NEW MEXICO OIL CONSERVATION DIVISION

STATE OF NEW MEXICO

CASE NOS. 10465 and 10466

(Consolidated)

IN THE MATTER OF:

The Application of Marbob Energy Corporation for saltwater disposal, Eddy County, New Mexico.

BEFORE:

MICHAEL E. STOGNER

Hearing Examiner

State Land Office Building

April 16, 1992

REPORTED BY:

DEBBIE VESTAL
Certified Shorthand Reporter
for the State of New Mexico

ORIGINAL

NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING

SANTA FE, NEW MEXICO

Hearing Date APRIL 16, 1992 Time: 8:15 A.M.

NAME	REPRESENTING	LOCATION
William F. Carr	Campbell, Carr, Berge & Sheridan	Santa Fe
Maurice Trimmer	Bigham Co.	SF
Jack Adler	Marbob	Roswell
Raye Miller	Marbob Energy Corp	Artesia NM

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A P P E A R A N C E S

FOR THE NEW MEXICO OIL CONSERVATION DIVISION:

ROBERT G. STOVALL, ESQ.
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State Land Office Building
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FOR THE APPLICANT:

CAMPBELL, CARR, BERGE & SHERIDAN, P.A.
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BY: **WILLIAM F. CARR, ESQ.**

I N D E X

E X H I B I T S

EXAMINER STOGNER: This hearing will come to order. I'm Michael E. Stogner, appointed Hearing Examiner for today's docket, which is Docket No. 12-92. Please note the date, April 16, 1992. At this time I'll call Case No. 10465.

MR. STOVALL: Application of Marbob Energy Corporation for saltwater disposal, Eddy County, New Mexico.

EXAMINER STOGNER: Call for appearances.

MR. CARR: May it please the Examiner, my name is William F. Carr with the law firm of Campbell, Carr, Berge & Sheridan of Santa Fe. We represent Marbob Energy Corporation, and I have one witness.

At this time, Mr. Examiner, I request that this case be consolidated with the following case, Case 10466. Both of these are applications of Marbob Energy Corporation for saltwater disposal. The wells are in the same proximity and the testimony will be virtually identical in each case.

EXAMINER STOGNER: Thank you, Mr. Carr. If there's no objection, there doesn't appear to be any today, Case No. 10466 will be

called at this time in conjunction with 10465.

MR. STOVALL: It's also the application of Marbob Energy Corporation for saltwater disposal in Eddy County.

EXAMINER STOGNER: Other than Mr. Carr, are there any other appearances? There being none, Case 10465 and 466 are hereby consolidated.

Mr. Carr.

MR. CARR: At this time we call Mr. Ahlen.

Would you state your --

MR. STOVALL: Would you like to do this under oath?

MR. CARR: I can't even imagine that you'd question it but, yes.

MR. STOVALL: He caught it, and I caught it.

JACK AHLEN

Having been duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. CARR:

Q. Would you state your full name and place of residence.

A. Jack Ahlen. I reside in Roswell, New Mexico.

Q. By whom are you employed and in what capacity?

A. I'm employed by Marbob Energy Corporation as a consulting geologist for the purpose of presenting this case to the Commission.

Q. Have you previously testified before the Oil Conservation Division?

A. Yes, sir, I have.

Q. At the time of that prior testimony, were your credentials as an expert witness in petroleum geology accepted and made a matter of record?

A. Yes, sir, they were.

Q. Are you familiar with the applications filed in each of these cases for Marbob Energy Corporation?

A. Yes, I am.

Q. Are you familiar with the subject area?

A. Yes, I am.

MR. CARR: Are the witness' qualifications acceptable?

EXAMINER STOGNER: Mr. Ahlen is so

qualified.

Q. (BY MR. CARR) Mr. Ahlen, would you briefly state what Marbob seeks in these cases.

A. Marbob seeks approval to dispose of water produced from a shallow formation into a deeper, formerly oil producing formation, that formation being the Abo Reef of Eddy County in the vicinity of the Cedar Lake-Abo Pool.

Q. We're seeking authority for disposal in two wells?

A. Yes, sir.

Q. The Turner "B" Well No. 65 and 69?

A. That is correct.

Q. Have you prepared certain exhibits for presentation here today?

A. Yes, I have.

Q. Would you go to the cross-section that is on the wall, our Exhibit No. 1, and review that for the Examiner, please.

A. Yes, I will. This is a structure cross-section of three wells in the Cedar Lake-Abo Pool. I show on the left the Turner, the Sinclair Oil & Gas Company, Turner "B" No. 65. In the middle I show the Sinclair Oil & Gas Company, Turner "B" No. 73. And on the right,

the Sinclair Oil & Gas Company, Turner "B" No. 69.

All of these wells were drilled specifically for the purpose of producing oil in the Cedar Lake-Abo Pool. The well in the middle, the No. 73, is a current disposal well in the Abo Formation and is used by my client, Marbob, as a water disposal well from the same source that we intend to use in disposing in the other two wells.

You will note that it is about halfway between the two proposed disposal wells. The Turner "B" 65 was the discovery well in that pool. The Turner "B" 69 is an additional producing, formerly producing well in the Cedar Lake-Abo Pool.

Both of those wells are currently temporarily abandoned. I show three lines running across the cross-section. One is the structural top of the Abo Formation. That's the uppermost one. The next line down is the top of the Abo Reef, as I have interpreted it from the electric logs and the sample logs. And then the third line is a horizontal line, which is the original oil-water contact when the field was

originally discovered.

I show on the left margin of the depth column all of the current perforations, the perforations that were utilized in producing the Abo Reef in this area. You'll note that the Turner "B" 65 is perforated between 7100 and 7200 on that cross-section. And I show the specific intervals that were perforated.

On the "B" 73 I also show the specifically perforated intervals that are currently being disposed into. And on the "B" 69 I show the perforations that that well was producing from.

Also on the Turner "B" 65, I show a series of drill stem tests that were taken. And there's a symbol on the right side of that depth column that shows that drill stem test interval. There is verbiage to the right of the log that shows -- that gives the specific depth interval and the pressures and the specific recovery from each of those zones.

There's an index map on the extreme right that shows the area. That portion of Section 20 and 29 of Township 17 South, Range 31 East, which is that part of the Cedar Lake Pool.

Q. Would you return to your seat, please.
A. (Witness complied.)
Q. Mr. Ahlen, would you now refer to what has been marked as Marbob Exhibit No. 2?
A. Marbob Exhibit No. 2 is a Xerox copy of the Midland Map Company map of the vicinity of the Cedar Lake-Abo Pool. It shows an area two miles in each direction from the proposed injection wells. I have inscribed on that map two circles of one-half mile diameter.

Also in smaller circles I show the wells that were producing in the Cedar Lake-Abo Pool and they are colored red. All of those that are colored red are currently not producing in the Cedar Lake-Abo Pool.

At the present time there is one well that is productive in the Cedar Lake-Abo Pool. That well is located in Section 19, and it is in Unit I. It is the No. 19 Friess. And my client is the operator of that well. All the other wells are plugged out in one manner or another.

I have some slightly larger circles in Section 20 and 29 of Township 17 South, 31 East. Two of those circles are around the proposed injection wells, and those are located in Unit N

of Section 20, and Unit B of Section 29.

There is the same size circle in Unit C of Section 29. That is the current disposal well. There is another disposal well in Section 21. It is in Unit L. That is a well operated by Avon Corporation, and they are disposing water into a shallower formation, the Grayburg-San Andres.

Q. Mr. Ahlen, that well is in Unit L of Section 20?

A. Yes, sir. There are also two wells that have penetrated this reservoir that are not marked on this map. The No. 75 Turner "B", it is located in Unit C of Section 29, 660 from the north and west. There is another plugged and abandoned well in -- did I say D?

MR. STOVALL: You said D.

THE WITNESS: I meant D. A, B, C, D, Unit D. There's another one in Unit E of Section 29. Both of those went below the Abo Reef or the equivalent and have been plugged in accordance to the Commission's rules at the time. I will show you a diagram of those wells in a few moments.

Q. (BY MR. CARR) Lease ownership in the area is indicated on the plat, is it not?

A. Yes, it is.

Q. Mr. Ahlen, there is only one producing well in the Abo, and you've indicated that it is located in Section 19?

A. Yes, sir.

Q. This is in fact an application seeking authority to dispose of produced water. It isn't an application for a waterflood project; is that correct?

A. That is correct.

Q. Are you ready to move to Exhibit No. 3?

A. Yes, I am.

Q. Let's go to that, your structure map, and I would ask you to review the information on that for Mr. Stogner.

A. This is a structure map showing both the Jackson-Abo Pool and the Cedar Lake-Abo Pool. This is a map that has been published in the literature. It was published by the Roswell Geological Society in 1967 in their symposium of oil and gas fields. The author of this map is Mr. Tracy Clark, a well-known expert in the field. He authored it in September of 1966.

It shows the trend of the Abo Reef in the area. And specifically it shows the

configuration of the reef in our proposed water disposal case. I have modified Mr. Tracy's (sic) map such that I show the two proposed saltwater disposal wells, one in Section 20 and one in Section 29 in the spacing units that I previously described. I also show the currently utilized saltwater disposal well in Section 29. And then I also show the line of the cross-section that we just discussed.

Now, the saltwater disposal well that is currently being used as such was brought before the Commission, and it is being used as a disposal well under Order No. R-3378, dated February 12, 1968.

Q. All right, Mr. Ahlen, let's go to Exhibit No. 4. Would you identify that, please.

A. Exhibit No. 4 is a tabulation of wells within the area of review which have penetrated the disposal well.

I failed to mention on Exhibit 2 that those half-inch -- excuse me, half-mile diameter circles that I have inscribed there define the area of review.

Q. Okay. And this Exhibit 4 includes the tabular information on all wells within the two

areas of review?

A. That is correct. You'll note that I have the location of each well and the proration unit on the extreme left under the title, "Location." Then the specific name of each well is tabulated there, the construction of the well, which is the type of casing that is set in the well, the depth that each string of casing is set, and the number of sacks of cement that were utilized in setting those strings of casing.

The next column is the spud and the completion date of each of those wells. The next column is the well type, such as the original completion of the well and then subsequent designation of that well. The next column is the depth of each of those wells. And on the extreme right is the record of completion or the initial production of each of those wells.

Q. Mr. Ahlen, are there plugged and abandoned wells within the areas of review?

A. Yes, sir.

Q. And does Exhibit No. 5 contain schematic drawings on those plugged and abondoned wells?

A. Yes, sir, it does.

Q. Would you refer to that exhibit now and review it for the Examiner?

A. Exhibit No. 5 consists of six separate sheets for four different wells. The top sheet should be the Turner "B" No. 58. It is a plugged and abandoned well. That is in Unit No. E of Section 29.

The second sheet is the Turner "B" 75, which is in Unit D of Section 29. The third sheet is the Turner "B" No. 70. It shows the diagram of the completed well. And the next page is the plugging procedure that was utilized on that particular well.

The fifth page is the diagram of the Turner "B" 74. This is the original completion diagram of the well. And the next page is the plugging program that was utilized in plugging that well.

Q. Mr. Ahlen, in your opinion has each of these wells been plugged in a fashion sufficient to prevent it from becoming a channel for the migration of injected fluids to other horizons?

A. Yes, sir, I think so.

Q. Let's move now to what has been marked Exhibit No. 6, the schematic on the Turner "B"

65.

A. Exhibit 6 is a schematic on the "B" 65. The tabular data shows the configuration of the current casing in the well. It shows the amount of cement each string utilized when it was set, approximate top of the cement, the hole size as well. And in this particular instance it also shows the injection interval as being from 6890 to 7480.

We intend to utilize 2-3/8 inch plastic-coated tubing in the well set with a Halliburton Trump Packer at a depth of 6800 feet. We are injecting into the Abo Formation of the Cedar Lake-Abo Pool. This well was specifically drilled as an oil well in the 1960-61 time frame. And there are no other perforated intervals in the well at this time.

There is production shallower in the Grayburg Jackson Queen, Seven Rivers, Grayburg San Andres Pool from the depth interval of approximately 1900 to 4880.

Q. All right, Mr. Ahlen, let's now go to Exhibit No. 7. Could you identify and briefly review that?

A. Exhibit No. 7 is a diagram of the

Sinclair Turner "B" No. 69. It shows all of the information that I previously described on Exhibit No. 6, except with the difference that the perforated interval in this instance is 6930 to 7230.

We intend to run the same type of tubing, same type of packer, the similar depth. We're disposing in the same formation, same pool. And it was specifically drilled as an Abo producing well. There are no other perforations in this borehole, and the same remark pertains to shallower production.

Q. Will you be injecting through line tubing?

A. Yes, sir.

Q. And will the annular space be filled with an inner fluid and a pressure gauge on the surface to --

A. Yes, sir.

Q. -- to comply with the Underground Injection Control Program?

A. Just as the current disposal well is.

Q. Okay. Now, Marbob proposes to inject into the Abo Formation?

A. Yes, sir.

Q. What is the source of the water that you propose to inject?

A. The source of the water is to the north in the next section from the Foster Eddy Tank Battery. And the next exhibit, No. 8, is a current chemical analysis of that fluid. This fluid was analyzed February 5, 1992. And it was removed from that tank battery at about that date, a little prior to that date.

Specific gravity is quite high, it's 1.132. Total dissolved solids indicates that it's almost a saturated brine. Has a neutral Ph. You'll note that the major constituent cations and anions are sodium chloride with minor amounts of calcium and magnesium as cations and minor amounts of bicarbonate and sulfate as anions. There's a little bit of barium and a little bit of iron, just traces.

You'll note down, two-thirds of the way down the page on the scale index, that the sulfate ion will not precipitate. It has a negative number; therefore, it does not have a scale tendency. The calcium carbonate does have a slight tendency to scale, but it is treatable with hydrochloric acid, if such develops.

Experience in the currently utilized disposal well does not show any scaling with this same fluid.

Q. So you're not anticipating any problems with compatibility?

A. We are not. Essentially, if you'll note, the next part of Exhibit 8, which is a chemical analysis of fluid removed from our friend, Abo Battery, the currently producing Abo well, that solids are approximately one-fourth those of the injected flood.

The anions and cations are the same almost, except diminished in intensity. And essentially what we will be doing will be dissolving or diluting the injected water into the reef water.

Q. What is Marbob presently doing with the water it's going to be injecting in these wells if the applications are granted?

A. Okay. All of the water that is produced, at least in the north, is being injected into the well, that is, the disposal well. But we anticipate additional volumes and we wanted to prevent injecting over the legal limit. And so we have decided to place two

additional wells on the injection schedule.

Q. What volumes does Marbob propose to dispose of in each of these wells?

A. Approximately a thousand barrels of flood per day.

Q. And what would you anticipate the maximum injection rates might ultimately become?

A. Two thousand barrels a day.

Q. Will this be an open or closed system?

A. A closed system.

Q. Do you anticipate that injection will be by gravity or will pressure be needed?

A. We obviously will have to experiment in the initial stages, but we expect that we'll have to use some pressure.

Q. What maximum pressure do you anticipate you would need to use?

A. Less than two-tenths of a pound per foot to the top of the perforations, which is equivalent to about 1300 pounds at the surface. We expect to utilize less -- we will try to keep everything below a thousand pounds per square inch at the injection site.

Q. But it will be satisfactory for Marbob's purposes if the order provided that

pressure would not exceed two-tenths pound per foot of depth to the top of the injection?

A. That would suit our purposes, yes, sir.

Q. Are there freshwater zones in the area?

A. No, sir. Exhibit 9 is a statement to that effect. The New Mexico State Engineer's Office has checked, and they have no record of freshwaters for anywhere for a mile around the location.

Q. Now, logs of the injection wells and the intervals of interest are contained on Exhibit No. 1?

A. Yes, sir.

Q. Is Exhibit No. 10 a certification that notice of this application has been provided and a copy of the C-108 provided to the owner of the surface of the land in which the injection wells are located as well as to each leasehold operator within a half-mile of the injection wells?

A. Yes, sir, it is.

Q. Are copies of the letters providing such notice and return receipts attached to that exhibit?

A. Yes, sir.

Q. Basically what we're seeking is

authority for each of the two wells that's the subject of the cases before the Division today, we're seeking the same authority that's been previously granted to the offsetting Turner disposal well?

A. Yes, sir.

Q. Have you examined the available geologic and engineering data on the subject area?

A. Yes, I have.

Q. As a result of that examination, have you found any evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water?

A. I have not found any evidence of that.

Q. In your opinion will granting this application be in the best interests of conservation, the prevention of waste, and the protection of correlative rights?

A. Yes, sir, it will.

Q. Were Exhibits 1 through 10 either prepared by you or compiled at your direction?

A. Yes, sir.

MR. CARR: At this time, Mr. Stogner,

we move the admission of Marbob Exhibits 1 through 10.

EXAMINER STOGNER: Exhibits 1 through 10 will be admitted into evidence at this time.

MR. CARR: That concludes my direct examination of Mr. Ahlen.

EXAMINER STOGNER: Thank you, Mr. Carr.

EXAMINATION

BY EXAMINER STOGNER:

Q. Mr. Ahlen, I'm referring now to your Exhibit A, which is the water analyses. Now the one with the saturated brine water, I show you have total dissolved solids as 185,436?

A. Yes, sir.

Q. That is from your Eddy Tank Battery?

A. And the shallow producing horizon.

Q. When you say "shallow producing horizon," you're talking about Grayburg?

A. Yes, sir. Grayburg-San Andres.

Q. Now, are those in Section 17 or --

A. Yes.

Q. -- Section 20?

A. 17.

Q. Section 17. How many wells

approximately feed into that tank battery?
A. I do not know.
Q. Are they Marbob's?
A. Yes, sir.
Q. Now, Exhibit No. 8 shows total dissolved solids as 41,952?
A. 48,952.
Q. Where was this water from?
A. It's from the only remaining producing Abo well in the Abo Reef.
Q. And that is the well number --
A. -- 19.
Q. In Section 19?
A. It is Well No. 19 in Section 19, yes, sir, that is correct, in Unit No. 5, I think. It is the northeast of the southeast.
Q. And this is your representative sample of the water that's in the proposed injection zone; is that correct?
A. That is correct.
Q. Now, the first thing that really jumps out at me is the dissolved solid differences. Did you say that the Grayburg water would be cut?
A. No.
Q. No. It is going in at that

concentration?

A. Yes, sir, it is.

Q. And this water is presently being injected into the Abo Reef disposal well -- what is that, No. 73; is that correct?

A. I think so. The one in the center of the cross-section.

Q. Is that the only place that water is going --

A. Yes, sir.

Q. -- or being disposed into?

A. Yes, sir.

Q. And that was under authority of Order R-3378?

MR. CARR: That's correct.

A. Yes, sir. That order was secured by the operator a long time ago -- well, in 1968.

Q. Do you remember who that operator was, just offhand?

A. I think it was Arco, when they owned it, after they acquired Sinclair.

Q. Do you know if that water is being -- well, Marbob has that well now; is that correct?

A. That is correct. They bought that some time back.

Q. Is it under pressure?
A. Yes.
Q. Injected under pressure?
A. Yes.
Q. Do you know what the maximum pressure is that well is being injected?
A. Less than a thousand pounds.
Q. Do you know if there's any restriction on the pressure on that particular well?
A. You mean a legal restriction?
Q. Yes.
A. There is none.
Q. That was grandfathered in before there were restrictions, is that correct, as far as you're concerned or as far as you know?
A. I do not know the facts of the case.
Q. Okay. Now, the well is within the half-mile radius, in looking at Exhibit No. 2?
A. Yes, sir.
Q. And then looking at Exhibit No. 4, the Exhibit No. 4 shows the wells within the half-mile of you that penetrated the Abo Formation?
A. That is correct.
Q. And the remainder of the wells in

Exhibit 2 are Grayburg producers or Grayburg Td?

A. Grayburg, San Andres, Seven Rivers, Queen, yes, sir.

Q. Okay. And the majority of those wells on Exhibit No. 4 were Abo producers?

A. Yes, except for the bottom 2.

Q. The bottom two. And those were Td'd well below the Abo?

A. Yes.

Q. I'm sorry. Go ahead.

A. The 9900-foot is probably a Wolfcamp test and the 13-7 would be a Morrow test.

Q. The No. 58, that had 5-1/2 inch casing down to 9900 and was cemented with 150 sacks. Do you know what the top of cement is on that well, or have you calculated?

A. I think it's shown on one of my exhibits.

Q. Exhibit 5?

A. The 58. Yes, it is.

Q. Okay. I show that the casing was shot off at 5,003.

A. Which is above the Abo. And then a plug was set immediately on top of that.

Q. But the cement behind that the 5-1/2,

do you know the top of it?

A. I do not.

Q. Could you provide me that information, either by calculation or if your records may show that if there was a temperature survey?

A. Yes, sir, I could.

Q. The one above it, the No. 75, and that's P & A'd also?

A. Yes, sir.

Q. And then, referring back to your Exhibit No. 5, they did not run production casing in that, did they?

A. They did not. The cement plug at 7260, the 7160 was at approximately the Abo level, and then there's a plug immediately below that below the Abo Reef.

Q. Okay. Let's look at the interval between the three plugs. I'm talking about, let's call it plug No. 1, being the 40 sacks between 4625 and 4525; plug No. 2, as being the one in the Abo, the 40 sacks being 7260 to 7160; and plug No. 3, being the 40 sacks between 8466 and 8366.

What is the formation and the type of formation and what is in it between those three

plugs, plug 1 and 2 being -- in other words, what's between 4625 and 7160?

A. The plug No. 1 is about the top of the Yeso-Glorietta. So we'd be talking about Yeso type lithologies down to the top of the Abo. Customarily in this country there is not too much porosity in that interval. The cement plug No. 2 is at the top of the Abo. Plug No. 3 is below the Abo and above the Wolfcamp.

Q. So that's all in the Abo Formation still?

A. Yes, sir.

Q. Is it a producing interval or potential producing interval?

A. In this particular instance it was not.

Q. Is that still in the reef?

A. There are no Wolfcamp producers in the immediate vicinity.

Q. But I understand that it's below the Abo, I mean that plug No. 2 is below the Abo, but above the Wolfcamp?

A. No. Plug No. 2 is right at the top of the Abo.

Q. How about plug No. 3?

A. Plug No. 3 is below the Abo.
Q. Okay. But above the Wolfcamp?
A. Yes, sir. Above the Wolfcamp, but below the Abo Reef.
Q. Okay. Do you know when this well was plugged, the No. 75?
A. Shortly after it was drilled.
Q. And when was it drilled?
A. In 1960. The Exhibit No. 2 shows a date of February 24, 1960, as the plug date of that well.
MR. STOVALL: Is that the 58, or is that the 75? Which one?
A. We're talking about the 58. I'm talking about the 58.
Q. (BY EXAMINER STOGNER) Okay. And authorization to inject into the No. 73 was given in 68, so wells were already plugged and abandoned at that time?
A. Quite a few of them were, yes, sir.
Q. Okay. It appears on the map on page 2 that the two plugged and abandoned wells, No. 75 and 58 that I've been referring to, are closer to that 73 than either the 65 or 69; is that correct?

A. Well, the No. 75 is a direct west offset to the No. 73, yes, sir. And the 58 is diagonal southwest to the 73.

Q. Is this a closed or open system again?

A. Closed.

Q. It's closed. You mentioned the concentrations of the injected fluids into the formation as compatible, did you not?

A. Yes, sir, primarily because the highest concentration of ions are sodium chloride. Sodium chloride is almost infinitely -- well, it's a saturated brand of sodium chloride here and injecting sodium chloride solution into the less dilute re-flow will cause no incompatibility.

Q. I'm still stuck on the word "compatibility." Can you allude into that a little bit more?

A. Oh. My concept is it will not cause a precipitation of an insoluble residue within the reservoir and plug the perforations.

Q. Okay.

A. That's what I call compatibility.

EXAMINER STOGNER: Any other questions of this witness?

MR. CARR: Mr. Stogner, I have one question.

EXAMINER STOGNER: Yes, sir.

FURTHER EXAMINATION

BY MR. CARR:

Q. Mr. Ahlen, I believe Mr. Stogner asked you about the top of the cement behind the 5-1/2 inch casing in the Turner "B" No. 58?

A. Yes, he did.

Q. Have you been able to locate that information?

A. Yes, sir, I have.

Q. Could you provide that at this time?

A. Yes. I have before me a copy of the United States Department of Interior Sundry Notices and Reports on Wells for the Turner "B" 58 that was filed September 27th of 1971 by Atlantic Richfield Company. And it is a description of their procedure in plugging that well.

And step No. 1 was to shoot off and pull 5-1/2 inch casing from the freed point. And the top of the cement was determined to be 9430 feet.

Q. I'm sorry, what?

A. 9430 feet. They set cement plugs in the Wolfcamp at 8400 feet and then a plug in the tub at 6552 feet, another plug in the Glorietta at 5020 feet, and another plug at the 9-5/8 inch shoe at 3835.

Q. Okay. The way I understand that, the top of the cement at the 5-1/2 was at 9430?

A. Yes, sir.

Q. But they didn't shoot it off until 5003 feet. And then they set the plugs inside the 5-1/2 inch casing, the way I understand, at the different intervals that you were talking about between the 5000 feet and the 9430?

A. I think they retrieved more casing than that.

Q. Okay. How much casing have they showed they retrieved? We are talking about the 58; right?

A. No. It says here they shot off and pulled the 5-1/2 inch casing from the freed point, top of the cement at 9430, which would be at the freed point just immediately above the cement at 9430, is the way I interpret that.

Q. Okay. Now, in Exhibit 5, though, I show that the casing was shot off at 5003.

That's where I'm getting confused, I guess.

A. I see that too.

MR. CARR: Could we go off the record for a minute, Mr. Stogner?

EXAMINER STOGNER: Sure we can go off the record.

[A discussion was held off the record.]

[A recess was taken.]

EXAMINER STOGNER: The hearing will come to order. Mr. Carr.

Q. (BY MR. CARR) Mr. Ahlen, have you had an opportunity to further review the records of the well file?

A. Yes, sir, I have.

Q. Can you review for Mr. Stogner the plugging program on the No. 58 well?

A. The document that I quoted previously is the proposed plugging procedure. It was not the procedure that actually occurred. They were not able to cut the casing at the top of the cement. And the diagram that we show on Exhibit No. 5 is the correct one. And those plugs were not set in the open hole, as I quoted earlier.

That was only the proposed plan. And essentially the only information that we derived

from that previous report was that the top of the cement was at 9430. The casing is not cemented in the hole above that until we get to the plug at the top casing where it was cut off.

FURTHER EXAMINATION

BY EXAMINER STOGNER:

Q. Wouldn't that mean that there would be communication between the Abo and the Wolfcamp?

A. There is that possibility, yes, sir.

Q. Is this well on the lease belonging to Marbob, or does it still belong to the lease belonging to Arco?

A. I do not know.

MR. MILLER: Arco.

Q. Since there is a communication problem or potential for a communication problem, that it might be necessary to re-enter this well and put adequate cement behind that Abo so it would not communicate with the Wolfcamp?

A. I am advised that that particular wellbore does belong to Arco at the present time. The extenuating circumstance is that Arco proposed their disposal well. It is the closest well to their No. 58. And if anyone is contaminating the fluid, it is Arco.

Our proposed disposal wells are a quarter-mile further away from that possible contamination.

Q. Now, the No. 73 well was the well you were alluding to, is that correct, as a current disposal well?

A. Yes, sir.

Q. And that belongs to Arco?

A. Well, no. They originally proposed that as a disposal well.

Q. But now the No. 73 belongs to Marbob?

A. Marbob, yes, sir.

EXAMINER STOGNER: Were there any other questions of this witness?

MR. STOVALL: Not hardly.

MR. CARR: No further questions.

EXAMINER STOGNER: Is there anything else further in this case?

MR. CARR: We have nothing further to present in this case.

EXAMINER STOGNER: Mr. Ahlen, you may be excused.

If there's nothing further in either Case 10465 or 10466, these cases will be taken under advisement. And with that, hearing

adjourned.

[And the proceedings were concluded at the approximate hour of 9:10 a.m.]

I hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case Nos. 10465 and 10466 heard by me on April 16 1992.

Michael E. Stogner, Examiner
Oil Conservation Division

CERTIFICATE OF REPORTER

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

I, Debbie Vestal, Certified Shorthand Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I caused my notes to be transcribed under my personal supervision; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL April 27, 1992.

Debbie Vestal

DEBBIE VESTAL, RPR
NEW MEXICO CSR NO. 3