STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO

17 October 1985

COMMISSION HEARING

IN THE MATTER OF:

Application of Yates Drilling Company for a pressure maintenance project, Chaves County, New Mexico. CASE 8502

BEFORE: Richard L. Stamets, Chairman
Ed Kelley, Commissioner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

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I N D E X

E X H I B I T S

MR. STAMETS: We'll call now Case Number 8502.

MR. TAYLOR: The application of Yates Petroleum Company for a pressure maintenance project, Chaves County, New Mexico.

MR. STAMETS: Call for appearances in this case.

MR. CARR: May it please the Examiner, my name is William F. Carr, with the law firm Campbell and Black, P. A., of Santa Fe.

We represent Yates Drilling Company and we have one witness.

MR. STAMETS: Other appearances today?

MR. DOYAL: Clarence Doyal, Roswell, New Mexico.

I'll be the only one to appear for this.

MR. STAMETS: You're representing yourself?

MR. DOYAL: I'm representing the Doyal family.

MR. STAMETS: I'd like to have -- are you going to present testimony, Mr. Doyal?

MR. DOYAL: Yes, sir.

MR. STAMETS: I'd like to have you and the Yates witness stand and be sworn at this time.

(Witnesses sworn.)

TOBIN L. RHODES,

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

DIRECT EXAMINATION

BY MR. CARR:

Q Will you state your full name, please?

A My name is Tobin L. Rhodes.

Q Where do you reside?

A I reside in Artesia, New Mexico.

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

A I'm employed by Yates Drilling Company as a petroleum engineer.

Q Mr. Rhodes, have you previously testified before the Commission or one of the Division examiners and had your credentials as a petroleum engineer accepted and made a matter of record?

A Yes, I have.

Q Are you familiar with the application filed in this case on behalf of Yates Drilling Company?

A Yes, I am.

Q And are you familiar with the subject area?

A Yes, I am.

MR. CARR: We tender Mr. Rhodes as an expert witness in petroleum engineering.

MR. STAMETS: He is considered qualified.

Q Mr. Rhodes, would you briefly state what Yates Drilling Company is seeking with this application?

A Yates Drilling Company is seeking authorization to inject produced water from the Queen formation into the Doyal No. 3 Well for the purpose of pressure maintenance in the Queen formation.

We believe that by doing so waste will be prevented in two ways: The decline in reservoir pressure will be slowed causing an additional oil production; and the expense to haul and dispose of produced water will be avoided.

Q Have you prepared certain exhibits for introduction in today's case?

A Yes, I have.

Q Would you refer to what has been marked

as Exhibit Number One, which is the first document in the packet of exhibits, identify this, and review it for the Commission?

A Exhibit Number One is the NMOCD Form C-108 and a supplemental text regarding our application. The supplemental text addresses each of the fourteen sections of the C-108. All maps, schematics, and tabulations referred to in this supplement will be included as separate exhibits.

This exhibit identifies the injection zone as the Upper Queen Sands from subsea +1435 to +1429 in the Doyal No. 3 Well.

It also identified the source of injection water as produced water from Queen wells in this area.

Q When was the Doyal No. 3 Well drilled?

A The spud date on the Doyal No. 3 was 9-20-84.

Q And what is the present status of the Doyal No. 3 Well?

A This well is presently temporarily abandoned.

Q Would you now refer to Exhibit Number Two, which again is in the packet of exhibits, which is a plat of the area, identify this plat and review the information contained thereon?

A Exhibit Number Two includes a land plat showing the area around the subject well. A 2-mile circle has been drawn around the Doyal No. 3 Well to identify all lease ownership within two miles.

A smaller circle with a half mile circle, I mean a half mile radius, has also been drawn on the map to identify the area of review for the proposed injection well.

Q Would you now refer to the second --

MR. DOYAL: Would it shorten this just to say we'll go along with that. We don't need that. It's a matter of record here, all of it is, and I have a copy of it; the Examiner has a copy. It's already been heard.

MR. STAMETS: All right, in other words there's no disagreement with the quality of the injection well --

MR. DOYAL: None whatever; none with the quality of the engineer's work right there --

MR. STAMETS: -- the quality of water to be injected --

MR. DOYAL: -- with the exception of elevations.

MR. STAMETS: -- or any of the technical details.

Mr. Carr, do you --

MR. CARR: Mr. Stamets, since this is a de novo proceeding and since your rule on Form C-108 requires that certain information be presented, it won't take us very long, but we do think it needs to be included in the record.

MR. STAMETS: Okay.

MR. CARR: We'll try and go as quickly as we possibly can.

MR. STAMETS: That's fine.

Q Would you now go to the second page of this exhibit, Mr. Rhodes, and just identify that and what is shown on that exhibit page?

A The second page of the exhibit is a map of the area. It identifies all wells within the area of review which is a half mile radius from the proposed injection well.

As you can see, there are eleven wells other than the proposed injection well within the area of review.

Q How many of the wells within this area of review are not operated by Yates Drilling Company?

A Three of the wells are operated by other operators other than Yates Drilling Company.

Q Can you identify those, please?

A Two wells are operated by Bell North Com-

pany, the Apache State No. 1 and the Apache State No. 2, on the western edge of this area of review.

On the eastern edge you see a well called the Toles Federal No. 1. This is operated by Snow Oil Company and to my knowledge this has been since plugged.

Q Would you now go to Exhibit Number Three and identify this, please?

A Exhibit Number Three contains tabular data on all wells within the area of review. Each tabulation identifies a well, gives the location and information on how and when the well was drilled and completed.

Q Does this information -- does this table contain all the information required by Division Rule -- Division rules and Form C-108?

A Yes, it does.

Q And was this information previously submitted to the Division in accordance with its rules and again the C-108 form?

A Yes.

Q Would you now go to Exhibit Number Four and identify this?

A Exhibit Number Four includes a downhole schematic of both plugged and abandoned wells within the area of review.

The first page is a schematic of the Rich Federal No. 1 Well, which was drilled by Yates Drilling Company and plugged because the Queen formation was wet and had low porosity.

The second page is a schematic of the Toles Federal No. 1 Well, drilled by Snow Oil Company. This well was perforated in various places from 2344 to 2845 and to my knowledge produced nothing but water.

Accordingly Snow Oil had just recently plugged and abandoned this well.

I want to point out that this schematic is of proposed plugging procedure. A subsequent report of plugging has not been filed.

Q Would you now go to Exhibit Number Five, identify this, and review the information on this exhibit for the Commission?

A Exhibit Number Five is the proposed downhole schematic of the Doyal No. 3 Well if injection is approved.

As you can see, the casing and cement programs are shown, as are the proposed tubing and packer. I'd like to point out the question three on the lower portion of this page, that question "Is this well a new well drilled for injection?" The answer to that is no. This well was drilled with the intention of producing oil from

the Queen formation. The well is perforated in the same porosity interval within the Queen as were other wells in the area. Production testing from this well resulted in no measureable amount of oil. The fact that the well was not capable of making any oil but had good porosity, made it a candidate for our proposal.

Q Now what is the perforated interval in the well?

A Well, that's the upper six feet of the Queen and that's from 2191 to 2997.

Q Will the tubing be lined?

A Yes.

Q And do you propose to fill the annular space with a fluid?

A Yes.

Q And will Yates Drilling agree to the pressure testing of fluid in this annular space as required by the Federal Underground Injection Control Program regulations?

A Yes.

Q What is the source of the water that you propose to use as injection water in this pressure maintenance project?

A The source of water would be produced water from other Queen wells in the area; the water asso-

ciated with oil production.

Q And what's presently being done with this water?

A We're hauling this water at a cost of $1.00 per barrel. It's over a month's time come to between $5000 and $6000.

Q And what volume is Yates Drilling Company proposing to inject in this well on a daily basis?

A We propose to inject approximately 200 barrels a day with a maximum injection rate of 400 barrels per day.

Q Now, injecting 200 barrels a day into this well, how long would it take for there to be water influence on the offsetting wells?

A That's hard to say. In a, you know, ten year period of time, assuming radial flow, the front of the water would be just over 1000 feet from the injection well.

Q And how far away are the offsetting wells?

A The closet well is just over 1500 feet.

Q What impact would, in your opinion, injection of water in the Doyal No. 3 have on the Doyal No. 4 Well?

A Little, if any.

Q And why is that?

A Because of the distance from the Doyal No. 3 Well to the Doyal No. 4 Well.

Q And what impact would it have on the Doyal No. 2?

A I believe that the ultimate production from the Doyal No. 2 would be increased due to this injection into the Doyal No. 3.

Q In your opinion would the water encroach into the Doyal No. 2 Well in such a time frame as to ultimately reduce the production from the No. 2 Well?

A No, I don't believe so. In a period of four to five years this field will require to be plugged or some type of secondary recovery. In a four to five year period of time I don't believe that the radial front of the water from the injection well would be close enough to the Doyal No. 2 to cause any damage.

Q Do you propose to inject under pressure or by gravity?

A Of course, if we can inject by gravity, we will, but we may be required to inject under some pressure.

Q And what would be the maximum pressure that you would propose to use in injecting this water?

A The maximum surface pressure that we would want to use would be 1500 psig.

Q And upon what do you base that figure?

A This is based on the fact that the breakdown pressure from the formation in this area during treatment has been about 1500 psig.

Q Now that pressure is in excess of two pounds per foot to the top perforation in the injection zone. How much pressure do you actually propose to start with?

A Starting pressure, we really don't know what that pressure would be.

Q Is it possible that you could carry on this partial pressure maintenance project with a pressure of

A That may be possible.

Q And how would you recommend that this be dealt with in any order that would result from the hearing?

A I'd recommend that if the initial pressure or the pressure at any time during the project became higher than the .2 pounds per foot of depth to the top of the injection interval, then Yates Drilling Company should be required to run a step rate test within sixty days to justify that higher rate.

Q And if you were able to inject at a pressure of less than .2 of a pound per foot of depth, then testing would not be required.

A That's correct.

Q Would you refer now to Exhibit Number Six back in the packet of exhibits and identify this and review for the Commission?

A Exhibit Number Six is a water analysis report on five of the wells that produce water which will be injected into the Doyal No. 3 Well if the application is approved.

Q And are you re-injecting water into the formation from which it is produced?

A Yes.

Q And do you anticipate any compatibility problems as a result of thisre-injection?

A No.

Q Are there fresh water zones in the immediate area?

A Yes, there are. The fresh water zones in the immediate area is the Ogallala formation, the base of which is estimated to be at 300 feet in this area.

There's also a formation called the Chinle, which is a fresh water zone and it immediately underlies the Ogallala formation and the base of it is estimated to be at 500 feet in this area.

Q Are there any fresh water wells in the area of review?

A Yes. According to the Division II State

Engineer's Office, there are seven water wells within one mile of the subject well.

Q And from what interval are they producing?

A The District Engineer's Office states that the total depth of these wells is unknown but all of them are believed to be producing from the Ogallala formation.

Q Would you now go to exhibit -- Yates Drilling Company Exhibit Number Seven and identify this?

A This exhibit consists of water analyses reports from three of those seven fresh water wells within one mile of the Doyal No. 3 Well.

The first analysis is from a well in the northeast quarter of Section 27, 12 South, 31 East.

The second analysis is from a well in the southeast quarter of Section 26, 12 South, 31 East.

And the third analysis is from a well in the southwest quarter of Section 26, 12 South, 31 East.

Q Now, Mr. Rhodes, the next exhibits are the cross section, and if you would, I think it would be helpful if you'd take the pointer and go to the wall and I'd ask you first to refer to Exhibit Eight-A, which is your A-A' cross section and review the information on that cross section for the Commission.

A Exhibit Eight-A here at the top is a cross section from the Doyal No. 4 Well to the Doyal No. 3 Well, to the Toles Federal No. 1 Well.

The purpose of this exhibit is to show the continuity of the Queen and the oil/water contact in this area.

The lefthand log on each well is the compensated neutron litho density log. The porosity is indicated here highlighted in red on each of these -- each of these wells.

The righthand log on each of these -- for each of these wells is a duolateral microspherically focused log and as you can see, the porosity zone has also been -- corresponding porosity zone has been highlighted on this duolateral log on each well.

MR. TAYLOR: Excuse me, could you tell me again which wells are included in that?

A Okay. This is the Doyal 4, the Doyal 3, the Toles Federal No. 1.

MR. TAYLOR: Thank you.

A In the depth record on these logs is a red box indicating where each well was perforated. I don't have them on here from the Toles Federal No. 1 Well because a completion report had not been filed and the well has been temporarily -- I mean been plugged.

As you can see, each well was perforated in the porosity interval. The porous interval on these wells is continuous across the reservoir. If -- if the wells are perforated above this porous interval, I don't know if you can see it from where you're sitting but the porosity is very low and I believe that to be an anhydrite, so my contention is that these were not perforated too low intentionally or accidentally. They were, in fact, perforated in a porosity zone.

Exhibit Number B, Eight-B, shows a similar thing except that along with the Doyal No. 3 Well is the Doyal No. 1 and the Doyal No. 2 Wells.

MR. TAYLOR: Excuse me, it goes from 3 to 2 to 1?

A It goes from the No. 1 to the 2 to the 3.

Q Now, Mr. Rhodes, in looking at these cross sections, you have selected a porosity zone.

A Yes.

Q Now in selecting that zone what do you -- how do you select that zone? Do you rely on survey elevations of the well?

A No. No. Survey elevations have nothing to do with the interval we -- we select to perforate.

We perforate strictly off of a high porosity kick on the log.

Q And so you're looking simply at the porosity that's apparent from the log.

A Yes.

Q Now, in the original hearing and when you surveyed these wells, were there discrepancies in the survey elevations?

A Yes, apparently there were.

Q And would that have any effect on the cross section as you have depicted in Exhibits Eight-A and Eight-B?

A No, as a matter of fact there were discrepancies on the C-102 form, I believe, the survey; however, the correct elevations were used in all subsea depths and, as I said before, even if they were wrong, there's no influence on where we perforated. We perforated on the porosity zones.

Q Okay, would you now go to Exhibit Number Nine and first of all identify the -- the plat at the top of the exhibit and indicate what it is and what it -- what it shows?

A This map here at the top of the exhibit is a combination structure and Isopach.

The solid curved lines indicate structure at the top of the Queen, and the dashed lines indicate porosity foot value.

As you can see, there's a green shaded area on this map. This green shaded area is the area that we feel like is possibly productive of oil. It is above one porosity foot and above the oil/water ccntact in the reservoir.

Q Will you now go to the second diagram on this exhibit and explain what that is?

A The second diagram is a three-dimensional diagram of the top of the Queen formation.

As you can see, wells are spotted at the intersection at the top of the Queen by an oval and by an "X" where these wells would intersect the oil/water contact.

The oil/water contact is shown here and is also shown by the red line where this oil/water contact intersects the top of the Queen.

Q Now when you say the oil/water contact is shown here, you're talking about the line which is -- appears to be the top of the block into which the structural interpretation dips, is that right?

A Yes, the top of the cross hatched area.

Q And it has written on that line on the top of it the word "oil" and below it "water" and a figure that looks like -1446?

A Subsea of +1446.

Q Okay.

A As you can clearly see, the Doyal No. 3 Well in both the upper map and the lower map is below the oil/water contact.

Q Now, will you to the plat in the lower righthand portion of this exhibit, identify that, and explain what it shows?

A This lower map shows shut-in bottom hole pressure of a well in this area and the purpose for this map is to demonstrate that there's an obvious barrier between wells to the south and wells in this reservoir.

Q Now, in regard to the oil/water contact, where does the Doyal No. 4 Well lie?

A The Doyal No. 4 Well lies just above the oil/water contact, approximately four feet.

Q And again where is the Doyal No. 3 in regard to that oil/water contact?

A The Doyal No. 3 Well is just below the oil/water contact in this reservoir.

Q Now I'd like you to look for a minute at the Doyal No. 3 and in particular the northeast quarter of the southeast quarter of the 40-acre tract on which it's located.

In the top plat on this exhibit you have shaded portions of that 40-acre tract. Would you explain what that shading indicates?

A As I said before, the green shading on this map indicated oil -- I mean an area that may be productive of oil or it has some moveable oil saturation.

There is two different types of cross hatching here. The smaller area is what I believe could be driven across the boundary line if -- if water was injected into the Doyal 3.

The larger area is the area which oil would be driven down towards the Doyal No. 2 Well if water -- if injection were permitted in the Doyal 3.

Q So if we look at that 40-acre tract, the area shaded in green is, based on your interpretation, the portion of that 40-acre tract that has oil on it.

A Yes, it is.

Q And the two different kinds of shading, one portion of it, the finer cross hatching, indicates oil that would be swept off to the west.

A Yes.

Q And the larger cross hatching indicates oil that a pressure maintenance project and waterflooding could move toward the south.

A Yes.

Q Now, looking at just the acreage in that 40-acre tract that is shaded green, wouldn't it be possible to drill an additional well in that 40-acre tract to produce

the oil that is indicated thereon?

A I believe that to drill a legal well, which would be 330 from the west line of this quarter section, or quarter quarter section, and 330 from the south line, you would be very, very close to the oil/water contact.

If indeed you did get into some oil there, you would still have a large amount of associated water and I don't believe that it would be economic to drill and produce such a well.

Q Now, if in fact this application is granted and pressure maintenance is authorized by the use of the Doyal No. 3 Well, what effect, in your opinion, will it have on the correlative rights of the interest owners in that section?

A Well, I believe that without an injection well in the Doyal -- utilizing this as an injection well, part of this oil would probably move west anyway. Part of the oil would probably move south toward the Doyal No. 2 Well anyway.

Q Just by virtue of their producing?

A Yes, they are producing wells; however, I believe a portion of that oil would be left where it is and not be produced.

Q In your opinion could it ever be re

covered without an additional well?

A No, not all of it.

Q And in your opinion, I believe you've already stated that would not be an economic well.

A No, it would not.

Q What would be the effect of granting the application on the -- on the Doyal's interest in the well immediately to the south of the proposed injection?

A I believe this well would ultimately recover more oil than if the application were not approved.

Q And why is that?

A Simply because will be driven southward away from the Doyal No. 3 Well towards the Doyal No. 2 Well.

Q Do you believe it will also maintain pressure in that zone for a longer period of time?

A Yes, I believe so.

Q Do you believe it will impair the correlative rights of the interest owners in either of those quarter quarter sections?

A No, I don't.

Q Now, what is the Doyals' royalty interest in the northeast quarter of the southeast quarter, the 40-acre tract on which the No. 3 Well is located?

A I'm not sure what that -- what the percentage is on that.

Q And do you know what their percentage interest in the tract to the south?

A No, it would be identical but I have no idea what the -- I don't have a good feel for what the percentage would be.

Q Okay, would you now return to your seat, please?

And would you refer to Exhibit Number Ten and identify that, please?

A Exhibit Number Ten is receipts from offset leasehold operators and the surface owner, showing that they received a copy of this application.

Q Are the Doyals either the surface owner or the offsetting interest owners?

A No, they are not.

Q Was notice of the hearing actually provided to the Doyals, however?

A Yes, I did write them a letter on October 1st.

Q Would you then go to what has been marked as Exhibit Number Eleven and included in this packet of material and identify that and explain what these are?

A Exhibit Number Eleven consists of C-102 forms which have previously been filed with the State for each of the wells that we operate inside the area of review.

Q Are these the same C-102's that were offered into evidence at the time of the Examiner Hearing?

A Yes, all but two of them are. As we discussed earlier, there was a discrepancy on two wells, which incidentally, had no bearing on any of my testimony but those have been changed and --

Q Can you identify -- can you identify those two, please?

A The Gallegher No. 1 Well and the Garner No. 9 Well.

Q And who -- by whom were these surveys prepared?

A We use two surveyors. We use a man names Herschel L. Jones and a man named Dan R. Reddy to do our surveys.

Q Are these both professional registered land surveyors in New Mexico?

A Yes, they are.

Q And does Yates Drilling Company use them and has used them in drilling and locating other wells?

A Yes, we have.

Q Are you aware of any application similar to this that has been granted for pressure maintenance in the same general area?

A No.

Q Mr. Rhodes, have you made an examination of the available geologic and engineering data on this reservoir?

A Yes, I have.

Q And as a result of that examination have you found any evidence of open faults or any other hydrologic connnections between the injection zone and any underground source of drinking water?

A No, I have not.

Q Do you also seek an administrative procedure whereby you could add additional wells to this project without the necessity of additional hearing?

A Yes, I would request that.

Q In your opinion will granting this application be in the best interest of conservation, the prevention of waste, and the protection of the correlative rights of all interest owners in the area?

A Yes.

Q Were Exhibits One through Eleven either prepared by you or compiled under your direction and supervision?

A Yes, they were.

Q Can you testify to the accuracy of these exhibits?

A Yes.

MR. CARR: At this time, Mr. Stamets, we would offer into evidence Yates Drilling Company Exhibits One through Eleven, including Exhibits Eight-A and Eight-B.

MR. STAMETS: These exhibits will be admitted.

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

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Rhodes, I'd like to run over a couple of things.

On Exhibit Number Nine, as you were discussing that you indicated why you felt that a well could not be drilled in the southwest corner of the quarter quarter section the Doyal No. 3 is located in.

Would you repeat that, please?

A If a well were drilled at a legal location, which would be 330 from this line and 330 from this line --

Q Uh-huh.

A -- I feel like a well would be either right on or maybe just above the oil/water contact. Either way I don't feel it would be economic. If it were just

above the oil/water contact it would either be a low enough oil production and a high enough associated water production that it would not be economic.

And as an example, the Doyal No. 4 Well, which is four feet above the oil/water contact, a producable water/oil ratio of approximately 5-to-1 and it's marginally economic.

Q Then you went ahead to say that under normal production circumstances some of the oil under the quarter quarter that the Doyal No. 3 is in is going to migrate to the Gallegher Lease in any event.

A Yes, I believe it would.

Q And some of it would migrate to the south to what is that, the Doyal No. 4?

A The Doyal No. 2 Well here in the south.

Q No. 2, okay, and so if you do not commence the injection operations there in addition to what the oil is going to migrate off the lease in any event, you would leave some oil out there which would not be recovered by any well.

A I believe that to be true, yes, sir.

Q As a result of putting the injection well in, would more Doyal lease oil be produced from the Doyal lease than if the injection well were not put in?

A Yes, I believe it would.

Q Okay.

MR. STAMETS: Are there other questions of this witness?

MR. DOYAL: Yes. The first thing I'd better due is hire me an engineer to draw me a map.

QUESTIONS BY MR. DOYAL:

Q You are aware that the Doyals are 100 percent owner of that royalty. That was brought up in testimony before. You were well aware of it.

A Yes, I know that they are.

Q What you're asking the Commission to do is to run a pipeline into the Doyal royalty, flush the oil out into Yates producing wells. That's what you're asking this Commission to do, in plain, simple English.

A I don't understand exactly what you're saying.

Q Well, when you run this -- all you're doing is putting water in here to flush the oil out. Yates has got many producing wells in this area. Why not use one of these for a waterflood project? Why jump on the small royalty owners?

A Well, sir, first of all, we don't have any wells directly west of the Apache State 1 or 2 Wells.

As a matter of fact, the two forties west of there we don't even operate.

Q How many wells do you have in this area? In 34?

A We have a lot of wells to the south but --

Q Why not use them? You've got a Rich Federal up here, dry, without a drill stem test. No core; no nothing; just throwed it in there and said it's dry. Why not use it?

A Because off of the logs it had very low porosity. Water couldn't be injected into a well of low porosity.

Q Now you are aware that this Doyal well here is perforated seven feet too low.

A No, I'm not aware of that.

Q Well, you don't have one of these. On page seven, the page numbers up in the righthand corner, the numbers right at the top of the map are the variations in the survey. The first three -- the first two are Yates' own survey.

The second is Petroleum Information.

The third one was run by Dick Wright, as you can see there, double checked with two instruments.

MR. STAMETS: We're looking at

the four figures across the top --

MR. DOYAL: Right.

MR. STAMETS: -- of the section.

MR. DOYAL: The first two figures are Yates own. They're different.

The third one is the information turned in to Petroleum Information by Yates.

The third one is one surveyed by Dick Wright, double checked, one instrument right behind the other one.

That was did the 10th.

MR. STAMETS: What page are you looking at, Page Seven?

MR. DOYAL: Page Seven.

That's the Doyal No. 3.

Now, see, it is right, but turn back and look at the Garner 7 or the Doyal No. 2, in that few feet.

He's trying to say that the porosity dropped below the water line. There's two things that seek their own level, is people and water. I worked in that field for over three years. There was no dry holes in the field right east of it.

MR. STAMETS: The Doyal No. 2

and which was the other well?

MR. DOYAL: The Garner 7.

MR. STAMETS: The Garner 7. Okay, the Doyal well --

MR. DOYAL: There's a difference in the perforations right on your left. Their perforations and what it should be.

MR. STAMETS: Okay, I'm -- I'm lost. Let's look at the Doyal No. 2 here a minute.

MR. DOYAL: All right, sir.

MR. STAMETS: On this material here you submitted.

You've got a one foot difference in the elevation --

MR. DOYAL: Right.

MR. STAMETS: -- between 4427 and 4426.

A Mr. Stamets, what page is that?

MR. STAMETS: Eight.

MR. DOYAL: There was no argument on it, was there, sir?

MR. STAMETS: Okay. Now, over on the lefthand side you've got perforated 2981 to 2987.

MR. DOYAL: To 2987, right.

MR. STAMETS: Now where do

those figures come from?

MR. DOYAL; Well, that is off of a Yates Drilling report.

MR. STAMETS: Okay. Now I don't understand what the problem is here.

MR. DOYAL: All right, to move over in this No. 3, it's not far from this No. 2 over to this No. 3. They dropped their perforations to 2991, the top perforations.

MR. STAMETS: The Doyal No. 3 --

MR. DOYAL: Right, on Page Seven.

MR. STAMETS: -- 2991.

MR. DOYAL: Yes, they dropped that perforation.

MR. STAMETS: All right.

MR. DOYAL: That much, 7 feet.

MR. STAMETS: And what you are attempting to tell us is that the formation is -- I'm not sure what you're trying to tell us.

MR. DOYAL: They had a small pump --

MR. STAMETS: All right, what we have here is a 2-1/2 foot difference in surface eleva-

tion.

MR. DOYAL; 7 feet. Oh, in the surface elevation, you're right.

MR. STAMETS: Between the Doyal No. 2 and the --

MR. DOYAL: You're right.

MR. STAMETS: -- Doyal No. 3.

MR. DOYAL: Right.

MR. STAMETS: All right, and we have a 10-foot difference --

MR. DOYAL: In the perforations.

MR. STAMETS: -- in the perforations. Okay, let me -- let me do this.

We've got the ground going up.

MR. DOYAL: Right.

MR. STAMETS: 2-1/2 feet. We have the perforations going down 10 feet, so we have a 7-1/2 foot --

MR. DOYAL: Right.

MR. STAMETS: -- deeper perforation relative to a level plain at the surface.

MR. DOYAL: Right.

MR. STAMETS: All right. Now, are you saying, then, that the formation, the top of the

formation in there is level?

MR. DOYAL: I'm saying that --

MR. STAMETS: Between those two wells?

MR. DOYAL: Water level is level and they dropped that perforation into the water level.

MR. STAMETS: Okay, but what about the top of the formation? Is that --

MR. DOYAL: The top of the formation would be above that water level.

MR. STAMETS: -- is that -- is that perfectly level or does that dip down or does that go up?

MR. DOYAL: The top of it will vary; the bottom won't. It will be right on the water level.

MR. STAMETS: Okay. Excuse me, do we have the logs? We'll go off the record a minute.

(Thereupon a discussion was had off the record.)

MR. STAMETS: While we were off the record I made some calculations based on the elevations supplied by Mr. Doyal and the logs shown on Exhibit Eight-B

and determined that from those the top of the Queen formation had dipped 7-1/2 feet down from Well No. 2 to Well No. 3, for what that's worth.

All right. Well, Mr. Doyal, you may proceed. I believe you said something about Yates pumping some oil out of the well and then stopping production?

MR. DOYAL: That is exactly true.

MR. CARR: Mr. Stamets, I think at this time we ought to conclude questioning Mr. Rhodes and then Mr. Doyal can present whatever testimony he wants.

MR. STAMETS: Good idea.

MR. CARR: I think it's getting confusing.

MR. DOYAL: Wait just one minute. I have one more question.

MR. CARR: Fine.

Q Are you aware on that location between the Doyal No. 4 and the Gallegher No. 1, 660 feet apart, there is a 2-inch line hooking those wellheads together with a check valve going toward the Gallegher well?

A No, I don't believe there is.

Q Well, if you don't believe it, then these pictures lie. It is there. I have two witnesses right

here.

MR. CARR: I'm going to object. This is argumentative. This can be put on by Mr. Doyal.

MR. DOYAL: This can go on the record.

MR. CARR: He asked Mr. Rhodes a question. He says he doesn't believe that's what is occurring out there or he doesn't know it.

MR. STAMETS: We'll allow Mr. Doyal to put that on as a part of his case.

Mr. Doyal, would you wait until it's your turn, please?

Do you have any other questions of this witness?

MR. DOYAL: No, sir, other than you know the discrepancy in the elevation on the Gallegher Well was 15 feet in the elevation.

A I don't know that it's 15 feet. I know in the first hearing a discrepancy was brought up and we have a corrected plat here in our Exhibit Number Eleven, I believe it is.

Q Well, isn't it hard to correct them after the well is drilled and on production?

A Why couldn't you shoot another elevation?

Q We just paid $500 for that one. These wells aren't fixed for waterflooding.

MR. STAMETS: Just a minute. Are you through questioning this witness?

MR. DOYAL: Yes, sir.

MR. STAMETS: He may be excused.

MR TAYLOR: Hold it a minute. I'd like to --

MR. STAMETS: Oh, I'm sorry.

CROSS EXAMINATION

BY MR. TAYLOR:

Q At the first hearing there was a lot of discussion of discrepancies in elevations. Are these surface elevations?

A Yes, strictly surface elevations.

Q And what effect would the discrepancy in these elevations have in either any of the logs or any of the perforations, or any of the matters under (not clearly understood.)

A None.

Q None at all?

A Well, they may have had an effect on a subsea depth but as I stated earlier, the elevations used in our calculations were correct. What apparently happened on these elevations is when our surveyor goes out and shoots an

elevation he immediately calls the elevation to our office and he follows it up with a C-102 form.

Apparently he called in the right elevation and somewhere in the typing of the form an erroneous elevation was put on the C-102.

The correct elevations were used in all subsea calculations.

Q Okay. On your proposal to waterflood, how many wells are going to be affected in this area by that?

A First off, pressure maintenance, and hopefully, all the wells in that reservoir will experience some kind of response to the pressure. It may be very small; especially the wells with the greatest distance from the Doyal No. 3 Well.

I think the Doyal No. 2 Well will experience the most benefit and effect from the Doyal No. 3 injection.

Q By the wells in the reservoir do you mean the wells on Exhibit Nine or others in addition?

A Just those on that -- that exhibit.

Q Okay. Generally due to the pressure maintenance project, or whatever, what is the general effect on the wells shown? Where's the water going to move on your Exhibit Nine? Could you show me that?

A You can see on here, there's a circle drawn around the Doyal No. 3 Well and in most reservoir calculations of injecting water, you assume a radial flow, and that's what this depicts, is a radial flow. This has been drawn at the intersection of a corner, the interesection of these two lines, and I believe that's 740 some odd feet.

That distance, at the rate of 200 barrels a day, the waterfront would move that far in over five years. It would take over five years to move it.

Q In the small circle.

A The circle that encompasses the Doyal No. 3.

MR. DOYAL: The two mile circle?

A This circle, right here.

Q That's the circle that intersects the corner of the quarter quarter section.

MR. DOYAL: Well, if there's no oil in the Doyal No. 3 there'd be no advantage to put water in it. Right?

There should have been another rancher here today. His name is not on this. He's Lyman Graham (sic) and owns the whole north half of Section 26 adjoining this.

MR. STAMETS: Would you let Mr.

Taylor finish his questions?

MR. TAYLOR: Well, let me -- I have a few more questions.

Q What is the advantage or disadvantage of having to pressure maintenance, a pressure maintenance project without unitizing versus unitizing?

A Well, the main reason we want to do that is because the reservoir has not been developed in the west. Eventually we would, and Bell North would like to unitize the whole reservoir for purposes of secondary recovery and until the reservoir is developed to the west we don't know the boundaries of the reservoir.

Q So because this is only going to affect part of the reservoir, is what you're saying, so you're not going to unitize at this point.

A I stated that there may be small amount of pressure difference out here but it would be so small that you couldn't -- I don't believe you could detect that difference in pressure to the wells other than the Doyal 2 (inaudible).

Q Is the only area that's going to be affected in this blue circle here or how far?

A Pressurewise, the Doyal No. 2 would probably be affected. The Garner 9 would probably be affected. The Bill Forbes (sic) R-7 may be affected.

Q But you're saying that the water is only going to spread within this area of this small kind of circle here.

A I don't know absolutely for sure where, exactly where the water will go, but common reservoir practice is to assume radial flow when you inject water into a well and that's what this depicts.

Q How -- how will this affect production of the various wells versus -- vis-a-vis one another?

A Well, I think the ultimate production from the Doyal No. 2 Well will be increased as will the Garner No. 9, not to the degree the Doyal No. 2 will but they both will probably see an effect.

Q So you're saying that as against one another it's not going to cause some wells to produce more and others to produce less?

A No, I don't think so.

Q Okay.

MR. TAYLOR: I think that's all I have. I just didn't understand what's going on.

RECROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Rhodes, you indicated that some oil would be recovered that would not otherwise be recoverable.

Is that only true if no waterflooding ever took place out here?

A Yes, it probably would be.

Q So if waterflooding were delayed a couple of yeears, that's oil that you could still get?

A Possibly. You have to realize that -- that there will be -- well, primary production will increase from -- from these injections and decline in pressure.

As you know, decline in pressure your gas comes out of solution and your gas tends to migrate towards your wellbore rather than your oil.

So definitively I couldn't say yes or no. That oil may be recovered during waterflooding

Q How long do you believe it will take to have the rest of this pool defined to the point where unitization could proceed?

A Since there are other leasehold operators that have interest in acreage that I think is a part of this reservoir, I couldn't tell you.

Q How long do you believe it would take to determine whether or not there's impact from the water injection?

A Could take as much as a year or two.

Q In a couple of years would there be significant movement of oil off the 40 acres the Doyal No. 3 is

located on?

A I haven't calculated what the radial extent of the injected water would be. I can't say that probably some oil wouldn't be moved.

I'd have to make a calculation to see what the radial extent of that water would be in two years.

Q Are we really looking at a pressure maintenance project here or salt water disposal operation?

A Well, indeed, there's an advantage to not having to pay the cost of hauling and disposing of produced water but in the meantime, too, we are also putting that water back in and maintaining pressure that was taken off the reservoir by the removal of that water.

MR. STAMETS: Any other questions?

The witness may be excused.

Mr. Doyal, you may proceed.

MR. DOYAL: Proceed to what?

MR. STAMETS: Whatever you were going to do.

MR. DOYAL: This well, this particular well, and this field, in fact, wasn't -- wasn't even made for waterflooding. The one right east of it was open hole drilling where the casing was set above the pay zone, cable tooled in, that bailer comes out, it's accurate.

Yates Drilling Company had seen fit to test the well at 3100 feet through the water zone and then throw the little perforating machine in there, guess at it, mind you, and try to perforate from 3 to 10 feet, and after waterflooding on perforations, you can't waterflood a well, a field with perforations. The one with the highest perforations is the last one and it will be the best one.

When you cover up the perforations in the Doyal No. 3 it has no chance of ever producing. When you cover them up in the Doyal No. 2, that well is killed.

The one with the higher perforations is the well that will (not understood.)

MR. STAMETS: What else would you like to say for us?

MR. DOYAL: I would like to submit these pictures in evidence, that No. 4 of the Doyals' and the No. 1 of the Galleghers' are tied together with a 2-inch line with a check valve on the far side.

The Gallegher well is pumping pure water. If there's any doubt in this Commission's mind, I'll go to the car and bring samples from every one of those wells caught the 10th of the month.

MR. STAMETS: Can I see the pictures, please?

MR. DOYAL: There, I took a picture of it. There's the check valve and the union laying right there. That's on the Doyal No. 4. Right here's the line, right there, so you've got the line laid right by the well. All you do is take this union loose and hook up to that; the union's laying right there. Here's the Gallegher well. There's the check valve with the check on this side.

MR. STAMETS: Okay. Let me mark on here which well is --

MR. DOYAL: Doyal No. 4.

MR. STAMETS: All right. And the Gallegher well number?

MR. DOYAL: One.

This has been a Mickey Mouse situation from start to finish, and we first suspected Yates Drilling when they moved right in the corner of 35 with a half a section, 330/330, right against fee land on both sides belonging to the Doyal family.

It couldn't have been much purpose, this land's flat; drive out there anywhere in a vehicle. That's where we first suspected. And he finished that well on the 25th of January and on the 12th, here they had filed this in this office for a hearing here to waterflood. It takes longer than that to do that paperwork. It had been planned.

It's been Mickey Mouse from start to finish. Off of those two wells, Doyal No. 1 and Doyal No. 2 the Yates Petroleum, or Yates Drilling, in fact, has took over a million dollars worth of oil out of those two wells, but they have a working agreement with Houston Natural Gas. It's 65 and 35. If that oil can be pushed out on one of these other leases, it becomed 12-1/2, 87-1/2.

MR. STAMETS: Let me see if I understand your concerns here.

Your concern is that -- that your royalty interest is not being properly protected by authorizing this injection.

MR. DOYAL: True. True.

MR. STAMETS: Has Yates Petroleum made any efforts to try and work out an agreement with you whereby your royalty interest might be protected?

MR. DOYAL: Not one. In fact,

MR. STAMETS: Okay.

MR. DOYAL: In fact, it's my belief that -- this is belief, like the engineer said, I believe possibly and it could be, it's my belief that they kept these two back they was so sure of this waterflood and there's no doubt in my mind that's what the pipeline is already laid for.

MR. STAMETS: Mr. Doyal, for

the record we need to find out who you are and what your background is.

MR. DOYAL: I'm Clarence Doyal. I'm retired. I worked in the oil industry in drilling, roughnecking, for fifteen years; three or four of it was spent right there in that very pool.

MR. STAMETS: But you're only representing yourself here today.

MR. DOYAL: The Doyal family. There's two boys, others couldn't be here for health reasons and distance.

MR. STAMETS: As an interest owner, royalty interest owner, not as a geologist or engineer.

MR. DOYAL: No, we're not royalty interest owners. We're 100 percent royalty owners.

MR. STAMETS: All right. Are there any questions of Mr. Doyal? Have you completed what you came to say?

MR. DOYAL: I'll think of it when I get home.

MR. STAMETS: Okay.

MR. CARR: I have just a couple of questions.

MR. DOYAL: Sure.

MR. CARR: Mr. Doyal, you are 100 percent royalty interest owner under the tract on which Doyal 3 is located, is that correct?

MR. DOYAL: Every one of the Doyal locations, each and every one. There's no such well as the Doyal Federal like you have up there.

MR. CARR: But under both of the -- under the 40 acres on which the Doyal 3 is located, also under the one on which the 2, you've got 100 percent.

MR. DOYAL: 100 percent on every Doyal well.

MR. CARR: When you go out and sample wells, how do you do it?

MR. DOYAL: You catch a gallon right out of the wellhead.

MR. CARR: You take that out of the --

MR. DOYAL: If the pump is running. It's the only way.

MR. CARR: Out of the bleeder valve there?

MR. DOYAL: You bet, right off of that wellhead.

MR. CARR: Okay. And then there are other valves on like the flow line but you don't

use those --

MR. DOYAL: We use the one out of the tubing.

MR. CARR: Okay. You don't go down on the flow line or (inaudible) --

MR. DOYAL: No, no, you catch it right at the wellhead, right as the pump brings it up.

MR. CARR: Are there other valves on those flow lines and gathering lines?

MR. DOYAL: Not that you could get oil out of.

MR. CARR: But they're there but you can't take anything out of them?

MR. DOYAL; Why, no. In fact, they put gauges, just blind (sic) gauges there to prevent that very thing, the Doyals taking samples.

In fact we were refused permission to get samples from the Garner well or the Gallegher well.

MR. CARR: Now how were you refused permission?

MR. DOYAL: By Peyton Yates standing right there.

MR. CARR: Did Mr. Yates tell you --

MR. DOYAL: And his pumper has definitely come around with guns in the car and told us not to do it.

MR. CARR: And who is Arthur Benz?

MR. DOYAL: Who?

MR. CARR: Arthur Benz.

MR. DOYAL: I have no idea.

MR. CARR: Is that the pumper, do you know?

MR. DOYAL: I don't know his name.

MR. CARR: Was there a pumper present when you went out to take a sample and survey the No. 3 Well?

MR. DOYAL: Definitely not.

MR. CARR: There was not and you were not given permission to walk on the property?

MR. DOYAL: That is exactly true. I got that to bring that right here to this Commission.

MR. CARR: Was the gate locked?

MR. DOYAL: There should be no gates locked on the Doyal. We've got our own locks on that gate.

MR. CARR: And were you able to go onto the property on the Doyal No. 3?

MR. DOYAL: Certainly.

MR. CARR: And were you able to go on the property on the Snow Oil Toles Federal No. 1 Lease?

MR. DOYAL: Certainly. We had permission from that rancher to go anywhere we want to there.

MR. CARR: And you cleared that with Mr. Spear (sic) before you went on that property?

MR. DOYAL: Yes, sir.

MR. CARR: Are you involved in any trespass suits concerning that property?

MR. DOYAL: No, sir.

MR. CARR: Have you checked the producing records on the Gallegher well?

MR. DOYAL: I certainly haven't had a set to. I would like to very much.

MR. CARR: Do you know they're public record with the State?

MR. DOYAL; I didn't know.

MR. CARR: Do you know that that well is in fact producing only water?

MR. DOYAL: I do know it pro-

duced water when we took the samples.

MR. CARR: And that was just at the time you took the sample out of the bleeder valve.

MR. DOYAL: Twice.

MR. CARR: But you have no checked production records that are on file.

MR. DOYAL: There better not be any.

MR. CARR: Any production records on file?

MR. DOYAL: Not on Gallegher No. 4, with that line hooked up with the check valves on that side and it putting out water.

MR. CARR: Do you know if that's a water line or an oil line?

MR. DOYAL: It does not matter what kind of line it is. All that water goes through oil lines.

MR. CARR: Do you know whether or not that line is used to put hot water in that well to treat -- do paraffin treatments on the well?

MR. DOYAL: Would it get hot water from Doyal No. 3 and run over to the Gallegher well?

MR. CARR: I'm asking the questions here. Do you know?

MR. DOYAL: I know that that isn't -- couldn't be true.

MR. CARR: You know that it could not be true that that line --

MR. DOYAL: I know that that could not be true.

MR. CARR: And you're saying that you know it could not be true that that --

MR. DOYAL: I'm saying that it could not be.

MR. CARR: Would you let me ask the question? My question is, and I want to be sure that it's on the record, that you know for sure that that is not a water line that's used to do paraffin treatments on that well. Is that -- do you know that?

MR. DOYAL: I am sure it couldn't be with the check valves hooked up that way.

MR. CARR: So it is your answer that you know that is not the case.

MR. DOYAL: I know that is not the case without the check valves in reverse.

MR. CARR: Thank you. That's all I have.

MR. STAMETS: Any other questions of Mr. Doyal?

Mr. Doyal, all of these deed that you've numbered one through --

MR. DOYAL; Eleven.

MR. STAMETS: -- eleven, do you intend to submit those as evidence?

MR. DOYAL; I do.

MR. STAMETS: And plat number one is an areal map with some elevations on it.

MR. DOYAL: Yes, sir, there's the benchmark, right there.

MR. STAMETS: And then we've got on up through number eleven with some individual wells shown --

MR. DOYAL; Yes, sir.

MR. STAMETS: -- with some individual information and some elevations.

MR. TAYLOR: Were these documents prepared by a surveyor but with the --numbered one through eleven and dark ink markings done by you?

MR. DOYAL: The ink markings were my own.

Only the machine marks are the surveyors.

MR. STAMETS: And then you have --

MR. DOYAL: Plus the penciling in of the number of the elevation.

MR. STAMETS: You have three photographs in addition to this.

MR. DOYAL; Yes, sir.

MR. STAMETS: Is there any objection to the admission of these exhibits?

MR. CARR: We don't have any objection to the admission of the photographs or the plats.

MR. STAMETS: Thank you. We will admit them into this case.

Does anybody have anything they wish to offer at this time?

MR. CARR: I'd like to recall Mr. Rhodes for a very brief question or two.

TOBIN RHODES,

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

REDIRECT EXAMINATION

BY MR. CARR:

Q Mr. Rhodes, I'm handing you certain photographs that have been offered into evidence by Mr. Doyal showing the Doyal No. 4 Well and the Gallegher No. 1 Well,

and they indicate a line being present.

Are you familir with that line?

A Yes, I am.

Q Would you explain to the Commission what the purpose of that line is and what it's used for?

A We have a very bad paraffin problem on both of these wells and water is trucked us from a rancher there south of the Gallegher well, and periodically we have to go in and flush water down the back side of both wells to remedy our paraffin and salt problem.

MR. CARR: I have nothing further.

MR. STAMETS: Any questions of the witness?

MR. DOYAL: Can you run that through with a check valve turned just one way?

A Can run it one way through there through the check valve.

MR. DOYAL; The check valve only runs from Doyal No. 4 to the Gallegher well; both check valves.

A I don't believe it does.

MR. DOYAL: Whether you believe it or not, it's there.

May I call two witnesses to

vouch for that fact? They're right in this room.

Do you have any objections to two witnesses?

MR. CARR: Well, I'm going to object to the questions being argumentative. I don't care what Mr. Doyal calls as long as we can cross examine.

MR. STAMETS: That's -- that's fine.

Any other questions of this witness? You may -- well, I'll ask one question.

RECROSS EXAMINATION

BY MR. STAMETS:

Q How much trouble is it to take one of those valves off and turn it around?

A I haven't seen the specific valve you're talking about, but with a pipe wrench you could probably do it.

Q Have you been there when these wells have been treated?

A Not actually when they were treated, no.

Q All right.

MR. STAMETS: This witness may be excused.

Do you want to call -- well,

let's see, you wouldn't be calling a witness.

Who are the witnesses that you would call?

MR. DOYAL: My brothers; both of them right here.

MR. STAMETS: Okay, well, we'll just allow them to identify themselves for the record and if they wish to verify that they've been out there and see this check valve, we'll allow them to do that.

If they don't want to do it, they don't have to.

MR. PAUL DOYAL: Yeah, I'm Paul Doyal. I was the first one to discover them and I don't know whether they got them in the picture there or not, but anybody that's been in the oilfield knows exactly what my brother's talking about is true.

You can't run -- you can't run fluid through but one way through that valve.

MR. STAMETS: Where is the --

MR. PAUL DOYAL: And they're turned backwards.

MR. STAMETS: Which well is the check valve located at?

MR. PAUL DOYAL: It's located at the Gallegher well.

MR. STAMETS: Okay. Thank you, Mr. Doyal.

MR. CLARENCE DOYAL: The picture of the other check valve is laying there by the Doyal No. 4.

MR. STAMETS: Do you have anything else?

MR. DOYAL: Louis.

MR. LOUIS DOYAL: I'm Louis C. Doyal and I saw it.

MR. STAMETS: Okay. Do you have any questions?

MR. CARR: Well, I'd like to ask one more question of Mr. Rhodes and I'd like to refer to the photograph that's at the bottom marked Doyal No. 4, and it also has "D" down in the lefthand corner of it, and I'd ask Mr. Rhodes if he can identify the valve that's pictured in that, that's shown in that picture.

MR. RHODES: I believe that this is the valve that Mr. Doyal just referred to, the check valve, and that is not a check valve. As you can see, that is a ball valve.

MR. STAMETS: That's laying there on that concrete footing?

MR. RHODES: Yes, he referred

to it earlier as a check valve laying by the Doyal 4 Well in this picture, and that is a ball valve that the fluid can travel either way through that valve.

MR. CARR: And I again have no further questions.

MR. DOYAL: That is a check valve. It's got the arrow on it. The fluid goes one way only.

MR. STAMETS: Is there anything anybody wishes to offer in addition in this case?

The case will be taken under advisement.

MR. CARR: I have a closing statement.

MR. STAMETS: We will allow you your closing statement, Mr. Carr.

MR. CARR: Would you like me to proceed at this time or would Mr. Doyal --

MR. STAMETS: Mr. Doyal, are you going to make a closing statement?

MR. DOYAL: Just as soon as he gets through.

MR. STAMETS: Well, we always allow the original applicant to make -- have the last word, so you're going to get to go first.

MR. DOYAL: Well, I ask that this waterflooding project be ceased, not even be considered by this Commission, and no waterflooding, no wells used within 1320 feet of the royalty owners' land. If it will push oil away from the royalty owner, it will push it to it.

And I ask that Mr. Yates be denied any request for waterflooding in that area.

MR. STAMETS: Mr. Carr.

MR. CARR: Mr. Stamets, Yates Petroleum -- Yates Drilling Company is before you here today. We're seeking authority to institute a partial pressure maintenance project. We, in coming before you with this request, we also are going to be disposing or placing water produced in the Queen formation back in the Queen formation and of necessity there will be a savings that will result to the operator as a result of having this way to dispose of the water which is currently being produced from the formation. It results in an economic savings.

This in and of itself prevents economic waste.

But the real thing we're attempting to do is efficiently and effectively produce this portion of the reservoirs. We've been here today criticized by the Doyals. We apparently have a misunderstanding as to what happens or is happening in the Doyal No. 3 Well, but

what we have is about a 6-foot interval that produced from the Queen. Above this interval is the anhydrite. You cannot perforate at a shallower interval and intercept the producing portion of the formation.

So what we did is we took the logs, and there's been confusion created here, I think, about what the surface elevations are, but Yates picked that interval based on the logs and we can look at the logs and we can see this is the portion of the Queen that produces and the problem is that it's location at the Doyal No. 3 Well, we have anhydrite above it; when we get into the zone that should produce we're below the oil/water contact. The well will not produce.

Now, the question has become one here today with the Doyals' correlative rights. The problem is that if you look at correlative rights, correlative rights doesn't mean by definition that they get their royalty interest out of barrel of oil that is under the 40-acre tract under the Doyal No. 3. It means that they have an opportunity to get their fair share of that production. And so the question becomes what do you do to effectively produce this reservoir, and what Yates is seeking authority to do is to put water in the Doyal No. 3.

Admittedly, it will move oil from under that tract toward offsetting properties, but the

moves the vast majority of that oil to a tract that Mr. Doyal and his family have 100 percent royalty interest under that tract.

If nothing is done and the wells continue to produce, the Doyal well to the south and the other well to the west, just by virtue of what happens in a reservoir, oil is going to migrate towards those two wells. If this happens, however, the potential remains that there will be oil left in the ground that will never be produced, so waste would be caused; physical waste of oil.

You're also running the risk, if you don't grant the application, of causing economic waste, because it's going to cost more to produce the reservoir because we can't do anything with the water that is economically efficient as putting it in this well.

And furthermore, we submit that the correlative rights of these individuals are not being impaired but being enhanced because the testimony in this record, and that's what you must base your decision on, shows that they will ultimately recover more, and that's what Mr. Rhodes said, by putting the water in, maintaining the pressure for a longer period of time in the well immediately to the south, sweeping a -- and sweeping oil toward that well.

So we submit their correlative

rights will in fact be protected.

We submit that if you are to carry out your statutory directive to prevent waste, physical and economic, and to protect correlative rights of all interest owners in this pool, then you have no choice but to grant the application of Yates Drilling Company, to authorize the disposal of produced water in this formation so they can institute now a partial pressure maintenance project, and if you do that you will carry out your statutory directives. You will prevent waste. You will protect the correlative rights of all interest owners in the area.

If you go the other direction, we submit you authorize waste and you impair correlative rights.

We ask that the application be granted and that an administrative procedure be included to permit the additional inclusion of other injection wells at a later time as that becomes necessary.

MR. STAMETS: Thank you, Mr. Carr.

This case will be taken under advisement.

(Hearing concluded.)

C E R T I F I C A T E

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

Sally W. Boyd CSR