 800 feet from the North line and 2145 feet from the West line (in Unit C) of Section 17, Township 11 North, Range 26 East, NMPM, Guadalupe County, New Mexico.

(3) That the wells in the project area are incapable of commercial production due to the low viscosity of the oil found in the pay sand and the lack of any significant natural drive mechanism.

(4) That the proposed enhance recovery project may result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(5) That the operator should take all steps necessary to ensure that the injected fluid enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

(6) That the applicant shall take such steps as may be necessary to ensure that the operation of the steam injection project does not contaminate surface or subsurface waters or damage nearby properties.

(7) That the injection wells or injection pressurization system should be so equipped as to limit injection pressure at the wellhead to no more than 475 psi, but the Division Director should have authority to increase said pressure limitation, should circumstances warrant.

(8) That the applicant proposes to drill and complete four new wells ~~(Nos. __ and __)~~ as producers, ~~to complete two existing wells (Nos. __ and __) as producers, and to operate one observation well (No. __~~ all located, respectively, at orthodox and unorthodox locations within the NE/4 NW/4 of said Section 17 as follows:

Jeanne Lease Well No.	Location
1	800 feet from the North line and 1980 feet from the East line
3	800 feet from the North line and 2310 feet from the East line
4	635 feet from the North line and 2145 feet from the East line
6	965 feet from the North line and 2145 feet from the East line
	~~__ feet from the North line and __ feet from the East line~~

(9) That the applicant should submit monthly reports of injection volumes, pressures, temperatures and production in a form acceptable to the Division.

(10) That the subject application should be approved and the project should be governed by the provisions of this order and of Rules 702 through 708 of the Division Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Public Lands Exploration, Inc., is hereby authorized to institute a pilot steam enhanced recovery project on its Jeanne Lease, Undesignated Santa Rosa Pool, by the injection of water into the "O'Connell Sand" zone of the Santa Rosa formation through its Jeanne Well No. 5, located approximately 800 feet from the North line and 2145 feet from the West line of Section 17, Township 11 North, Range 26 East, NMPM, Guadalupe County, New Mexico.

(2) That injection into said well shall be through internally coated tubing, set in a packer at approximately 440 feet; that the casing-tubing annulus of each injection well shall, at the option of the applicant, be loaded with an inert fluid and shall be equipped with an approved pressure gauge or attention-attracting leak detection device.

(3) That the operator shall immediately notify the supervisor of the Division's Santa Fe District 4 office of the failure of the tubing or packer in the injection well, the leakage of water or oil from or around any producing well, or the leakage of water or oil from any plugged and abandoned well within the project area and shall take such timely steps as may be necessary or required to correct such failure or leakage.

(4) That the injection well herein authcrized and/or the injection pressurization system shall be so equipped as to limit injection pressure at the wellhead to no more than 475 psi, provided however, the Division Director may authorize a higher surface injection pressure upon satisfactory showing that such pressure will not result in fracturing of the confining strata.

(5) That the applicant is further authorized to drill and complete (at orthodox and unorthodox locations) four new wells as producers, ~~recomplete two existing wells as producers, and to operate one observation well,~~ all located, respectively, within the NE/4 NW/4 of said Section as follows:

Jeanne Lease Well No.	Location
1	800 feet from the North line and 1980 feet from the East line
3	800 feet from the North line and 2310 feet from the East line
4	635 feet from the North line and 2145 feet from the East line

State Lease Well No.	Location
6	965 feet from the North line and 2145 feet from the East line ~~feet from the North line and feet from the East line~~

(6) That the subject project is hereby designated the Public Lands Exploration, Inc. Santa Rosa Enhanced Recovery Project and shall be governed by the provisions of Rules 702 through 708 of the Division Rules and Regulations.

(7) That the applicant shall operate said project in such a manner as to ensure against contamination of surface or subsurface waters or damage to nearby properties.

(8) That monthly progress reports of the project herein authorized shall be submitted to the Division in a form acceptable to the Division.

(9) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

JOE D. RAMEY
Director

S E A L

fd/