STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING)
CALLED BY THE OIL CONSERVATION)
DIVISION FOR THE PURPOSE OF)
CONSIDERING:) CASE NOS. 10915, 10916, 10917

APPLICATION OF CONOCO, INC.

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: Michael E. Stogner, Hearing Examiner
Jim Morrow, Hearing Examiner

February 17, 1994

Santa Fe, New Mexico

This matter came on for hearing before the Oil Conservation Division on February 17, 1994, at Morgan Hall, State Land Office Building, 310 Old Santa Fe Trail, Santa Fe, New Mexico, before Deborah O'Bine, RPR, Certified Court Reporter No. 63, for the State of New Mexico.

I N D E X

February 17, 1994
Examiner Hearing
CASE NO. 10915, 10916, 10917

E X H I B I T S

A P P E A R A N C E S

FOR THE DIVISION:	ROBERT G. STOVALL, ESQ. General Counsel Oil Conservation Commission State Land Office Building 310 Old Santa Fe Trail Santa Fe, New Mexico 87501
FOR THE APPLICANT:	KELLAHIN AND KELLAHIN 117 N. Guadalupe Santa Fe, New Mexico BY: W. THOMAS KELLAHIN, ESQ.
FOR AMOCO PRODUCTION COMPANY:	CAMPBELL, CARR, BERGE & SHERIDAN, P.A. P.O. Box 2208 Santa Fe, New Mexico 87504 BY: WILLIAM F. CARR, ESQ.

EXAMINER STOGNER: Hearing will come to order. Call next case, No. 10915.

MR. STOVALL: Application of Conoco, Inc., for a high angle/horizontal directional drilling pilot project, special operating rules therefor, and an unorthodox producing interval, San Juan County, New Mexico.

EXAMINER STOGNER: Call for appearances.

MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of the Santa Fe law firm of Kellahin and Kellahin, appearing on behalf of the applicant. I have two witnesses in this case.

We would request permission to consolidate our presentation with the next two Conoco cases which deal with the same topic.

EXAMINER STOGNER: Are there any other appearances in this case or the two additional ones?

MR. CARR: May it please the Examiner, my name is William F. Carr with the Santa Fe law firm of Campbell, Carr, Berge & Sheridan. I would like to enter an appearance in these cases on behalf of Amoco Production Company. I do not intend to call a witness.

EXAMINER STOGNER: Any other appearances on this case or the next two? At this time I'll call

Cases 10916 and 10917.

MR. STOVALL: And each of them has the same title as the case which has been called.

EXAMINER STOGNER: At this time, I will consolidate all three cases for testimony purposes.

(Witnesses sworn.)

EXAMINER STOGNER: Mr. Kellahin?

MR. KELLAHIN: Thank you, Mr. Examiner. I have two witnesses. Mr. Reed Meek is a geologist. He's our first witness. Mr. Billy Goodwin is a petroleum engineer. He's going to discuss the details of the drilling and completion of the wells.

We're proposing to take the exhibit book for the first case, it's 10915, for the Hughes B-16R, go through that as a sample, if you will, and then have Mr. Meek describe for us if there's any material differences when we address the second two cases and present it in that fashion, Mr. Examiner.

REED MEEK,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Meek, for the record, would you please

state your name and occupation.

A. My name is Reed Meek. I'm a geologist with Conoco, Inc., in Midland, Texas.

Q. Mr. Meek, on prior occasions have you testified before the Division as a petroleum geologist?

A. Yes, I have.

Q. Pursuant to your employment as a geologist, have you made a study of the geologic factors concerning these three applications by your company?

A. Yes, I have.

Q. You reside in Midland, Texas, do you, sir?

A. Yes.

MR. KELLAHIN: We tender Mr. Meek as an expert petroleum geologist.

EXAMINER STOGNER: Mr. Meek is so qualified.

Q. (BY MR. KELLAHIN) Before we look at the specifics of each of the individual cases, perhaps we could turn to the exhibit book that's marked 10915. Let's find the color display, which is Exhibit No. 4. It's the one that shows the overpressured, underpressured area. Are you with me?

A. Yes.

Q. Describe for us what is the basis geologically for proposing as a pilot project an effort by your company to undertake the task of three horizontal wells in a certain portion of the Basin that has historically been developed with the vertical coal wells. What's the plan, and what's the reason?

A. The reason for drilling the horizontal wells in this portion of the Fruitland field is that the coal permeability and reservoir properties are poor. The typical vertical well that is drilled in this area produces at a very low rate, and we don't feel like we're able to recover a significant portion of the reserves that are in place.

This is opposed to wells shown on the map, if you look at the wells in the areas colored in bright red, these are high rate, very high permeability coal wells that produce at very high rates. And we're looking at a much lower permeability, tighter portion of the reservoir where we want to do this pilot project in.

Q. Does that rate have anything to do with whether the well is located in what is described as the overpressured versus the underpressured low permeability coal?

A. Yes. The overpressured, high permeability coal is the area where the well performance is much better. Typical wells in this area are flowing at rates of several million cubic feet per day.

Q. In the overpressured, high perm area?

A. Right.

Q. For the area that is characteristic of these three wells, what kind of rates are you seeing for the vertical wells?

A. The typical well is producing at less than 100 Mcf per day.

Q. What's the source of the data by which Exhibit 4 was generated?

A. This is production history data that's gotten from the State of New Mexico.

Q. Is the mapping and your interpretation of the overpressured area consistent with the industry knowledge and the published literature on the overpressured versus underpressured area?

A. Yes, it is.

Q. So when we look at each individual well site, are you satisfied as a geologist that we are in fact in an underpressured, low permeability coal?

A. Yes, without a question.

Q. The vintage of the vertical wells in each

of these three areas, how old are these wells?

A. These wells were drilled in 1989 and 1990.

Q. Are we in an area where there is any issue with regards to water production in the coal?

A. No, there is no water production reported from any of the wells in this immediate area.

Q. For these three areas, it's not a circumstance where the vertical wells have had to dewater the coal before they see substantial gas production?

A. That's correct.

Q. Describe for us the reasons you're proposing these pilot projects. Why are you seeking horizontal wells or the application of that technology to try to recover gas out of the coal?

A. We know that there is a significant amount of gas in place in the reservoir. We've got measurements that show that that's the case. We know that the coal is well-developed, is very thick in this area, but the vertical wells that we've drilled simply haven't been able to access those reserves. So this is an experimental technique to try to get a better flow rate out of the proration units in question.

Q. In each exhibit package do you have

adsorption isotherms by which to measure the gas content of the coal in these areas?

A. Yes, I do.

Q. Describe for the examiner the basis for each of those. Why do they apply to each of their areas?

A. Shall we turn to those exhibits?

Q. Yes, sir, let's do that. Exhibit 6?

A. The adsorption isotherm is a laboratory measurement that is made to estimate the capability of coal to hold gas. On the vertical axis is shown the gas content, and on the horizontal axis is the pressure.

As the pressure is increased, the coal is capable of adsorbing additional methane. For the specific case of the Hughes B well that we're discussing, the reservoir pressure in this area is about 800 pounds. And so in order to interpret the amount of gas in place, using this adsorption isotherm, we would go vertically from the 800 pounds and intersect the curve at approximately 300 standard cubic feet per ton.

So this is just a way of giving us some idea of what volume of gas there is in the coal reservoir.

Q. Why have you chosen this particular isotherm as being applicable to this particular spacing unit?

A. This particular isotherm is located just -- I believe it's two miles away from the proposed location. It's the closest measurement that we had in the area.

One of the other wells that we're proposing, the Federal Com No. 8R is in a different location. We've used a different isotherm in that package, but this same isotherm is used with the Wilch well, which is the third proposed location.

Q. As a geologist, have you reached any conclusions or opinions as to the direction at which you want to take the horizontal portion of each of these wells within their respective spacing units?

A. Yes. One of the primary goals of drilling the horizontal well is to intersect the natural fracture system that is present in the coal system. We call this the cleat system. If you'll turn to Exhibit No. 8, I've got a diagram here that shows the orientation of the face cleat direction.

We believe that the face cleats are oriented to the northeast, about 30 degrees east of north. And so the intent is to drill roughly

perpendicular to this face cleat direction in order to intersect as many of those cleats as possible within the proration unit.

Q. On Exhibit 8, the diagonal lines running northeast to southwest within the spacing unit and only within the spacing unit, that represents your opinion about the face cleat orientation?

A. That's correct.

Q. And the plan then is to proceed either north or south in the respective wells to maximize the opportunity to intersect as many of the face cleats as you can?

A. That's right.

Q. In each instance, there is already an existing vertical well, is there not?

A. Yes, that's correct.

Q. What's your plan for the vertical well in the spacing unit?

A. We intend to shut the existing vertical wells in and produce only the horizontal well.

Q. The vertical well then could be utilized as an observation well or for other data-gathering purposes?

A. That's right.

Q. But would not be produced concurrently

with the horizontal well?

A. Correct.

Q. What portion of the coals are you attempting to exploit in each of these cases, Mr. Meek?

A. In the case of the Hughes B-16R and the Wilch No. 12R, our target is the basal coal seam. That's best illustrated by looking at Exhibit No. 10, which is a type log. The type log shows the basal coal seam to be about 30 feet thick in this area. And it's our intention to drill our horizontal lateral leg within this 30-foot coal interval at the base of the Fruitland.

Q. The Welch A-12R well in Case 10916 is also the basal coal seam? That's its objective?

A. That's correct.

Q. And the FC Federal Com 8R is a middle coal?

A. That's right. And the Federal Com 8R in this area, the basal coal seam is not particularly well developed.

Q. Let's show the examiner that difference, if you'll turn to the exhibit book for Case 10917, turn to Exhibit 10, describe the type log.

A. The type log in this exhibit shows the

Pictured Cliffs formation to be at about 3,200 feet measured depth. Typically, the basal coal seam will sit right on top or very close to the top of the Pictured Cliffs sandstone.

In this case, there is just a very thin coal stringer present. And so we're choosing to go up and do our horizontal lateral leg in the middle coal seam, which is approximately 100 feet above the top of the Pictured Cliff sandstone.

Q. All right, sir. Let's go back to Exhibit Book 10915 and start with the first exhibit. In this case, as well as the other two cases, do you have a similar exhibit that shows the proposed surface location and the drilling producing window for the spacing unit within this pool?

A. Yes, we do.

Q. The setback, if you will, for the drilling producing window is 790 from each of the boundaries of the spacing unit?

A. Right.

Q. And that's consistent with the Division practice concerning the high angled/horizontal wells?

A. Right.

Q. Exhibit 2, identify and describe that Exhibit for us.

A. This is a nine-section plat which illustrates the proposed location in the center of the plat with all the offsetting Fruitland Coal wells that are in existence, showing also their operator and well name.

Q. Do we have sufficient vertical wells in the coal in this area to demonstrate to you that the vertical wells have not been very successful?

A. Yes, there certainly is.

Q. And to demonstrate specifically the productivity of those wells, have you tabulated for the examiner on Exhibit 3?

A. Right. On Exhibit 3 is a spreadsheet tabulation, showing the cumulative production to date and also the current average daily production rate from these wells.

Q. Give us a general sense of how the vertical wells have been drilled and completed.

A. All of these wells have been drilled to the top of the Pictured Cliffs sandstone. Casing has been set, perforated, and then fracture stimulation, using various different frac fluids but always with some sand proppant to hold the fractures open.

Q. In each of these areas, do we have adjoining spacing units that either have one, and in

most cases, two offsetting vertical coal wells?

A. That is generally correct. There are a few sections where no coal wells have been drilled. For example, in the Hughes B-16 case, the Section 30 offsetting to the southwest has not been developed.

Q. We've discussed Exhibit 4. Turn to Exhibit 5. What's Exhibit 5?

A. Exhibit 5 is an isopach map showing the thickness of, in this case, the basal coal seam, and just simply to illustrate that the coal is well-developed. There's about 30 feet of coal at the location we're proposing to drill.

Q. In your opinion, is there sufficient coal thickness as you've mapped it that you have a reasonable opportunity to have a successful horizontal completion of the coal?

A. Yes.

Q. It's not so thin or erratic that you ought not to apply this technology in this area?

A. That's right. The drilling people that have experience drilling horizontal wells are quite confident that they can get into this 30-foot coal seam and remain within that seam.

Q. We've discussed Exhibit 7. You might want to make a reference to -- we've discussed Exhibit 6.

Would you like to turn to Exhibit 7 and make a reference to that illustration?

A. Yes. Exhibit 7 is a diagram that is there to illustrate some of the unique characteristics of the coal reservoir as compared to a conventional sandstone gas reservoir.

The main points are that there is a natural fracture system known as the cleat system, which provides a permeability conduit for the methane to exit from the coal reservoir.

And then along the lower portion of the exhibit there is a sequence of three figures that illustrates the processes that need to take place for methane to be produced from coal. Initially, the methane needs to be desorbed from the surfaces within the coal matrix. It then diffuses through this matrix until it gets into the fracture system or the cleat system.

And so I think that this is just to strengthen the point that a horizontal well will give us a greater access to more of the cleat system, and therefore a greater access to the inherent permeability in the reservoir.

Q. We've discussed Exhibit 8 about your opinion of the orientation of the face cleats. Let's

turn to the structure map, which is Exhibit 9.

A. This is a structure map on the top of the Pictured Cliff sandstone. The structural configuration of the Fruitland in this area is quite simple. It's just a very gently dipping, nearly horizontal bed. It dips at about 20 to 30 feet per mile to the northeast.

Q. The structure is not of such a great significance that it will be a complication to those trying to drill the horizontal well?

A. We don't anticipate any major problems. It's simply a matter of drilling slightly uphill, climbing about 20 feet over the length of the lateral.

Q. The last exhibit in each of the packages is the notification to offset operators. Apart from Amoco's interest in your project, have you received any other inquiries from any of the operators notified?

A. No, we have not.

MR. KELLAHIN: Mr. Examiner, that concludes my presentation of Mr. Meek. In each instance, we move the introduction of his Exhibits 1 through 10.

EXAMINER STOGNER: Exhibits 1 through 10

will be admitted into evidence.

EXAMINATION

BY EXAMINER STOGNER:

Q. Of course, with the exception of the proposed FC Fed Com No. 8, the other two are in the same township and are separated by, what, four miles?

A. That's right.

Q. What exhibit was the adsorption curve?

MR. KELLAHIN: It should be 6 in each of the packages, Mr. Examiner.

Q. (BY EXAMINER STOGNER) Is this the same curve for each well?

A. It's the same curve for the two wells in the Township 29 North, Range 8 West. That would be the Wilch well and the Hughes B well.

There is a different isotherm included in the Fed Com well, just simply because it's located within the same township.

Q. So the Hughes B-20 that was put in Exhibit 6 for both cases, 916 and 915?

A. That's right.

Q. What is the difference between those two and the Van Hook A-1 which is designated Exhibit 6 in 917? Is there any significant difference?

A. I don't believe there's any significant

difference. It's simply two different samples from two different wells that were run, and they had a very similar isotherm profile. It looks like the Van Hook had just perhaps a slightly lower gas content or capability of holding gas than the Hughes B-20.

Q. That formula, V equals -- you have a formula under the dry ash free?

A. Right.

Q. Equivalent moisture, 1.93 percent?

A. That's, yes, equilibrium moisture.

Q. That is the volume content? That would represent the number on the vertical axis? I'm trying to figure out exactly what that formula is.

A. How that formula works?

Q. Yes.

A. The constant, the 509, is derived from that equation. And so if you wanted to get the vertical value, you would just plug your pressure values into the equation, and that's where you'd be on the curve.

Q. And P, being pressure in both instances, would be the same in that same formula?

A. That's right.

Q. And then you have another constant, it looks like, there's an 822 as opposed to 701 in the

others?

A. Right.

Q. When you refer to Exhibit No. 8 in all instances that shows your cleating, the small parallel lines, would it be advantageous to hit these at a 90-degree, or is it a little bit off because of the orientation of the proration unit?

A. Well, the real goal is to try to intersect as many of those cleats as possible. So with the orientation of the proration unit, that can best be accomplished by drilling slightly orthogonal to those rather than perpendicular to them, drilling at a slight angle to them.

Q. So the most advantageous would be hit them directly at 90 degrees, barring all the other government and political factors?

A. Yes.

Q. Purely technical at this point?

A. If indeed these face cleats are the cleats that are open, that would be the case.

Q. If I understand the goal here in Exhibit No. 10 in each instance is to run a horizontal along the middle portion or the base of those little seams. What's the goal here?

A. Actually, we intend to try to stay near

the top of the seam that we're targeting, primarily because we're concerned about the coal sloughing into the well and giving us problems with our drilling equipment, and we feel like the overlying shales are going to form a stable roof rock over our horizontal lateral leg, so it will give us a little bit better stability within the horizontal hole.

Q. Is this -- I know that it's not Conoco's first venture in horizontal drilling in New Mexico. Is this the first time for Conoco in the coal?

A. We have made one previous application, approximately six months ago. That well has not been drilled yet. We plan to drill that well within the next few months.

Q. So as far as any past technical evidence, you don't have any accumulated at this point?

A. No, we don't.

Q. I want to go back to Exhibit No. 4. You show that overpressured high and the underpressured low permeability line in the coal. What is the reason for that? Is there any geographical reason that that line is there? Is there a barrier of some type that formed?

A. There is a fair amount of debate among the different scientists that have studied this

phenomena. One of the theories is that it's related to the maturation of the coal; that at some point when the coal is going through its maturation process, it reaches a temperature where many dramatic physical changes can take place; that, in fact, it is the onset of the gas generation, the thermogenic generation within the coal. And so that this particular thermal event creates a very different reservoir property, including the overpressured, higher-gas content, higher-permeability coal.

And that's corroborated by, if you look at the maturation mapping, using the vitrinite reflectance data, that line is very close to parallel with the maturation contours.

The other theory is that there is some other type of permeability barrier there, perhaps some kind of fault or other permeability barrier that separates the northern portion of the reservoir, which is overpressured, from the southern reservoir, which is underpressured.

EXAMINER STOGNER: Any other questions of this witness at this time?

MR. KELLAHIN: No, sir.

EXAMINER STOGNER: Mr. Carr left the room. So he may be excused. Mr. Kellahin?

MR. KELLAHIN: Thank you. Call at this time Mr. Billy Goodwin.

BILLY GOODWIN,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Goodwin, do you have before you a set of each of the exhibit books?

A. Yes, sir, I do.

Q. If you would turn, sir, to Exhibit 11 in the first exhibit book, it's the one for Case 10915, we'll start at that point.

For the record, would you please state your name and occupation.

A. My name is Billy Goodwin, and I'm a drilling engineer in the Midland Division for Conoco.

Q. Summarize for us your educational and employment experience, Mr. Goodwin.

A. Okay. I have a Bachelor of Science Degree from Oklahoma State University in petroleum engineering technology.

Q. In what year did you obtain that?

A. 1984.

Q. All right. Summarize for us your employment.

A. Okay. I worked for a logging company for the first year out of school, running cement bond logs in Oklahoma. And then I went to work for Conoco offshore out of the New Orleans Division for four years in production.

I then moved to Houston, Texas, and worked as an engineer for two years, traveling around to different areas, Oklahoma, New Mexico, Texas, and offshore out of New Orleans, working in the drilling department.

I then moved to the Midland Division where I spent the last two years working mainly in the field as a drilling foreman, and I recently just moved to the office as a drilling engineer once again.

MR. KELLAHIN: We tender Mr. Goodwin as an expert drilling engineer.

EXAMINER STOGNER: Mr. Goodwin is so qualified.

Q. (BY MR. KELLAHIN) Mr. Goodwin, let's turn to Exhibit 11. Tell us how you're going to do this. Start at the surface, and tell us what happens.

A. This diagram on Exhibit 11 is a composite

diagram of our well plan outline. And what we intend to do is spud a 17-1/2 inch hole, drill to 250 feet, set 13-3/8 inch casing, cement that casing back to surface.

Q. Is there any importance attached to 250 feet?

A. Yes. We picked that point to protect the fresh water sands, and we will cement it back to surface.

Q. What then do you do?

A. Then we'll drill out through the 13-3/8 inch casing and drill an 11-inch hole down to a kick-off point, which varies through the three wells slightly.

Q. Describe for us how you determine the approximate kick-off point for each of the wells.

A. What we did was get with the geologists and reservoir engineers, and they gave us the target at the top of the basal seam or the middle seam where they wanted to end up. And from that point, we backed out 12 degrees per 100 foot. And that gave us our kick-off point for each of the three wells.

Q. The top of the formation or reservoir is identified by use of the logging information available in the spacing unit?

A. Yes.

Q. You get to the kick-off point. You start building angle to 12 degrees per 100. Then what happens?

A. From the kick-off point on, we'll be using an MWD, then a motor, and we'll build our angle 12 degrees per 100 foot to our terminal angle, which varies in the three wells slightly, just under or just over 90 degrees. We'll reach this at our target zone.

At that point, we'll run 8-5/8 casing, and we'll cement that casing back to surface.

Q. What's the reason to do that?

A. We want to have a good cement all the way back to surface so we don't have any kind of problems with our tools or --

Q. Will it afford you the opportunity to isolate production, if successful, out of the coal gas from any other formation including the saltwater sands?

A. Yes, it will be isolated all the way back to surface.

Q. How are you going to know where you are?

A. From the surface down to the kick-off point, we'll run single-shot surveys, and from this

we'll be able to come up with our azimuth and our drift. At that point, we'll tie in that information with the MWD. And from the point of the kickoff down to the end of the build and on out through the lateral section, we'll have an MWD in the hole. At each connection, we'll run a survey so we'll know where we are all the way from the surface on down to the end of the lateral.

Q. Describe for us how you're going to drill the lateral.

A. We'll drill the lateral section with an air mist system, and we'll use a motor and a steerable system. We plan to drill it at the top section, orient our tool face up, and stay at the top section of that seam and drill it out to the bottomhole, final measured depth in each case.

Q. The end of the lateral or the end point of the well is projected to be the 790 offset distance from the spacing unit?

A. Yes. In each case, we'll be stopping short of the setback.

Q. So that would be the maximum potential distance or length of the lateral?

A. Right.

Q. What do you do to set the well up for

completion and production?

A. The well is going to be completed open hole. We won't be running any kind of slotted liner. There won't be any kind of stimulation. We'll simply run tubing inside the hole down inside the 8-5/8's. That will be our completion.

Q. Are each of three to be done in a similar way?

A. Yes.

Q. Is there any material difference in the three other than determining where the kick-off point is?

A. Not other than the kick-off point or the end of the build or the distances.

Q. Let's turn to Exhibit 12. Identify that for us.

A. Exhibit 12 is a top view of the horizontal plan. It shows the surface location. It shows the end of the build where we enter the formation, and it shows the lateral section, and the end point thereof.

Q. All right, sir. And Exhibit 13?

A. Exhibit 13 is a view of the vertical section. It shows the top of the hole down to the kick-off point, the end of build, and the lateral section.

Q. And then finally Exhibit 14?

A. Exhibit 14 is a proposed well plan outline. It has the information that we gathered up to form the composite on Exhibit 11 and the pertinent information that needs to be looked at on location while drilling the well.

Q. And you have prepared comparable exhibits for the other two cases?

A. Yes.

MR. KELLAHIN: Mr. Examiner, that concludes my examination of Mr. Goodwin. We move the introduction of his Exhibits 11 through 14 in each case.

EXAMINER STOGNER: 11 through 14 will be admitted into evidence.

EXAMINATION

BY EXAMINER STOGNER:

Q. What hole size are you going to be coming out from under that intermediate string?

A. It's going to be 7-7/8's inch.

Q. Once this well is completed, where is the tubing going to be set?

A. The tubing will be set down inside the 8-5/8 inch casing string, approximately 100 foot up from the end of the build.

Q. So nothing will protrude out in the open hole interval?

A. No.

Q. Will there be any stimulation requirements?

A. No, sir, there will not.

Q. How come you can't use the wells that are already out there? Are they completed different that you can't cut a window and --

A. These wells were drilled with fluid, and that could have caused some damage right there in the immediate formation and could cause us some -- well, it wouldn't really cause us problems if we came up the hole and kicked off, but these holes are shallow enough that we feel like we can afford to spend a slight amount more money to go ahead and drill a whole new well from surface.

Q. What kind of time frame are you looking at to TD?

A. Our best guess is approximately 14 to 17 days. We don't have the experience -- when drilling our first one, you had to have a real good handle on that, but that's what we're approximating.

Q. Have you drilled a horizontal hole or been on one?

A. Yes, I have. I've been on two horizontal holes in Texas out east of San Antonio.

Q. Was that a sandstone or a limestone?

A. Yes, the limestone.

Q. Was it a short radius, long radius?

A. It was a medium radius.

Q. What would you classify this one as?

A. Medium radius.

Q. How far a horizontal extent did you get on that one?

A. I wasn't on the wells from start to finish. I only spent a short time on each well. At the time I was out on each of the wells, we were just over 1,000 feet in extent.

Q. Did you use that air mist lateral steering tool?

A. No. This will be something new for us.

Q. Just out of curiosity, whose tools are you going to be using? It doesn't make a difference. I was just kind of curious.

A. We have a confidentiality agreement with our equipment on that.

EXAMINER STOGNER: With that, I'll let that go then. It's not important in this matter so I'll stop there.

I don't have any other questions of Mr. Goodwin.

MR. KELLAHIN: That concludes our presentation, Mr. Examiner.

EXAMINER STOGNER: The only thing I might add, if you have to go out with the Commission on a horizontal well -- prior to that I was drilling horizontal wells -- but I wouldn't mind being invited out there. I'll just leave that out in the open like that.

MR. KELLAHIN: If the weather is good, we'll all go take a look.

EXAMINER STOGNER: I'll take you up on that, Mr. Kellahin. Let's plan on doing that.

MR. KELLAHIN: Point of reference, we did one of these back in August. It was the well that we referred to a while ago. Here's a copy of that order. It was case 10778.

EXAMINER STOGNER: Thank you, Mr. Kellahin. With that I'll take Cases 10915, 10916 and 10917 under advisement.

CERTIFICATE OF REPORTER

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

I, Deborah O'Bine, Certified Shorthand Reporter and Notary Public, HEREBY CERTIFY that I caused my notes to be transcribed under my personal supervision, and that the foregoing transcript is a true and accurate record of the proceedings of said hearing.

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, February 28, 1994.

Deborah O'Bine

DEBORAH O'BINE
CCR No. 63

OFFICIAL SEAL
Deborah O'Bine
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires: Sept. 19, 1994

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 10915, 10916, 10917 heard by me on 17 February 1994.

, Examiner
Oil Conservation Division