NEW MEXICO OIL CONSERVATION DIVISION

STATE LAND OFFICE BUILDING

STATE OF NEW MEXICO

IN THE MATTERS OF:

The Application of The Wiser Oil Company for Statutory Unitization, Lea County, New Mexico. **Case 10930**

The Application of The Wiser Oil Company for Approval of a Waterflood Project, Lea County New Mexico. **Case 10931**

The Application of The Wiser Oil Company to Authorize the Expansion of the Malijamar Caprock Unit Water-flood Project and Qualify Said Expansion for the Recovered Oil Tax Rate Pursuant to the New Mexico Enhanced Oil Recovery Act, Lea County, New Mexico. **Case 10932**

BEFORE:

DAVID R. CATANACH

Hearing Examiner

State Land Office Building

March 3, 1994

REPORTED BY:

CARLA DIANE RODRIGUEZ
Certified Shorthand Reporter
for the State of New Mexico

APR 12 1994

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A P P E A R A N C E S

FOR THE NEW MEXICO OIL CONSERVATION DIVISION:

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BY: **PAUL A. COOTER, ESQ.**

I N D E X

E X H I B I T S

EXAMINER CATANACH: Call the hearing back to order at this time, and we'll call Case 10930.

MR. STOVALL: Application of the Wiser Oil Company for statutory unitization, Lea County, New Mexico.

EXAMINER CATANACH: Are there appearances in this case?

MR. COOTER: Mr. Catanach, my name is Paul Cooter. I'm with the Rodey law firm here in Santa Fe, appearing on behalf of the Wiser Oil Company.

At this time I would ask that, for purposes of this hearing and the taking of testimony, that Cases 10930, 10931 and 10932 be consolidated.

EXAMINER CATANACH: Very well. At this time we'll call Cases 10931 and 10932.

MR. STOVALL: 10931 is the application of the Wiser Oil Company for approval of a waterflood project, Lea County, New Mexico. Case 10932 is the application of the Wiser Oil Company to authorize the expansion of the, Maljamar Caprock Unit Waterflood Project and qualify said expansion for the recovered oil tax rate,

pursuant to the New Mexico Enhanced Oil Recovery Act, Lea County, New Mexico.

EXAMINER CATANACH: Any additional appearances in any one of these cases? There being none, can I get the witnesses to stand and be sworn in at this time.

MR. COOTER: Two witnesses.

[And the witnesses were duly sworn.]

ROBERT M. WILLIAMS

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

EXAMINATION

BY MR. COOTER:

Q. Would you state your name for the record, please, sir?

A. Robert M. Williams.

Q. Have you previously testified before this Division?

A. Yes, I have.

Q. To refresh the record, would you briefly state your education and professional experience?

A. I was a petroleum engineering graduate of Penn State in 1953. Worked for Shell Oil

Company, Monterey Oil Company. Monterey was purchased by Humble. Worked for Humble for a period of time, and then for Morris R. Antweil, an independent operator in Hobbs, for approximately 20 years, and have since been involved with oil field service companies in Hobbs. And then Quality Production Corporation for the last two years.

In all this period I have been involved with engineering, waterflood projects, supervision of the geologic and field production work in conjunction with waterfloods and normal production operations.

Q. Mr. Williams, are you familiar with the Caprock, Maljamar Unit area, which is the subject matter of the instant applications?

A. I am.

MR. COOTER: We would ask you to recognize Mr. Williams as an expert petroleum engineer.

EXAMINER CATANACH: Mr. Williams is so qualified.

Q. Relate what Wiser seeks by these three applications, Mr. Williams.

A. Yes. We're asking for statutory

unitization of some 4,160 acres, Lea County, New Mexico. We seek that unitization to initiate a waterflood project, and seek your approval of the project and the injection.

And, in conjunction with that, we would ask for a provision in that approval, for administrative approval, for additions to that project as additional injection wells are to be added, Phase II and III of the project.

We're also requesting qualification of the project as an enhanced oil recovery project for the tax rate treatment.

Q. Let me direct your attention, if I may, to Exhibit 1, which is a map.

A. Yes. It is the map of the proposed unit area, and shows the offsetting leases and wells. The acreage of the proposed unit area is located about six miles southeast of the townsite of Maljamar.

Some of the offsets were bounded by other units, like the Southeast Maljamar Unit, the MCA Unit of Conoco's, and the Malmar Unit of Penroc. It's not a unit, but effectively so, Phillips has a large Leamex lease that's some 15,000 acres to the east of us. And, of course,

a lease that size operates much like a unit.

And those are some of the boundaries of our proposed unit.

The unit is located in the Maljamar Grayburg-San Andres pool of Lea County, New Mexico, and the production is from the Grayburg sands and the San Andres dolomites, at depths of approximately 4,000 to 4,500 feet.

Q. Mr. Williams, while we're looking at Exhibit 1, the map, I believe the Wiser Oil Company recently acquired this acreage from several different courses. Would you explain to Mr. Catanach something about that?

A. Yes. The properties were acquired over a period of, oh, approximately six months to a year, from a group of operators, the largest of which was Pennzoil. And the other operators that were acquired was the Brothers, which actually had a unit, the Mal-Gra Unit.

Southwest Royalty had two leases comprising a section; Murphy Baxter, operator, had three leases that would be approximately a section and a half. And there was a 40-acre tract acquired from Phillips that had an abandoned well on it, that fit well in the unit

project.

In total, there were 13 leases acquired that totaled 4,160 acres. Of those lands, 3,400 were state lands, state leases, and 760 acres were federal lands, and there is no fee acreage in the unit.

Q. Let's go to Exhibit No. 2 which is also a map, I believe?

A. That's correct. Exhibit 2 is a map of the unit area that is our proposal to renumber the wells, with the approval of the unitization. Rather than carry the old designations, we're proposing that this numbering system will be used for the wells, once the unit is formed.

Q. Attached to that map is a tabulation, which I've marked as a separate exhibit, Exhibit No. 3?

A. Right. Exhibit No. 3 is a cross-reference, the old well number to the proposed new well number, and it's cross-referenced. You can go either direction there to tie that together in this interim period.

Q. Let's turn next to the unit agreement itself, which has been marked as Exhibit No. 4.

That describes the same 4,160 acres, does it not, that you've already testified about?

A. Yes. This is the standard unitization agreement. It was supplied to us--the standard form was supplied by the State Land Office to be used in the case where there's federal and state lands involved.

The additions or changes to that agreement are minimal. One, of course, is the description of the unit area, the 4,160 acres. The other is the designation of the unitized interval, which we are proposing to be from the surface to 5,500 feet below the surface, which is the rights that are held by Wiser Oil Company.

The other point of significance is the participation factor that is recommended to use for determining the tract participations. We're recommending a participation formula based 35 percent on the number of usable wells, 35 percent on the cumulative oil production, and 30 percent on the current production as based on 1992 production.

Q. Let me stop you right there.

MR. COOTER: Mr. Catanach, that's Section 13 of the unit agreement, and I would

also refer you to Exhibit No. 5, which is a separate restatement of that part of the unit agreement. Attached to that is a tabulation of how that works out for the various tracts committed.

A. Yes. The attached table shows the number of usable wells, the cumulative production, and the 1992 current production for each of the 13 tracts to be included in the unit, and what the percentage of each of those parameters is to the total of that particular parameter. And the factors, then, that were used in determining the proposed tract participations, which are listed in the right-hand column.

Q. Mr. Williams, in your opinion, is that tract participation such that it allocates production to the separate tracts on a fair, reasonable, and equitable basis?

A. Yes. We selected this. We felt this was reasonable and gave approximately equal weight to the cumulative, which is a measurement of the quality of that pay on that tract, a factor for the current production, which is a measure of that tract's current income, and a factor for the usable wells, which is a decided

factor in the development of the waterflood program, the value of that tract to the unit, depending on how many of the wells are usable on that tract.

Q. Before we leave the unit agreement, is there anything else you want to touch on?

A. I mentioned specifically the unit agreement includes the normal exhibits: Exhibit A, being the map showing the individual tracts, the numbering system of the tracts, and it also designates what acreage is state acreage and what acreage is federal; Exhibit B is a standard tract ownership, which gives the ownership of each tract. The working interest ownership is 100 percent The Wiser Oil Company. The basic royalty, of course, is the state and the federal government, and the overriding royalties are listed on the tracts where they're applicable; and Exhibit C is the tabulation of tract participation, by tract, and, of course, again, Wiser is the hundred percent working interest owner.

MR. COOTER: At this point I might state, Mr. Catanach, and we'll come to an affidavit in just a minute, but we've heard no

objections from any of the royalty or overriding royalty interest owners, and, in fact, have received ratifications from 81.72 percent of those interests at this time.

The largest one we don't have back yet, but they've indicated approval, is Phillips Petroleum. They've indicated approval, so, we anticipate no objections by anyone to it.

Q. You mentioned that it was submitted both to the BLM and the State Land Office?

A. That is correct. We made the preliminary submittal to both those agencies and received their approvals.

MR. COOTER: I would invite your attention to Exhibits 6 and 7; 6 is the preliminary approval from the BLM, and 7 is the preliminary approval from the State Land Office.

To continue in the same order of numbering, I have marked as Exhibit 8 the affidavit of mailing to all interest owners.

MR. STOVALL: Mr. Cooter, with respect to that, do you have the return receipt cards?

MR. COOTER: Yes.

MR. STOVALL: We don't need them at the moment, but we do need copies.

MR. COOTER: Sure, I've got them here. Why don't I just give you the originals? I don't need them. I won't mark them as an exhibit, but are a part of--

MR. STOVALL: We'll attach them to Exhibit 8.

MR. COOTER: As I said, we haven't heard a bad word from anyone.

Q. (BY MR. COOTER) All right, Mr. Williams, I think now we're ready to go to Exhibit No. 9, which is our waterflood development study, and some of the exhibits attached to it.

Let's start out, if we may, you gave a brief history of the geology, or the area. Will you expand a little bit on that?

A. Yes. As we pointed out before, this production is from the Maljamar Grayburg-San Andres pool. The Grayburg and San Andres are prorated together as a common source of supply for this reservoir.

The production is from the Grayburg sands. These tend to be dolomitic sands, multi-zone of sands through the Grayburg section, and the porous dolomites of San Andres. And in

figure 2 of the engineering report, we've shown a type log which shows the commonly used local designations of the sands in the Grayburg and the porous zones of the San Andres that are productive in this area.

This production is located in what's known as the Artesian Vacuum trend. It's the northwest shelf of the Delaware Basin, and east/west anticlinal feature that extends some 30, 40 miles from Artesia to the Vacuum field. This production is located on that feature.

In figure 3 of the engineering report we've shown a structure map, which is on top of the San Andres formation, which would be in approximately the middle of our producing interval. This shows a very low relief structure. The only structural feature of any significance is on the southern edge of the producing trend. You start getting the closely-spaced contours, indicating where the formation starts to fall off into the Delaware Basin, and this is effectively the southern boundary of the production, where that falls off into the Basin there.

Q. Let me ask you to stop right there and,

as shown on figure 3, what you were just talking about is to the south in the Cross-Timbers Waterflood Unit and not in this one?

A. Yes. It's the south edge of the Cross-Timbers Waterflood Unit, and in the southwest of our Phillips federal tract, included in this unit, is right on the edge of where that falls off in the Basin. By the time you get into the southern half of those sections, Sections 32 and 33, there's no production from the Grayburg-San Andres.

The other wells that are shown in there are Abo and Queen wells, Corbin Queen and Abo production, in the southern part of those two sections.

So the productive limits end pretty abruptly there when you fall off into the Basin. But the production, other than that, other than that boundary, the productive limits are determined by the stratigraphy, the porosity, permeability development, rather than structure.

The field is characterized by very little primary water production. There's no oil/water contact known. It's a solution gas drive producing mechanism in the reservoir.

Permeabilities from cores were indicated to be from a tenth of a millidarcy to 20 millidarcies, and the average porosity indicated from cores was 11.4 percent average.

As we indicated, it's a multi-zone reservoir with many zones producing, and I think this is characterized by the two cross-sections that are provided. In figures 4 and 5 of the report, we've provided cross-sections that show the multi-zone nature of the producing interval, the reservoir, and shows the correlation in an east/west direction on figure 4, and the north/south cross-section in figure 5.

The volume of the reservoir was determined through an isopach map, provided in figure 6, provided in the report, which is the isopach of the net pay. And, based on that volume indicated by the isopach, the 11.4 percent porosities, the 35 percent irreducible water saturation and a formation volume factor of 1.24. The original oil in place underlying the unit area was estimated at 52 million barrels. That's all volumetric.

The gas production data and the reservoir pressure data aren't sufficient to do

any kind of material balance calculation and, of course, then, it's not closed reservoir. The reservoir continues across the boundaries for many miles, actually. So, the volumetric is the only estimate that's available on oil in place.

Q. Tell us about the cumulative production, Mr. Williams, from the area.

A. In the report, we've tabulated the production history from the individual leases, tables 3, 4, 5, 6 and 7 of the report give a breakdown on the production history. The figures, beginning with figure 10, figures 10 through 14 give a production graph that probably best shows the history of these individual leases that are proposed to be included in the unit area. So that basic data has been provided.

Q. What has been the production from the area to date?

A. The cumulative production to date from the area has been 10.18 million barrels. Of that, 4.6 million barrels has been determined to be the indicated primary production, which is only about nine percent of the oil in place. The waterfloods that were operated in the area have recovered an additional, approximately five

million barrels, to bring the present cumulative to 10.18 million barrels.

I would like to review a little of the development history in the area, and that will tie in, then with this cumulative information. The field was discovered in 1926. This was, actually, the first well that was productive in Lea County.

This first drilling and development on the leases, to be included in the unit, was in 1942, and the major development period for the unit area was in the 50s and 60s.

In the latter part of the 60s, a waterflood program was initiated on all the leases that are to be included in the unit. This program was an 80-acre five-spot pattern waterflood. At its peak there were 63 producing wells and 46 injection wells within the proposed unit area, 109 total wells.

The waterflood, in our opinion and our review of it, was not supervised the way we would like to see it supervised, and there was a minimum of any workover work on any of the wells to control the injection into desired producing intervals. There was a lack of coordination

between the zones that were open to production, in the injection wells and the producing wells.

And, by the 1970s and by 1980, the waterflood program was fairly well abandoned and decreased to just a water disposal type program where the produced water was put back in injection wells, irregular pattern of injection wells. And, from the 80s on, it's really not been a waterflood project as such, with any makeup water.

Despite the operations of it, there was a good response in quite a few areas, and additional oil recovered. And, in figure 9 of the report, we've shown a map that shows the waterflood cumulative oil recovery--wait. I'm looking at the wrong map here. The waterflood performance map is shown in figure 15 to the report. We've shown the recovery of the different patterns where operators crossed the unit area, and some of the response has been quite satisfactory on some of those patterns.

But with the minimum of workover and the minimum of injection control, we don't think the project operated nearly as efficiently as it could have.

We estimate that the cumulative to date is 10.18 million, and we estimate that the reserves, through a continuation of the present mode of operation, would be about 636,000 barrels of oil remaining to be recovered without instituting some other type of program.

Looking at the opportunities--

MR. COOTER: Before you go to that, Mr. Williams, let me point out to Mr. Catanach that the water injection orders are set forth in the application, all with the exception of the order of unitizing the Mal-Gra, and that Mal-Gra Unit Order is R-2768. But all of the water injection orders are set forth on page 3 of the application.

Q. Pardon me. Go ahead.

A. As the acquisition of these properties were considered and we looked at the opportunities that there might be in the area for additional recovery from these properties, the analogies that were available there to look at were, of course, the Conoco MCA Unit, which is a large 8,000-acre unit, which has been very successful in the area. They've drilled a hundred infill wells in their unit. They

maintain support of those wells with a good injection program. The injection program has been an inverted nine-spot, which gives you less injectivity than you could obtain if you went to closer spacing on your injection wells.

But with their hundred infill well program, they've recovered--had initial responses of about 50 barrels of oil per day, per well, on their hundred-well infill.

The Avon is a more recent infill program. They went in and drilled 22 infill wells, had initial productivity of 95 barrels of oil per day, per well, but their recoveries are indicated to be about 55,000 barrels per well. They did not follow-up with injection support to those infill wells, like their original plans, and we feel that that hurt the recoveries shown to date.

Evidence of that, Cross-Timbers Oil Company has the Southeast Maljamar flood, which adjoins our proposed unit. They drilled 16 infill wells and supported them immediately with the offsetting injection wells on a 40-acre five-spot. And their recovery looks like it's going to be about be 106,000 barrels per well.

This is offsetting acreage to our unit. And they operated much as we are proposing to operate the Caprock Maljamar Unit.

The information on those other units we've provided in tables 8 and 9 to the engineering report, but from this analogy and review of these projects, we recommended to institute a waterflood program, where we would redevelop the waterflood program going to a 40-acre spacing, and drill infill wells as the producing wells.

So, in effect, all the existing wells will be converted to water injection. Infill wells will be drilled in the center of each of those patterns, to serve as the producing wells for that waterflood program. That operation will give us the 20-acre infill wells, the 40-acre five-spot pattern, and we've estimated that we'll have initial productivities of about 50 barrels a day, per well, on the infill wells, and recover approximately 116,000 barrels per well, per producer.

This will give us an additional estimated recovery, and this is in addition to the 636,000 barrels that we expect to get from

continuation of the present operations, an additional recovery of 6.8 million barrels of oil from the project.

We point out that this additional oil recovery is as a result of the 40-acre waterflood project. The infill wells are just a facility to that project, to give us a drainage point in each of the patterns.

The cost of the proposed program, we've proposed to institute this in three-phase steps. Figure 17 of the report is color-coded, to show the areas and the wells that are going to be in Phase I, which is what we're requesting approval for at this point, and then what we foresee as the area to be included in Phase II and Phase III. Of course, we want to maintain the option to modify those plans from what we learn from drilling the initial wells and the initial conversions.

The estimated cost in Phase I is 4.2 million dollars to drill 10 wells and develop 11 waterflood patterns. Phase II would be 10.7 million dollars to drill 28 wells and develop 31 patterns. And Phase III would be 8.1 million dollars to drill 21 wells and 19 additional

patterns. So, that's a total of 23 million dollars to drill 59 wells and develop 61 injection patterns.

I think, as I pointed out in figure 17 of the report, we've shown how that development would progress. We would intend to initiate the Phase I development as soon as we could obtain the approvals of the required agencies, and proceed with our plans.

The total investment, as I pointed out, is 23 million dollars. In the report, we provide the economic projections for this development. The 10 percent discounted net cash flow from the project is estimated at 34 million dollars. The rate of return would be 46 percent. Calculate 46 percent, and a payout in 3.7 years. This is on the additional recovery of 6.8 million barrels that would not be recovered if the waterflood wasn't redeveloped.

This would bring the ultimate recovery to about 17.9 million barrels of oil.

Q. What's the time period, Mr. Williams, that's anticipated for each of the three phases?

A. Of course, that would depend somewhat on the experience we have with the initial part

of the project. Right now, everyone is looking at the price of oil, also. That may have some effects on it. But we anticipate approximately two to three years to develop the full project.

Q. In your opinion, would the drilling of infill wells without the waterflood be economically feasible?

A. I think it would be questionable economics. We would estimate you would probably be looking at 40-, 50,000 barrels. And I think it be wouldn't be the type of economics that you would be looking for. You would probably be getting your money back.

The crux of the program is that you have to do the waterflood and do it at the same time. The wells are just drilled to provide the producing point on each of those patterns.

Q. While we're talking about waterflood, let's turn next, if we may, to that application, and the Form C-108 that was filed with it.

A. Yes, the complete Form C-108 was filed with the Commission, and multiple copies, and I think you marked that total submission of the C-108 and all its attachments to be Exhibit 10.

The C-108 provides all the information

which is required there by the form. I think significant, we should point out the fluid to be injected will be all the produced water that's produced in the unit, plus fresh Ogallala water as makeup volume to balance the withdrawals from the reservoir, as required.

Injection rates we've estimated at 250 barrels of water per day per injection well. This is the injectivity that we would like to attain. The injection pressures, we think, would probably average around a thousand pounds, but we will be looking to increase those pressures, probably, with step rate testing, to maintain our injectivity.

We would like to request that provisions be made in the order for administrative approval to increase the injection pressure when the proper step rate testing information is provided to the Commission.

The well data and schematics are provided by the C-108. Exhibit D, I believe it is, provides the information on the P & A'd wells that are within the area of review, and there's a couple right on the south edge of the area of review there that I've included the data.

Whether they're on the line or outside the line or not, you would have to measure or survey, probably. But they were not included because they were close enough to be questionable.

The thing I wanted to point out was in Exhibit--well, okay, Exhibit B to that C-108. The first page of that is a schematic, which is a typical injection well set-up that will be used in the unit area.

Most of the wells are 5-1/2-inch casing with a perforated completion. We'll set a packer approximately 50 foot above those perforations, have plastic-lined tubing to the surface for our injection fluids. The annular space behind the tubing and above the packer will be circulated with corrosion-inhibited fluid in that tubing casing annulus, and, of course, a pressure monitor on that braiden head to monitor the condition of the well.

That would be the type of injection well provision that would be made for each of the injection wells.

Q. Following that typical injection well, then, you set forth the data on each of the actual wells, have you not?

A. That's right, present condition of the proposed injection wells is shown for each of the wells that we're proposing in Phase I.

Q. All right. Go to Exhibit C to that form.

A. Exhibit C is just the well data on each of the wells within the area of review that penetrated the producing formation provided. And Exhibit D, then, is the well data and schematic diagram of all the plugged and abandoned wells that are within the area of review.

And the last exhibit is a tabulation and a little map showing the existing fresh water wells that are within the area of our proposed injection. None of the fresh water wells are currently active.

I visited them, made a field trip and visited the locations of all those, except the one I couldn't find, and they've all been abandoned, a couple of them plugged, but most of them abandoned.

Q. Exhibit A to that form is a map which shows your area of review, is it not?

A. That's correct. It shows the area of review and the offsetting leases, and the

proposed injection wells.

MR. COOTER: I have marked as Exhibit 11 the affidavit of mailing, to the operators within the half-mile area of review, and I have the return receipts on that. Again, we've heard no objections. Those are the unit, and these are the flood.

A. There was just one other point that I wanted to make in conjunction with the consideration of the qualification for the enhanced oil recovery project.

This is an area that was waterflooded previously. That waterflood has been abandoned. Operating it as a flood has disintegrated into just using it as a water disposal for the produced water from those leases, and injecting into an erratic pattern of injection wells, it's no longer a waterflood.

We're talking about instituting an entirely new project. It will be a 40-acre waterflood. All the existing wells will basically be converted to injection. The 40-acre spacing, from what experience Conoco and Cross-Timbers have had, gives a much better waterflood sweep efficiencies, better

recoveries.

We'll institute that and drill the infill wells to provide the producing outlet for each of those patterns. This is, in reality, a new project, related only to the previous project by the similar areas, and continued water disposal under those existing waterflood orders.

Q. Mr. Williams, is the proposed project area now so depleted that it is prudent to apply the enhanced recovery techniques which you've testified about, to maximize the ultimate recovery of crude oil?

A. Yes. The waterflood program that was carried out is, basically, depleted. As you can see from our reserve estimates, from an area this size, has a reserve estimate of 600,000 barrels, is nearing its economic limit.

And the other matter that makes it attractive and prudent is that experience that people have demonstrated in offsetting units, 80-acre waterflood programs, don't recover all the oil that can be recovered. Going to a 40-acre pattern will improve that recovery and recover additional oil that, in no other way, would be recovered.

Q. So, it is technically and economically feasible to proceed as you have testified?

A. Yes, sir.

Q. Are the applications, particularly the enhanced oil recovery application, is that prematurely filed?

A. I don't--

Q. The application for the enhanced oil recovery project is not prematurely filed?

A. Oh, no. We would intend to proceed with the project immediately on receiving the approvals of the agencies.

Q. Nor is the project prematurely proposed?

A. No. The sooner we could do the project, the better.

Q. If the Commission were to grant these applications for the unit and for the waterflood effort, in your opinion, will Wiser Oil recover hydrocarbons not otherwise recoverable?

A. Yes. In our analysis, the 6.8 million barrels that we estimate can be recovered with this waterflood program is oil that, in no other way, would be recovered without the institution of this program.

Q. Would the granting of these applications be in the best interest of conservation?

A. Yes, they would.

Q. Prevention of waste?

A. Yes.

Q. And protect correlative rights?

A. Absolutely.

Q. The exhibits that you've referred to in your testimony, are they true and correct, and accurately set forth the information that is referred to therein?

A. Yes, sir.

MR. COOTER: With the exception of the affidavits, which are mine. We would offer all the exhibits. I think they're 1 through 11.

EXAMINER CATANACH: Exhibits 1 through 11 would be admitted as evidence.

Q. Bob, anything else?

A. I don't have anything else.

MR. COOTER: That concludes our presentation.

THE WITNESS: Paul, maybe we should mention, as we pointed out in our application, we listed all the orders that were currently in

effect authorizing water injection in the area, and these go back many years.

There's also the order approving the Mal-Gra Unit, that we're proposing to be included into this unit. Upon the requested approval of the unit and waterflood project, as we see it, those older orders should be terminated and, I guess, should we request that?

MR. COOTER: We would so move. They're all set forth in the application. If you would like, I'll read them into the record.

EXAMINER CATANACH: Why don't we do that, Paul.

MR. COOTER: The Mal-Gra Unit Order is No. R-2768. The other waterflood injection Division Orders No. R-2156, R-2157, R-3011, R-3129, and WFX, which I understand are Administrative Orders, 132, 139, 149, 160, 171, 173, 185, 200, 211 and 295.

THE WITNESS: One addition there, Paul. There's an Order R-2769 that goes in conjunction with 2768, which is the unitization of Mal-Gra, and 69 was the waterflood authority.

MR. COOTER: Okay. Thank you.

EXAMINATION

BY EXAMINER CATANACH:

Q. How many separate waterfloods did we have in this proposed unit?

A. I hadn't counted them that way. Perry, can you help us?

MR. STOVALL: Is there another witness who would be more appropriate to answer that?

THE WITNESS: No. We weren't planning another witness. Pennzoil had an operation, and I would say all theirs could be counted as one. Brothers had an operation, that would be two. Southwest Royalties had an operation, that would be three. And Murphy Baxter had an operation. So there would be four waterflood operations.

But some of those, say, like Murphy Baxter, it was on three separate leases, so I think they had three authorizations.

MR. STOVALL: There were three leased waterfloods, is what you're saying?

THE WITNESS: Yes, units. And Southwest Royalties was two separate leases. Pennzoil was four or five leases.

MR. HUGHES: They may have had two orders.

THE WITNESS: Yeah, several of them had more than one order, you can tell by the number of them, because they put in a few injection wells and then expanded it with other orders. So, there were--

Q. (BY EXAMINER CATANACH) Several?

A. That many operations in the area. And, like the area adjoining our proposed unit, some of it was not in units and they had little floods going there, too.

MR. STOVALL: And just for the record, since you have spoken and it's on the record, would you identify yourself, please?

MR. HUGHES: My name is Perry L. Hughes.

Q. (BY EXAMINER CATANACH) Okay. Within the proposed area, was the Mal-Gra Unit the only unitized--

A. It was the only thing that was actually a unit, yes, sir.

Q. The rest of them were on a lease basis, as you understand?

A. They were operated on a lease basis.

Q. Do you know if that unit has terminated?

A. No, it has not. It's still a valid unit. And we're proposing that that acreage be included in this unit, and that older unit be terminated.

Q. Is Wiser the unit operator for that unit?

A. They own it 100 percent.

MR. STOVALL: Are any of the overrides in that unit? For record purposes, let's get you to answer that.

THE WITNESS: Yes.

MR. STOVALL: I guess maybe the more important question is, any of the ones you're seeking to statutorily unitize.

THE WITNESS: Let me look at my unit agreement.

MR. STOVALL: While you're looking, can you tell me if that was a statutory unit or was it a voluntary unit.

THE WITNESS: I can't tell you offhand. I would have to look at the order. I'm guessing it was voluntary.

MR. STOVALL: Do you know about the year of the order, or decade.

THE WITNESS: No, sir. Can you tell

from the number? 2768.

MR. STOVALL: The Statutory Unit Act didn't come into play until the 70s.

MR. COOTER: I don't think it was a statutory unit.

[Discussion off the record.]

EXAMINER CATANACH: What I was discussing with Bob up here was whether we had authority to terminate a unit, and he said that you, the operator, probably did. I guess that would be a question I have.

Within the unit agreement, what are the terms for terminating the unit?

MR. COOTER: Wiser is the 100 percent working interest owner of that unit.

MR. STOVALL: There are probably still some steps that would have to be taken to make it official. It's a federal unit or a state unit?

MR. COOTER: State.

MR. STOVALL: You have to do something particularly to let the Land Office know.

THE WITNESS: They know our plans, and we've discussed with them what they thought would be better, to call this whole thing an expansion of the Mal-Gra Unit, or just do a new unit and

terminate the Mal-Gra, and their suggestion was, do a new unit and terminate the Mal-Gra on an effective date.

MR. STOVALL: I don't disagree with that, from a practical standpoint. What I'm suggesting is that you need to take a look at the unit agreement, primarily for title reasons. It may be a matter of simply recording documentation to reflect that that unit is terminated, and then record it, because I think that would be where you would run into trouble is in a title situation; not from a regulatory standpoint, but from an ownership participation standpoint.

THE WITNESS: In answer to your question regarding the overrides, the overrides on that lease, except for a two-percent override held by Phillips, which we don't have approval in hand, but they've indicated they're going to approve it and it's in the bureaucracy, but the rest of the overrides there are on that tract are all overrides that we've created as we acquire the properties, and they've all approved the unit.

MR. STOVALL: So you don't have a problem with taking an override out of the unit,

without their participation, and putting them in a new unit.

THE WITNESS: No. The only override that was in existence was Phillips, and they've indicated that they are going to approve our unit agreement.

MR. STOVALL: So, what I'm hearing you say, then, all the overrides that are being brought in under the Statutory Unitization Act are on the other leasehold waterflood areas?

THE WITNESS: That's right. The nonconsenting parties that we have would not be on that Tract 10, which is the Mal-Gra Unit.

MR. STOVALL: That simplifies things a little bit, primarily from a title standpoint and not from a regulatory standpoint.

EXAMINATION RESUMED

BY EXAMINER CATANACH:

Q. Mr. Williams, which other parties, other than Phillips, have not agreed to participate in the unit?

A. Paul has the tabulation of who has and who hasn't ratified. Of course, your big ratifications, we're going to have the indication from the state, the letter of approval, and we

have the indication from the feds. The rest is overriding royalty interest, and these are small.

One of the bigger ones is Phillips, which they've indicated they're going to approve and they haven't, as yet. The rest will be very small interests, and most of the lack of approval there is probably just locating the right party. There are trusts and estates and so forth, and finding a person that can actually sign is a problem.

Q. Okay. You do have some 81.72 percent signed up?

A. Yes, sir, already ratified.

Q. Wiser, being the only working interest owner, is going to be 100 percent cost-bearing, right?

A. That's correct.

MR. STOVALL: Let me go back on those numbers. What is the percentage of the uncommitted overrides as to the total of the noncost-bearing interests? Do you have that?

MR. COOTER: Including Phillips, is a little under 19 percent. If you'll look at Exhibit B to the unit agreement, you'll see that

the overrides are rather split. They're all fairly small with the exception of the one on Tract 1 and Tract 2. The other interests are on, Phillips is the--

MR. STOVALL: Let me back up and make sure we're talking about the same thing. Under the Statutory Unitization Act, you don't have a working interest problem, because you've got a hundred percent?

MR. COOTER: Right.

MR. STOVALL: You have to get 75 percent approval of the noncost-bearing interest?

MR. COOTER: Correct.

MR. STOVALL: Which includes both overrides and royalties?

MR. COOTER: Yes.

MR. STOVALL: Now, my assumption is, is that with 12-and-a-half percent state and federal royalties, that probably--am I correct that that constitutes at least 75 percent of the noncost-bearing interest?

MR. COOTER: I didn't add that up, Mr. Stovall.

MR. STOVALL: What you do is, you

essentially lump the overrides and the royalties together. So, I think what you need to do is make sure that you have satisfied that. And I guess if you only have 19 percent of the overrides who haven't committed--what is the total? Do you know what the total burden is, the overriding royalty burden on the entire project? Or, conversely, what's the net revenue interest on the project?

MR. COOTER: Wiser's net revenue interest is just about 80 percent. It's a little under that on Tracts 1 and 2. It's almost 87 on Tract 3. It's 77 on Tracts 4 and 5. It's 80 plus a fraction on 6. It's just under 80 on 7. It's over on 8 and 9. It's just a fraction under on Tracts 10 and 11. It's a fraction over on Tracts 12 and 13.

In that 81.72 percent, I have included the federal and state as approving. The federal, as you will note on some of the tracts, has a reduced royalty. On Tract 2 it's five percent, on Tract 3 it's .037. I think those are the only royalties less than the customary 12-and-a-half.

I also would state that, as you'll notice on Tract 7, there was a net profits

interest which, when this was prepared, was owned by Caspin Oil, Inc. That appears on page 6 of Exhibit B to the unit agreement. That interest has been acquired by Wiser.

MR. STOVALL: So, when you say you have an 81 percent approval, that includes the federal and state royalties?

MR. COOTER: Yes, sir.

MR. STOVALL: And the overrides? That was kind of what I was trying to get at in the first place, and that satisfies the 75 percent noncost-bearing interest?

MR. COOTER: I think so. And the way I calculated that was taking the interest from that exhibit, and applying it to the tract participation under the proposed unit, and came up with that 81.72 percent.

As I said, that does not include Phillips, which has indicated that--I don't know whether it's in Houston or Bartlesville or where it is, but the indications are that they're in accord.

MR. STOVALL: That's pretty scary, Mr. Cooter, having a lawyer do all that arithmetic.

MR. COOTER: I agree.

THE WITNESS: Do we need to furnish you anything on that?

MR. STOVALL: No, as long as I know the basis for the calculation, and it appears to have satisfied.

MR. COOTER: I have copies of the ratifications with me. Or, if you would like us to wait a little bit longer, until we get everyone?

MR. STOVALL: Technically, if you read the statute, you're supposed to get the ratifications after the order is entered. You've got six months. So, what you need to do is submit your ratifications within six months of the time the order is entered, and that will solve that.

EXAMINATION RESUMED

BY EXAMINER CATANACH:

Q. I have a question on the letter from the Commissioner of Public Lands, which states that they received your unit agreement on behalf of Quality Production Company.

A. Quality Production Company is the operator of these properties for the Wiser Oil Company. Wiser owns the properties. They're the

working interest owner. Quality is the operator, as a contract operator for Wiser on the properties.

MR. STOVALL: Who is the operator of the wells of record on the OCD--

THE WITNESS: Wiser.

MR. STOVALL: Wiser is? Wiser is the responsible party for these wells? Wiser is responsible for paying royalties and taxes and plugging wells, and Quality is somebody who is paid to go out there to do the work?

THE WITNESS: We're like a contract pumper. We're the contract operator of the property.

MR. STOVALL: So, as far as we're concerned, we're dealing with Wiser, and we couldn't care less who Quality is?

THE WITNESS: That's correct.

EXAMINER CATANACH: But on the unit agreement, is the agreement going to be signed on behalf of Wiser or Quality?

MR. COOTER: It will be signed by Wiser. When you're talking about that, one thing that you may question sometime is the operating agreement. There is no operating agreement.

MR. STOVALL: Probably the answer to this would be clarified if, let's see, Mr. Cooter, apparently you submitted it. Did it go in on Quality Production letterhead?

MR. COOTER: To the BLM and the state?

MR. STOVALL: Yes. Well, the BLM letter is to Quality Production Corporation, too. I think what you need to do is make sure that you get those approved. You need to make sure that both regulatory agencies know that Wiser is the operator of the property. The BLM one says, "Quality, submitted on behalf of Wiser," and the State Land Office says, "Rodey law firm, submitted on behalf of Quality."

THE WITNESS: Here's the letter we submitted to the Land Office, and we said it was submitted on behalf of Wiser, but we did the work as the operator.

MR. COOTER: It's Wiser's bond.

MR. STOVALL: Well, I'm going to make a suggestion to you, is that you not refer, because they become, kind of, terms of art, is that you not refer to Quality as the operator, but refer to them as the contract operations manager, or something like that. That will keep the

bureaucrats from getting confused. Wiser is the operator and Quality is the contract manager, I guess is probably the cleanest way to do it.

I understand what your distinction is, but when you put it on paper, it's not as clear. Because operator is a term of art in the regulatory world.

THE WITNESS: Okay. Do you need a clarification letter on that?

MR. STOVALL: I don't think we do. It's on the record. But with the Land Office and the BLM, you need to make sure that they report Wiser as the operator of the project.

EXAMINER CATANACH: Yes. The orders we issue will be on behalf of Wiser.

THE WITNESS: That's correct.

MR. STOVALL: Again, what that means, too, when you submit reports to the Division, as far as production reports, those should be submitted in the name of Wiser, or they won't be accepted. Don't put Quality's name on it. Unless it says, Quality, as agent for Wiser.

THE WITNESS: Right. No, the heading on all those reports we file are filed in the name of Wiser.

EXAMINATION RESUMED

BY EXAMINER CATANACH:

Q. Mr. Williams, does the unitized interval surface to 5,500 feet, is there a type log within the unit agreement that we're going to use to identify that?

A. Is there a what?

Q. A type log, or a well we can use to identify that interval?

A. The reason we asked for it in that manner is the rights that we finally obtained all just say, "From the surface to 5,500 feet below the surface." It's not actually a stratigraphic interval. The formations in this area are relatively flat. The depth that Wiser has, and we would like to include it all, is to 5,500 foot below the surface.

Q. Does that include or go down to the base of the San Andres?

A. That's approximately--it's probably, what, 300 feet above the real base of the San Andres, yeah. And that's probably through all the known producing intervals that have been completed in the San Andres.

MR. STOVALL: In other words, what

you're saying to us is that your rights are not measured by formation, but by vertical measured footage?

THE WITNESS: That's correct. It was just a depth designation. And it's common. It's not always stratigraphic. Sometimes they'll say to the base of the San Andres, or to the top of the San Andres, and other times they'll say 50 foot below the depth drilled in the first well, so that will just give you depth. And it's not stratigraphic.

If it doesn't go over too large an area, the stratigraphic change is minimal.

MR. STOVALL: I think I heard you say a minute ago that, to the best of your knowledge, below that 5,500 foot, to the extent you're still in the San Andres, there's no productive formation anyway?

THE WITNESS: I'm not aware of any production in the San Andres deeper than that.

MR. STOVALL: So you're not likely to get the owner of those rights to go out and start drilling a well, and put a well on your proration unit, below your unit--

EXAMINER CATANACH: In the same pool?

MR. STOVALL: Do you follow what we're saying?

THE WITNESS: I see what you're saying. I wouldn't expect it, but I'm not aware of any productive prospects below that 5,500 depth limit in the San Andres.

When we started working on the project, these leases were all individuals leases, and they had all been farmouts from Phillips. And each lease had a different depth limit, and depth limits varied from 4,000 to 5,200, I think.

And, through quite a bit of negotiation, we went back to Phillips and got them to revise all those farmout agreements to grant the 5,500 depth limit over this entire area. So we had something consistent, and didn't have additional depths drawn on each tract in the unit.

MR. COOTER: I might add in that regard, just to supplement, the overriding royalty owners treated it as farming their interests to the 5,500 foot depth, even though they may not--

MR. STOVALL: It seems to me we had that discussion prior to your filing this case,

as to how to treat that, didn't we?

MR. COOTER: We treated it as if they own it clear to the 5,500 feet. There are no penalties attached to any of the interests.

Q. (BY EXAMINER CATANACH) The BLM and State Land Office don't have any problem with the tract participation?

A. No. They were in agreement. Their big command was, don't use any acreage in the formula.

MR. STOVALL: Is that what they said?

THE WITNESS: That was the desires of BLM.

Q. I missed some of the figures. If I originally heard right, you said 52 million barrels original oil in place?

A. We determined volumetrically at 52 million barrels.

Q. Cumulative production to date, and that means to when?

A. I think it's the beginning of 93.

MR. STOVALL: Has there been any production, to speak of, in 93?

THE WITNESS: In the engineering report, I think that's on--yeah, 7/1/92, is when

the report was done. The cumulative figure they used at the time of the report was 7/1/92, 10.18 million barrels.

Q. Okay. Now, you gave me a number after that about the primary number?

A. We've estimated that the primary was 4.6 million barrels.

Q. Roughly, or about nine percent?

A. That's right.

Q. And the rest?

A. To get to our present cumulative, you would have about 5.58 million barrels of secondary oil that was recovered from the unit area. And then we've estimated that the remaining recovery that you would get, with a continuation of the present mode of operations, would be 636,000 barrels.

And I think those numbers are detailed in both the Table 1 and Table 2 of our exhibit, being the Waterflood Redevelopment Study.

Q. Were there waterfloods that were originally conducted, were they 80-acre five-spot?

A. Yes, they were all 80-acre five-spot patterns, with conversion of every other existing

location to injection.

Q. Were there any areas that were developed on closer than 80-acre five-spot?

A. Exhibit 8 in the report shows the pattern development for that waterflood. There were some infill wells that were drilled on four or five of the leases as evaluating what they thought of it at that time. There were, I think, four infill wells that were drilled back through the years, but, other than that, everything is 80-acre five-spots, 40 acres per well.

Q. 6.8 million barrels, estimated additional recovery as a result of waterflood operations?

A. That's correct. That's what we estimate that this program would recover, and that's additional oil over and above that remaining estimated recovery of 636,000 barrels from continuation of the present mode of operations.

Q. Okay. 23 million dollars, total cost of the project?

A. That's correct. This is, what I guess you would call, capital costs. That's in addition to your operating costs, which I think

there's another about 46 million dollars in operating costs estimated to carry out the project over the years. $42,500,000 are the estimated operating costs, so your total costs, then, would be 65 million dollars.

Q. Phase I, II and III, you gave me some numbers. Phase I you're going to drill, was it, 10 wells?

A. That's correct. There will be 10 infill wells drilled.

Q. Do you know how many injection wells converted in Phase I?

A. Yeah. The Tables 10, 11, 12 and 13 detail those conversions that will be made. The wells will be drilled. In Phase I we're going to drill 10 wells, and there will be a total of 21 injectors, total injections. 12 of them will be conversions from producing wells, and nine of them will be workovers of existing injection wells.

The costs are broke out, then, on how much the estimated cost is for the drilling of the infill wells, how much cost is for conversion of injection wells and workover of injection wells and facilities; a complete break out of

those costs is provided on those tables by Phase. Tables 10, 11 and 12, and then the total summary on Table 13.

Q. Am I correct in adding up my figures, you're going to have 92 injection wells? Is that right?

A. That sounds high. 86 total injectors.

MR. STOVALL: 86 injectors and 59 producers, is that correct?

THE WITNESS: That's correct.

Q. Now, are you attempting to permit all 86 injectors at this time?

A. No, just--

Q. Phase I?

A. Phase I injectors, which are tabulated in our requests and shown on the maps in the Phase I program.

MR. STOVALL: If Phase I is successful, you'll come back and ask for Phase II and III?

THE WITNESS: We'll ask for those by separate submittal of C-108. And we would like to ask that that be set up where that could be done administratively, if possible.

Q. Of the wells that we're permitting for Phase I, the injection wells, do you know if any

of those have previously been permitted as injection wells?

A. Oh, yes. Nine of them, I believe, are current injection wells.

Q. How many?

A. I believe it's nine.

MR. STOVALL: Are they included in the tabulation in your current C-108?

THE WITNESS: Yes.

MR. STOVALL: You're asking that the prior approvals be withdrawn and the new approvals be issued with this order?

THE WITNESS: Simultaneously, yes.

Q. Mr. Williams, your C-108 shows a typical injection well.

A. That's correct. The first page in Exhibit B shows the proposed physical set-up for our injection well, typical injection well.

Q. Okay. But you do provide all the information necessary for each injection well you want to utilize?

A. Yes. Following that, then, is the physical data on the physical condition of each injection well, with the schematic of that well on the reverse side of that tabular data.

Q. How many injection wells are we permitting in Phase I?

A. 21. And, as we pointed out, nine of them are current injection wells, and they're diagrammed as they exist.

Q. Okay. Have you examined the area of review wells and are satisfied that they're cased and cemented properly to confine that water to the Grayburg and San Andres?

A. From the review we made, they all appear to be in reasonable condition to contain the water. One of the safeguards that we have in this particular recommended program is that the injection wells are going to be all our existing wells, so all of the existing wells will be worked on, converted to injection over a period of three phases, and then monitored.

So the older wells, in effect, will be worked on, to satisfy the Commission, as the C-108s are approved on each of those, and then monitored. And the producing wells will be the newly drilled wells, and our set-up there is to cement those strings to the surface.

So you won't have old wells there in the area that aren't monitored and aren't really

put in condition like we have to for the injection wells. Probably our only risk wells are the P & A'd wells in the area.

MR. STOVALL: You've examined each of those wells?

THE WITNESS: I've examined those. They look like they're adequately cemented. That information is all provided there in what is Exhibit D.

Q. I thought I saw something somewhere that would show a typical new producing well, and I made a mental note that that was not circulated to surface. Are you now saying it is your intent?

A. We didn't submit any diagram of a typical infill well or anything. But, yes, the infill wells, our plan is to use 1,300 feet of 8-5/8, cement it to the surface, and 5-1/2 to TD, and cement it to surface.

Q. Okay. I was looking at something else.

EXAMINATION

BY MR. STOVALL:

Q. Okay. Let's take a look at your EOR tax credit and some of the things that are going

to affect that, because you kind of have an existing flood that really isn't. I guess that's what it really is, right?

A. It still has existing orders, but as a waterflood, I think we recognize that you have to put in more water than the fluids that you're removing, to have an ongoing flood. You're not flooding if you're taking out more of the reservoir which are greater than the injection. And all they're injecting now is the produced water.

Q. "They" being Wiser?

A. Well these leases, when we acquired them, we just continued their operation since we acquired them while we've been putting this project together.

Q. You are satisfied, in your professional opinion, that you really are starting from scratch, you may have a little bit of fill up, but you don't have a waterflood going on? Well, you don't even have that if you're taking out more than you're putting in, right?

A. We're taking out more than we're putting in, and have been for some time.

Q. Okay. That's fine.

A. As far as the oil volume and the gas volume. And it's an entirely new project in the fact that we're going to be going to a 40-acre pattern, which is significant in increasing your recovery. Going back to an 80-acre pattern, we don't think, surely, would be economic, and would recover very little additional secondary oil.

Q. Let me stop you right there, then, and ask you the next question which you've kind of lead to, how much of the 6.8 million that you expect to recover is simply as a result of infill drilling? If you didn't put water in at all, how much oil would you get out of those wells?

A. We consider the entire 6.8 million barrels as a result of the waterflood program. The reason for the infill wells, that's the facility of the waterflood program. If we convert all the existing wells to injection, to get 40-acre patterns, then we have to have producing wells in the center of those patterns, and we have to drill the infill well.

This is a facility, just like your distribution system for your water injection and your pumps and battery facility, is part of the waterflood operation, the infill wells.

EXAMINER CATANACH: There's not going to be any delay in implementing injection operations? They're going to be commenced--

THE WITNESS: No, sir. We think the example we've seen from the Avon project and the Cross-Timbers project, when you support the producing well, the infill well with injection immediately, your recoveries are much better.

Q. (BY MR. STOVALL) Okay. Let me kind of lead you through the process of the qualification process, so that you dot the right I's and cross the right T's, and, of course, there will be a couple of questions.

Now, as far as an EOR project from your plans, and what you're asking for today, the EOR project which, if this is approved to be certified, could only be, at this point, Phase I, and that is actually to your advantage. You are familiar with the EOR rules?

A. You have to have the response within five years.

Q. Within five years we issue-- And that is five years from the date we issue the certificate, not necessarily from the date we start the order. What we have done, particularly

where there's development and construction work to be done, is issue an order authorizing you to do that work. Then, when you are ready to actually commence injection, you come back to us and request a certificate. Are you following me?

A. Okay.

Q. How long do you think it would be before you would be prepared to begin injection in Phase I?

A. I would say within a month or two after we receive the authority.

Q. So, you don't have any wells to drill?

A. Yes, we'll have the wells to drill, and we'll begin--

Q. Even before you get all the wells drilled?

A. --drilling the wells and begin the injection immediately.

Q. Okay. So, in effect, when we issue this order, we can issue the certificate at that same time, and we're not cutting you out any construction time?

A. That's right. That would be fine with us. And, as I understand it, this will just cover the area that Phase I encompasses?

Q. That is correct. That certificate will encompass the area that Phase I encompasses. Now, what I would anticipate, again, assuming approval, is that there may be incorporated in that approval the administrative authority to file C-108s on Phase II and III.

At the time those C-108s are approved, you could then, when you're ready to begin injection, you could come back in and say, "Give us the certificate for Phase II," and then the certificate for Phase III. That would start the clock running on those phases, so your five years wouldn't begin on those five years until you were actually ready to begin injection on those phases.

I guess what that means, at this point, any authority to inject in Phase II and III is going to have to be terminated. You couldn't put any water in, even for just disposal purposes. Obviously, you wouldn't just dispose there. I assume you don't want to, right? All the water would go into Phase I?

A. It would probably be to our advantage to be able to inject in the wells down on the Section 28 lease. That's the Phillips State "B"

lease in Section 28. The injection well down there, that's a separate battery and a separate injection system.

As we're developing this thing, if we could continue to dispose the water into those wells down there, it would facilitate the conversion and not have to lay the line to the north.

Q. What my concern would be is that your injection is under an authority that was issued back in the 60s or 70s, right?

A. Right.

Q. Which would mean that that is not a project approved after the effective date of the Act, which would mean it could not qualify for the recovery tax credit. You get into some fancy footwork here, with dates and approvals and things.

A. We can't do anything down there and then come back in Phase II and want to include it in the tax treatment.

Q. Let's put it this way. What you could do, conceivably, to deal with Section 28 on a short-term basis, we would rescind the previous authorities, approve that, and you could come

back in with a C-108 and get an approval to inject in there, current, within the next couple of months, say.

A. What would that do to our future qualification for EOR designation?

Q. What I'm suggesting is that you would rescind any prior authority you had. You're treating that as a disposal operation at this time, is that correct?

A. That's right.

Q. My concern is, if you treat it as a disposal operation under an authority given to you--prior to 1992, is it? I've forgetten the year--and you use that as your authority to inject, then you have, in fact, gotten a project approved prior to the effective date of the Act, and that project doesn't qualify.

So the cleanest way on this one, for that, would be to cease injection in that area at this time, get it approved under this order, and then file your expansion C-108, since you haven't submitted it in this C-108 today, file an expansion C-108 and get approval to inject under the terms of this order, which is after the qualifying date.

A. Okay. And let us, in the meantime, look whether we want to handle it in that manner or whether we would want to make facilities to transfer that water to our north station and put it in Phase I wells.

Q. Correct, because an expansion project has to be more than just simply taking disposal and adding more water to it and turning it into secondary.

A. Yes, we realize that. And, for the short term, we don't want to jeopardize that position. So we'll make arrangements to do it as a new C-108.

Q. The next step, once you get that approval and the project area is certified, you begin your work and you do your flooding, at some point, hopefully within five years, you'll get a positive production response.

The key is, you have to apply to the Commission for approval or certification of that positive production response within five years. If you get it next year and wait four years to do it, you could still be out of luck, because the date is when you apply for it to the Commission, not when you actually get it.

Once we certify it, it's retroactive to the date we certify as the beginning date. What we're recommending is that you make sure you have a true positive response over time. And, when I'm saying "time," we're talking months, not years, before you come in for your application, so you don't have a blurb, just because you've taken care of the wells and done a little maintenance work out there, as a true response.

Now, the problem I see with this one, and it's something you need to be prepared to address is, what is your baseline production, say, in each of the phases, over which a positive production response will be determined? And that is something, you know, you had some curves in here I believe, didn't you?

A. Yes. There are production curves by lease there.

Q. What you're going to have to do is establish the baseline decline for each of the phase areas.

A. What is the shortest term that would be acceptable for establishing that? because we're talking about drilling infill wells for the producers.

Q. That was my concern, because you're going to get a bubble of response because you'll hit a little oil that has not been tapped before, right?

A. Yes, there's some untapped reservoir energy.

Q. And, from the standpoint of the secondary recovery--I mean, I understand what you're saying from the management standpoint, but from the regulatory standpoint, the question whether that's primary or secondary, is that, in fact, response to secondary recovery operations or is that response to drilling operations?

As a lawyer, I'm asking you an engineering question. You have to come up with an engineering response to, what is the baseline--

A. Establishing a baseline for those wells? We'll just have to take a look at that. We'll take a look at some of the experience, say, that Cross-Timbers had on their project. And we're doing a similar project in the Maljamar Unit right now. And we've drilled the infill wells and started the injection program.

Q. I guess that's really the key to it, is

establishing, you know, how do we know it's a positive production response and not just a taking-care-of-the-property response.

A. We'll take a look and see what can be done on that to justify.

Q. And, just for your information, we can give you lots of guidance on that because we've had absolutely none of them come before us as of this point in time.

A. Really?

Q. We've gotten no production response cases yet, so there's no guidance whatever to assist you in making that determination.

A. We'll get you one, and we'll work it out.

MR. STOVALL: I guess that's pretty much it, from a procedural standpoint. Your biggest problem here is getting that baseline so you know when you've got the response.

Did I leave out anything?

EXAMINER CATANACH: I want to bring up the infill drilling issue and discuss it a little bit with these gentlemen.

I've had a couple of these cases before, and I made the determination that in

areas that had been infill drilled on 40-acre spacing, that that really didn't qualify as a change in technology or a change in the process, and I subsequently left those areas out of the EOR.

One of those orders has been appealed to the Commission, and I expect the Commission is going to make a determination on whether or not we're going to allow those areas to be considered for the EOR tax credit. We don't have a decision yet from the Commission, but I expect that pretty soon.

MR. STOVALL: Well, this gets different from that one, however. It is different in the in the sense that you're not applying for an expansion, you're calling this a new project. We have to look at it and say, "Is this, in fact, a new project?"

That was an active flood and the infill drilling was part of an expansion. Factually it's similar; the way it's structured in the regulatory sense it's different, but it is a problem. You're right. It depends on how you approve it, if you approve it.

EXAMINER CATANACH: You have a

one-to-one recovery on old waterflood operations already. Obviously there was some benefit to waterflooding operations in the first place.

THE WITNESS: Oh, yes.

EXAMINER CATANACH: You recovered a lot of oil from waterflood operations. I don't know that I'm going to consider this a new project. I have to look at the information.

But if I don't consider this a new operation, that's going to become critical, and what I think I need from you guys is a map showing us which areas have been infill drilled. I think that would really benefit us when we go to write the order.

MR. STOVALL: Let me throw a wrinkle at the Examiner, because he did not sit in on the Commission case, and we are breeding new ground. I mean, you guys get to be part of the ongoing process of progressive government, I guess.

The issue that was raised at the Commission case is that David said, at the time what he did was look at each well, piece-by-piece, and included certain wells in what he called the expansion and left out the infill tracts, and said they were not part of the

expansion, they were new wells.

One of the questions that the Commission considered in that case on appeal was whether or not you simply look at a project area and that whole area qualifies, and you don't piecemeal it. And he had to do that in his case to get it to the Commission to get guidance from.

What is your timing on wanting to get going on this? Probably yesterday, right?

THE WITNESS: As soon as we can, after we obtain the approvals.

MR. STOVALL: I am going to recommend to you that, if you have a little patience, and I'm talking a month or two in terms of getting an order, if we can let the Commission act, you have the sense of what he has done historically, and the Commission has looked at it and said, how do you qualify a project area and a whole bunch of questions came up. They may give him some guidance that would affect the way he would rule on this case.

As I say, he didn't sit in on the Commission case, so he doesn't know what I know about what they considered and what they asked

about. At this point, I would recommend that you would simply ask the Examiner to wait until the Commission acted.

That case was heard on February 10th, so presumably there should be an order coming out in the relatively near future on that. We're not talking six months or a year wait.

THE WITNESS: You're talking a month or two?

MR. STOVALL: A month or two. And what it means, if he goes the way he did the first time, you're going to come back before the Commission, anyway, and ask them to clarify it. It will cost you two or three months there, so why not wait until they clarify it in the existing case?

My thinking is, if they go with the Applicant in the existing case, you're probably in better shape, because his was an active flood that was infilled and their expansion was in terms of infill and a closer injection pattern. Yours is an inactive flood.

THE WITNESS: In effect, yes.

MR. STOVALL: Which is in the same boat. So, if that's--I guess it's the Examiner's

discretion, but it would certainly be in his best interest to, I assume, wait.

EXAMINER CATANACH: Does it affect Phase I at all?

MR. STOVALL: Yes, because Phase I is mostly infill, if you look at the map. How many new wells in Phase I?

THE WITNESS: 10 new wells to be drilled.

MR. STOVALL: Do you remember which page?

MR. COOTER: Page 17.

MR. STOVALL: Each of those would be a new tract, in effect. You really only have one tract that would not be affected that would benefit. If you take the infill approach--

THE WITNESS: I don't know what you mean by "the infill approach."

MR. STOVALL: What David is talking about, you have to get your infill wells and the infill wells don't qualify as an expansion.

EXAMINER CATANACH: I'm saying that those areas that have already been infill drilled, in the past I've had two orders that I've said those don't really qualify for the EOR

tax credit because they've been infill drilled, as part of a continuing process to waterflood, and a pattern of reduction.

So it was that I didn't qualify those areas. I said, "We've got to leave those out." That's what I did in those two previous orders.

THE WITNESS: Oh, I see.

EXAMINER CATANACH: What I'm telling you guys, they appealed that to the Commission to try to get my decision reversed, and we're going to have a decision on that from the Commission any day as to whether those areas that have been infill drilled should qualify for the EOR tax credit. It doesn't affect your Phase I except for that one tract.

MR. STOVALL: Yes, it does, because they're going to infill all these locations.

EXAMINER CATANACH: Yeah, but they have not been infilled yet. What I'm saying--

MR. STOVALL: Yeah, but would you qualify those?

EXAMINER CATANACH: Yes. Those have--

MR. STOVALL: Oh, I see what you're saying.

THE WITNESS: I see what you're saying,

David. The only thing in jeopardy would be the patterns where the infill well has already been drilled?

EXAMINER CATANACH: That's correct. So, really, in Phase I, you're not really that badly affected.

MR. STOVALL: I was misinterpreting your last order. Sorry about that.

EXAMINER CATANACH: That's why I wanted a map to show where the infill drilling has taken place. And it doesn't look like there's been a whole lot.

MR. STOVALL: Well 17, how long has that well been there?

MR. HUGHES: It was drilled in 1972.

MR. STOVALL: Let's get a feel for when that Commission order is coming out, because that would clarify the issue. Virtually, all of your production wells, new production wells, are going to be infill wells that have yet to be drilled, is that right?

THE WITNESS: That's correct.

EXAMINER CATANACH: I would say, just on the basis of a pattern of reduction, you have a real good chance of getting it approved for the

EOR tax credit based on that. Not based on the fact that it's a new project; but the infill drill pattern of reduction is what's going to carry you over on this one.

Maybe the Commission--it will probably be at least three or four weeks before I get an order out on this, so maybe by then we'll know how the Commission is going to decide.

MR. STOVALL: I stand corrected on some of the things I said, because I was thinking they were infills to be done, and these are--in other words, the money had been spent. The incentive value of the credit was gone because the money was already spent.

THE WITNESS: Let us check back with you, maybe, in two or three weeks to see what the status of that is and so forth, and then we'll see where we are then.

EXAMINER CATANACH: It's not going to be a major effect on the thing anyway.

THE WITNESS: No, and you'll be considering ours in the meantime, the other features of it, is that correct?

EXAMINER CATANACH: What I could also put in the order was a provision that if the

Commission decides that previous infill drilling should qualify, I could always reverse it somehow in the order. I don't know. We can talk about.

MR. STOVALL: Yes, I see what you're saying. I don't think there will be mutual delay for what you're going to do.

You have two approvals. One is, the approval to do what you want to do; and the second part of that is saying, yes, it qualifies. On a totally new project, those are the same thing. The approval to do what you want to do automatically qualifies you for the tax credit.

On a project such as this, that is not the case. You have to determine, is it an expansion, is it a legitimate expansion, does it do the things that the Act intended for you to do. So, that's where there's some confusion on this one.

THE WITNESS: Let's go ahead and take ours into consideration and, before you write the order, we'll contact you and see where we are on the Commission decision, if that influences it in any way. Can we proceed that way?

EXAMINER CATANACH: Yes. And if the

Commission does decide against my original thought, you can always come in and very simply, I would think, amend your order to get those tracts included in the EOR.

MR. STOVALL: In Phase I, there would only be one tract affected.

EXAMINER CATANACH: Okay. Let's move on.

MR. STOVALL: I don't have any more questions. Are you done? You swore a second witness, Paul.

MR. COOTER: I think we've covered it all.

MR. STOVALL: I couldn't think of anything to ask him.

EXAMINER CATANACH: And who is that? Are you a geologist?

MR. HUGHES: Yes.

EXAMINER CATANACH: I would like some testimony in the record, and I think it's needed, as to the benefit of going from an 80 acre to a 40 acre five-spot pattern.

I don't know, maybe Mr. Williams is more appropriate to give some testimony for that.

[Discussion off the record.]

EXAMINER CATANACH: Let's take five minutes and maybe discuss this off the record or something.

[A recess was taken.]

MR. STOVALL: After a break, we've discussed the necessity of putting additional evidence in with respect to some geological considerations in the reservoir, and I think we've determined that such testimony is not necessary at this time.

EXAMINER CATANACH: Do you have anything further in these cases, Mr. Cooter?

MR. COOTER: No, sir.

EXAMINER CATANACH: There being nothing further, Case Nos. 10930, 10931 and 10932 will be taken under advisement.

(And the proceedings concluded.)

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 10930, 10931, 10932 heard by me on March 3 1994.

David R. Catanach, Examiner
Oil Conservation Division

CERTIFICATE OF REPORTER

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

I, Carla Diane Rodriguez, 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 5, 1994.

Carla Diane Rodriguez

CARLA DIANE RODRIGUEZ, RPR
CSR No. 4