ORIGINAL

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

APPLICATION OF CHEVRON USA, INC. FOR A NONSTANDARD SPACING AND PRORATION UNIT AND COMPULSORY POOLING, LEA COUNTY, NEW MEXICO. CASE NO. 15074

APPLICATION OF ENDURANCE RESOURCES, LLC FOR COMPULSORY POOLING AND NONSTANDARD SPACING AND PRORATION UNIT, LEA COUNTY, NEW MEXICO. CASE NO. 15084

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

Volume 2 of 2

February 21, 2014

Santa Fe, New Mexico

BEFORE: RICHARD EZEANYIM, CHIEF EXAMINER

This matter came on for hearing before the New Mexico Oil Conservation Division, Richard Ezeanyim, Chief Examiner, on Thursday, February 20 and Friday, February 21, 2014, 2014, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South St. Francis Drive, Porter Hall, Room 102, Santa Fe, New Mexico.

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EXHIBITS OFFERED AND ADMITTED

(9:09 a.m.)

EXAMINER EZEANYIM: Good morning, everybody. We are going to continue the cases we started yesterday, and this is Case Numbers 15074 and 15084. We are continuing the testimony of the Applicant, Endurance. I think we finished the testimony from Chevron, if I may be right on that one. And I know we have sworn all the witnesses. We will continue with the witnesses of Endurance, where we stopped yesterday.

Call your next witness.

MR. PADILLA: Okay. We'll call Don Ritter, to start with.

EXAMINER EZEANYIM: Don Ritter, you were sworn under oath. You are still under oath.

THE WITNESS: Yes, sir.

EXAMINER EZEANYIM: Mr. Padilla, you may proceed.

DONALD RITTER,

after having been previously sworn under oath, was questioned and testified as follows:

DIRECT EXAMINATION

BY MR. PADILLA:

Q. State your name for the record.

A. Donald Ritter.

Q. Mr. Ritter, where do you live?

A. I live in Dallas, Texas.

Q. What is your connection with Endurance Resources, LLC?

A. I'm the CEO and founder of Endurance Resources.

Q. And can you tell the Examiner the relationship between Tritex Energy and Endurance Resources, the Applicant here today?

A. Yes. Tritex is a limited partnership that is owned by Tritex Resources.

Q. Mr. Ritter, have you previously testified before the Oil Conservation Division?

A. Yes, I have.

Q. And in what capacity have you done so?

A. As a petroleum engineer.

Q. And what is your work experience in the oil and gas industry?

A. I'm a petroleum engineer from Marietta College in 1981. I spent almost 20 years with Mobil Oil, about eight years in the field, operations, drilling and completions of wells. Then several years in reservoir engineering. Then several more years in drilling and completions engineering, and then into management with Mobil. I left as the drilling manager for all the joint venture projects worldwide.

At that point, I went back to school and

received an MBA from Southern Methodist University and then joined -- at the Mobil-Exxon merger, I decided that Exxon was not my company to go to, and I went to work for a small start-up company called Geomechanics International.

And I was at that company for seven years and then built a start-up company, based out of Stanford California, with a number of PhDs, taking their science and commercializing that into the oil and gas industry. And we built that company into about 55 employees, 30 of which were PhDs, offices in five countries. And eventually the company was sold to BakerHughes.

After that, I left -- or I started Tritex Energy with a former partner from Marietta College. And then that was -- that was started with a GE Capital partnership, and then we took that GE partnership and recapitalized it with Lime Rock Partners just last year and formally brought everything under Endurance Resources.

So we've, since then, built a team, opened an office in Midland. Our team has expanded to several more petroleum engineers, and the field team -- the man team we have in place has drilled over 90 horizontal Bone Spring wells. In fact, our company is solely focused on drilling horizontal Bone Spring wells in the

Delaware Basin. That's our only challenge.

Q. In terms of geomechanics, tell us briefly what geomechanics is.

A. Geomechanics --

EXAMINER EZEANYIM: Excuse me. Before you go there, let's qualify the witness, because I think you want to start the witness -- what do you want to qualify him as?

MR. PADILLA: As a petroleum engineer and as an expert in stress orientation.

EXAMINER EZEANYIM: Okay.

Do you have any objection?

MR. FELDEWERT: I've heard his background in terms of a petroleum engineer. I haven't heard anything on stress orientation, what experience he has there.

Perhaps that's what you're going into.

THE WITNESS: I can answer that.

I do have a patent in the area, which is the optimal -- System for Selecting the Optimal Completion for a Hydrocarbon Well, and the basis of that patent is using a geomechanical model, and the stress directions and orientations to line up a completion where there would be an area that would keep the zone from having sand collapse, or, conversely, orienting it

so that you have transverse fractures for a horizontal well versus longitudinal fractures, and also looking at depletion pressure over time to be sure that you don't create a crush of your formation sand. So that's the basis of the patent.

That was developed in conjunction with others at Geomechanics International. And during that time, we took the technology from, essentially, Stanford Labs to the oil industry and developed all of the technology that was used to orient the Barnett shales, the Bakken shales.

VOIR DIRE EXAMINATION

BY MR. FELDEWERT:

Q. Who is the "we"?

A. Geomechanics.

Q. Geomechanics International?

A. Yes.

Q. What is your relationship with Geomechanics?

A. I was -- I was more of a founder and the vice president of engineering.

Q. And how long were you with them?

A. Seven years.

Q. Why did you leave?

A. I left to start an oil and gas company. We sold the company just within six months of that.

MR. PADILLA: Mr. Examiner, I'd ask that he be qualified as a petroleum engineer and stress-orientation expert.

EXAMINER EZEANYIM: I will do that.

CROSS-EXAMINATION

BY EXAMINER EZEANYIM:

Q. Let me ask you a question. You talked about Tritex and Endurance. Since we're here -- you are very well qualified, but since you are here, tell me, did you start Tritex, or did you start Endurance? I want to know the relationship between Tritex and Endurance.

A. Sure. Sure. I actually started Tritex as the first company, Tritex Energy. And then we created a limited partnership with General Electric. That was called Tritex Energy A, LP, and that particular relationship purchased all properties from Ray Westall. So that's the beginning of the limited partnership as Tritex and under GE's umbrella.

And then a year ago, we recapitalized. Essentially, my partner and I purchased the limited partnership from GE Capital, with the assistance of Lime Rock Partners. We recapitalized the company, brought in a hundred-million-dollar commitment for equity of $150 million -- debt so that we could drill these particular wells.

With the GE Capital situation, they were not interested in drilling, and we had some really good opportunities, as we're talking about, all of this area that we're developing around Sections 20, 19, 18. They were all areas that were owned by Westall, and we had the shallow production, and now we're developing the deep rights.

Q. Yeah. I want to hear Endurance.

A. Oh, I'm sorry. Endurance -- Endurance was formed at the connection between Lime Rock Partners. And when we recapitalized Lime Rock Partners, we put everything under Endurance. So the limited partnership is underneath Endurance Resources. But I'm the CEO of -- still the limited partnership, Tritex, exists. I'm the CEO of that, and I'm the CEO of Endurance Resources

Q. So what does Tritex do? Is Endurance the operating arm of Tritex?

A. Yes. Yes.

Q. I'm trying to understand the relationship.

A. Yes. Well, there are two pieces. One piece, Endurance owns Endurance Resources LLC, which is the operating arm. And then all of the assets are in Tritex Energy A, LP, and we kept the limited structure -- limited partnership structure in place.

Q. You see, this is important, you know, for the benefit of this, because when I looked at this last night, I didn't see any Endurance, but I saw Tritex. So that's why, you know --

A. Yes.

Q. Can you explain this to me, because I'm not there. I don't work for you.

A. You're absolutely right.

Q. So I need to understand the relationship between Tritex --

A. Sure.

Q. -- and that is clear now.

EXAMINER EZEANYIM: So without any further objection, he's going to be qualified. Really, very good expertise in petroleum engineering and --

What is that other one?

MR. PADILLA: Stress orientation.

EXAMINER EZEANYIM: -- stress orientation.

You say you've done it for seven years?

THE WITNESS: Uh-huh.

EXAMINER EZEANYIM: So I believe you are qualified for that, too.

So you may proceed.

CONTINUED DIRECT EXAMINATION

BY MR. PADILLA:

Q. Mr. Ritter, let's go to Exhibit 11-1.

A. Yes. I'm looking for my copy. Yes.

Q. Can you tell us what that is?

A. Yes. This is a geomechanical modeling project for the Bone Springs Completion Program.

Q. Where is that?

A. It is specifically for the area adjacent to Section 18. We used the wells from Section 30, from Section 20, our Stratocaster and Telecaster wells, that we've been discussing, that are within a mile or two miles of Section 18.

Q. Did you use the study to help you determine how to orient the wells, north-south or east west?

A. Yes, we did use it for that. Actually, we've used this study for a number of different things. And maybe I'll give you a little bit of history with the study.

We actually contracted and began the discussions with BakerHughes to put this study together last September, and this study was to be put in place for confirming the orientation. But more importantly, we built the geomechanical model so that we would have very good, robust inputs into our frack model. You

heard Lyle Lehman talk about the mechanical earth model and the process they use that just had the inputs from the geomechanical model. These are the inputs that help define that model even better. So this is a comprehensive project that is primarily for hydraulic fracturing, but it does include orientation and confirmation.

Q. So Endurance ordered this study before any of this --

A. Oh, yes. Yes. This was ordered before, as part of our normal fracture initiation and hydraulic fracture study.

EXAMINER EZEANYIM: What are we trying to say? This study was done before any of this application was --

THE WITNESS: It was started. It was finished over the last couple of months, but it was started prior to any of that.

EXAMINER EZEANYIM: And the reason for doing this geomechanical study was to see where the orientation would be if you started drilling?

THE WITNESS: Where the orientation and, more specifically, what types of pressures it would require to initiate natural fracturing if natural fractures were already closed and under pressure. It

also will give you the direction that you can drill into the fracture system that you create, and you create the fracture system in a certain angle and deviation at different pressures. It takes different pressures to get more fractures.

EXAMINER EZEANYIM: Yeah. So what are the objectives? What are the objectives? I'm asking this question because I want to understand.

THE WITNESS: Sure. The objectives are to confirm what the geomechanical stress is in current day in the area, to have further verification of the drilling direction and to be sure that we have all of the rock physics modeled correctly for our fracture program.

EXAMINER EZEANYIM: And this is taken from information or data from two miles from Section 18.

THE WITNESS: Right. It's taken from the wells in that area.

EXAMINER EZEANYIM: You may go ahead.

Q. (BY MR. PADILLA) Let's go to the second page, 11-2, and I'll have you discuss the summary of results of this geomechanical study.

A. Sure. So the main conclusion is the stress regime is most likely a strike-slip faulting, where both the SHmax, or the maximum horizontal stress, is greater

than the vertical stress, and it's greater than the minimum horizontal stress.

Q. Explain to me what you mean by strike-slip faulting.

A. So in that condition, on a more regional basis, the faults are shifting. Instead of shifting up and down, which is the normal faulting regime, it would be shifting sideways. So the basin movement and such are creating a side-to-side shift versus an up-to-down shift in any existing faulting.

Q. Let me understand this. You're doing this to be able to stimulate the wells?

A. Yes. By knowing what those -- knowing the regime first and then the specific values for each one of these stresses, you can -- and with additional data, you can determine the direction of stress, and you can determine its magnitude.

And those magnitudes -- for instance, the SHmin -- the magnitudes of SHmin are maybe more -- more commonly known as frack gradient, although it's not exactly frack gradient, but it's close to the nomenclature for frack gradient, which, of course, is very important for designing hydro-fracks, knowing what those pressures are, knowing how much pressure that you can push above that. And then deeper into the model,

during the fracturing process, it's how much more pressure are you actually in a net pressure standpoint getting out into the formation that would reopen and reactivate existing nature fractures.

Q. What are the conclusions that you draw from this?

A. So the conclusions from the study that we had SHmin estimated from the wells that we had done our frack experience with, the SHmax azimuth, or the direction of maximum stress, is approximately 80 degrees, which is near the east-west. So that is assumed from regional experience in this particular area of New Mexico from BakerHughes.

The model then goes in to look at how the well is drilled, if the caliper of the well exhibits some breakouts, and that's based on what the actual pressure and strength of the rock is. So if the rock is under stress, it has a compressive strength. If the stresses -- the two horizontal stresses are enough that they can create a compressional failure of the rock in weaker zones, then you will have those zones fall into the well, and you can record those with your caliper. And by doing some math modeling with the software that Geomechanics International created during the time I was there, you can history match the caliper logs to get a

verification of the SHmax magnitudes.

Q. In this study, were you using actual data from the four wells that you mentioned here?

A. Yes. We were using data from the wells that we had in the vertical sense. There were several vertical wells in the area, primarily a well in Section 30, which would be just south of Section 18, two sections farther south.

Q. Now, you heard Mr. Schwartz talk yesterday about the anticline, which Mr. Harris disagrees with. How does that play into the mechanical study results?

A. Well, if that was indeed true, then the maximum horizontal stress would actually be north-south versus east-west to be able to create the fractures that were indicated in the textbook model.

EXAMINER EZEANYIM: If what were true? If it's that way. What is that? You said if that were true. What was the question?

THE WITNESS: If the anticline model he presented were true.

EXAMINER EZEANYIM: Then?

THE WITNESS: Then the maximum horizontal stress would have to be north-south, not east-west.

EXAMINER EZEANYIM: But right now your study --

THE WITNESS: My study shows it's east-west. And so based on that, the correct direction to drill would be north-south, and that would set up the most ideal situation to generate transverse fractures, which, if you're drilling the horizontal in this way (indicating), your fractures would be like this (indicating).

EXAMINER EZEANYIM: So you like to drill the orientation of the maximum stress, because maximum stress is east-west, right?

THE WITNESS: Yes, perpendicular. Yes. And that would create the most transverse fracks.

EXAMINER EZEANYIM: In your study, just out of curiosity -- and SHmin, what is the relationship with the closure pressure of where you are fracking? That's a different question. Do you see a relation between SHmin and --

THE WITNESS: Yes. In fact, the actual number -- you know, when you shut a well in, you have the ISIP, and it comes in a very fast curve. If you take the tangent of the curve back to the pressure, that is the SHmin pressure.

EXAMINER EZEANYIM: Okay.

THE WITNESS: So ideally, then, we would be wanting to drill north-south wells so that we could

create the natural number of fracture wings.

EXAMINER EZEANYIM: Okay. Now, we have to explore this, Mr. Ritter, because when you are drilling -- not in the industry how well we do. We want to drill against the natural fractures.

THE WITNESS: Right.

EXAMINER EZEANYIM: But then the question begins from your study: Are we going to get the most hydrocarbons, because that's where I'm coming from. Because there is a confidence in drilling. I don't want to drill something and produce nothing. I want to drill -- of course, you know, as I told you, in the industry, we have to drill something good, but would that produce the maximum recovery? So that's another issue.

THE WITNESS: Right, and I will address that. I'll start quickly by saying that if we have the polygons, or the boxes, we have a cylinder that's 160 acres in one direction and 40 in another, and we want to fill that cylinder with the most sand possible, then we would want to get the orientation as close as we could to perpendicular to the stress so that those fractures -- we could put as many of those in place as we could. So if we have 36 frack wings -- independent frack wings in that section, that is the way you contact

the most conductivity and permeability, especially with these rocks where the permeability is .5 or less. This is how you get the most drainage.

Now, the converse of that would be drilling in the other direction. If you have a longitudinal frack, then the fracture is just following the well path (indicating). So you're not contacting all of this 40 acres of rock with hydro-fracks. They are lining up. They're interfering with each other, and that ways you get very poor recovery.

EXAMINER EZEANYIM: I don't like -- of course, I don't like that.

THE WITNESS: Right. So that is why we're interested in this. That is why we look at it.

The last conclusion is based on natural fractures. And they are -- they are part of the equation in the Bone Spring, but they are not the whole equation. And, in fact, with the magnitudes that we have shown in this model, in nature, as you're drilling the well, there really are no natural fractures that are propped open and permeable while you're drilling. And if you just completed the well without a hydro-frack, then you really wouldn't have any benefit even if you drilled in the right direction from the natural fractures.

The only way that you're really going to encounter natural fractures and help bring those natural fractures into the recovery of oil and gas is that you're going to activate them during the fracturing operation, and then hopefully prop them with something that won't crush so that you can get some additional recovery from the natural fracture system.

And the natural fractures will also line up perpendicular -- or the natural fractures are in parallel with the maximum stress, so if we're drilling north-south, we have east-west maximum stress. Then we will encounter the most possible natural fractures by doing that, but it doesn't guarantee that we open it. That, we have to look at what pressures are used. And I can get to that in just a minute.

I did want to show the stress profile, which is on page 11-3, again, showing the strike-slip faulting regime. The pressures -- this curve over here (indicating) is -- this is in psi per foot.

Q. (BY MR. PADILLA) Where are you pointing at, Mr. Ritter?

A. I'm pointing at 11-3, the left-hand side of the graph.

Q. The left-hand side of the graph?

A. Yeah. And so that is in psi per patio.

EXAMINER EZEANYIM: On the x-axis?

THE WITNESS: Yes, on the x-axis.

And so what we're seeing here in this kind of what I'll call jiggly line -- no better word for it -- that is the SHmin. Yes. Okay. That is the SHmin, and it's calibrated with various points of --

EXAMINER EZEANYIM: Which one is SHmin? The green line?

THE WITNESS: The green line, yes.

And then the red line --

EXAMINER EZEANYIM: Is SHmax.

THE WITNESS: -- is the SH -- I'm sorry. Yes. This one is SHmin. This is the lowest pressure.

Q. (BY MR. PADILLA) The green line?

A. Yes. And it's calibrated with actual leak-off tests or mini facture [sic] data.

And next is the vertical stress, which is just an integration of a density log. So that's the overburden stress. That's the vertical stress.

And then the other horizontal stress is higher than that, about 1.15 or so.

EXAMINER EZEANYIM: The dotted line?

THE WITNESS: The dotted line.

So those are the three stresses, and they show how the regime lines up.

EXAMINER EZEANYIM: So that is 1.05?

THE WITNESS: Yeah. Yes.

We have pore pressure assumed at .45 psi per foot or 8.6 pound per gallon, which is normal pressure. The SHmin is .75 for the sand and limestone and a little bit higher for the shale, estimated from frack data and our experience. And then the SHmax magnitude is estimated from regional experience and its relationship to these others.

EXAMINER EZEANYIM: Okay. Now, tell me, what are the input in this model? What do you input to get all these results?

THE WITNESS: You input core pressure. You input density logs. You calibrate a caliper log with a breakout model that's created from some of the software. The leak-off tests are input. That's the main body of the data that's used to build the geomechanical model.

EXAMINER EZEANYIM: So you put into that the model?

THE WITNESS: Yes.

EXAMINER EZEANYIM: It's called geomechanical model?

THE WITNESS: Yes, it's called geomechanical model.

If we go to the next page, 11-4, this is an

illustration of exactly what we were speaking of with a single fracture, if you look at the SHmax direction. So in our model, this would be drilling a well east to west. We would have longitudinal frack, just one frack wing along the well.

Q. (BY MR. PADILLA) And you're pointing to the bottom left side?

A. This one here, yeah (indicating).

EXAMINER EZEANYIM: That's when you're drilling east-west?

THE WITNESS: Yes. That is when you're drilling east-west in our model.

Then as we move from east-west to due north, we would have variations of angle. And this near-wellbore geometry, where all these fracks are colliding, the farther away you get -- or the closer you get out to vertical -- or I'm sorry -- to due north, so you are now starting to get fracks that are going sideways in the box; not just straight up, but sideways in the box.

And then you finally get to the most desired direction, which is the direction of SHmin, and there you will have frack wings as we set all these stages and clusters in our typical program. And those would be perpendicular to the stress. Those, or angles

very close to this, would give you the most hydrocarbon recovery. And I will also tie that to the discussion that Lyle Lehman had yesterday in relation to the permeability and to his simulations and things that he talked about in that program.

Q. (BY MR. PADILLA) Do you want to refer to his --

A. Yeah. This is probably a good place, so I can make that tie over to the --

EXAMINER EZEANYIM: Before you go to that, let's go back to that SHmin. That's the preferred orientation in this model?

THE WITNESS: Yes. That is the preferred orientation.

EXAMINER EZEANYIM: Because there is minimum stress.

THE WITNESS: That's because, in this model, you create the most perpendicular transverse fracks. Therefore, you can put the most number of stages into a particular polygon and put the most sand away.

EXAMINER EZEANYIM: Okay.

THE WITNESS: Now I'll take you back to what Lyle Lehman presented yesterday of this study. And if we go to the first page --

EXAMINER EZEANYIM: Which one?

THE WITNESS: This page here (indicating) and the Telecaster study, which is just to your left. There you are.

EXAMINER EZEANYIM: That's the same well.

THE WITNESS: Yes. So all of what we're working on is very local, specific to this area. There is some regional data that is used to develop model, but it's all calibrated with the data we have.

So if we go to this page here (indicating), you'll see across the bottom: Vertical, Vertical Fracked, Horizontal, Horizontal Axis Frack, Horizontal Transverse Fracks and Horizontal -- 5 fracks and with 11 fracks.

So to orient you to this diagram here (indicating), so vertical would mean a vertical well with no frack. The vertical fracked would be a vertical well with a frack in it. Then we get to a horizontal well with no frack at all. We get to a horizontal frack with an axial frack, and that axial frack is this single fracture, longitudinal fracture. Okay? And then we move to horizontal transverse frack, which is this frack here (indicating) in the SHmin direction, with only five frack wings. And the last one is a horizontal transverse frack with 11 frack wings. So it is just showing you the difference in recovery as you go through

the different stress regimen and combine that with a hydro -- or a fracture treatment.

EXAMINER EZEANYIM: And it also depends on your permeability, right.

THE WITNESS: It does. So the permeability is running on this axis, from .05 to -- from .005 to .05 to .5 to 5 millidarcy.

EXAMINER EZEANYIM: Now, let's go through that.

THE WITNESS: Sure.

EXAMINER EZEANYIM: I don't know. I'm very color -- so this color here, what do you call it? Gray.

THE WITNESS: Yeah, the gray color.

EXAMINER EZEANYIM: The gray is what you do with what is around the -- you put it on the z-axis? Okay. Now, the most recoverable on that is the horizontal 11 transverse, right?

THE WITNESS: Yes.

EXAMINER EZEANYIM: Okay. What is that color (indicating)? What is this color (indicating)?

THE WITNESS: Cream.

EXAMINER EZEANYIM: Okay. Explain the cream and the red and the blue.

THE WITNESS: Sure. Sure. So the cream color would be .05 millidarcy, which is approximately

the millidarcy that we have in the permeability of the rock that we're fracking. Okay? As you increase the permeability to half millidarcy and then 5 millidarcies -- what I would to point out here is, as you increase the permeability of the rock, the direction is not as important because the permeability is going up. And so you could even get, in this transverse axial frack, say with .5 millidarcies of .5 or above, you would have a well that could be east-west, in our case, and a higher recovery than a .05, while drilled in the correct direction. But it depends on the permeability.

EXAMINER EZEANYIM: Yes. It depends on permeability. So even the permeability, it doesn't matter whether you go east-west or north-south.

THE WITNESS: Permeability is permeability.

EXAMINER EZEANYIM: Yes. See what I mean?

THE WITNESS: Yes.

EXAMINER EZEANYIM: Okay. Now, if you look at this permeability -- this is very important. How did -- how did you come about -- or did you just assume this permeability?

THE WITNESS: Yes. Yeah. These were assumptions, and this was a 24-well simulation that just looks at the differences in permeability versus the angles of these fracks.

EXAMINER EZEANYIM: Okay. Now, what is your typical permeability? I know it's very hard to measure, but what is typical permeability.

THE WITNESS: We have our core data that is between .05 -- between .005 and .05.

EXAMINER EZEANYIM: .005?

THE WITNESS: It is between there. Okay? Between that and -- between the gray and the cream is what we estimate the permeability to be in the sand pile that we're in. So this would be the permeability that would be in Section 18. This would be the permeability that would be in Section 20. It would be the permeability we see in Section 29 with possibly a little variation. I'll give a little variation to that, but it's going to be within that bandwidth.

EXAMINER EZEANYIM: So if I -- if I may -- if I might, because it's interesting. If permeability is .5 on that BOE [sic], it doesn't really matter what your --

THE WITNESS: Exactly.

EXAMINER EZEANYIM: Because that wasn't showing on this model.

THE WITNESS: That's what this is showing (indicating), and it's still consistent with this (indicating).

EXAMINER EZEANYIM: So if I said, then, that the permeability in this area we're talking about is .005, it's a whole new ball game, or it's .05, right?

THE WITNESS: But it is --

EXAMINER EZEANYIM: Because I expected that -- with my mobility ratio.

THE WITNESS: Exactly.

EXAMINER EZEANYIM: So this is very important. Your study is very important for me to understand what is going on here.

THE WITNESS: Right.

EXAMINER EZEANYIM: Because it depends on this permeability issue. If we know what the permeability, it determines your intention.

And I want to make a point here. I think everybody want to get the most hydrocarbon here. We don't want to leave them underground. My profession doesn't allow me to leave a barrel of oil in the ground.

THE WITNESS: Exactly.

EXAMINER EZEANYIM: I know you guys don't want that. We have the same goal, right?

THE WITNESS: Right.

EXAMINER EZEANYIM: But Chevron and Tritex, Endurance, everybody wants us to get it out. The more we get out, the better, right?

I take you to your word that above .5 doesn't really matter in those sections what direction you go.

THE WITNESS: Yes.

EXAMINER EZEANYIM: Is that what you're saying?

THE WITNESS: That's what I'm saying.

EXAMINER EZEANYIM: Okay. Very good.

THE WITNESS: And I do want to point out that we do have core data from our Section 29 well, which is two sections south. Or is it three? But in the same sand pile, we do have actual core data and permeabilities that are in that range. Okay?

EXAMINER EZEANYIM: Okay.

THE WITNESS: Now, the other piece -- so if you assume that our permeability is in here, then you would assume that we are somewhere on the cream bar or maybe slightly less. Okay?

EXAMINER EZEANYIM: Okay.

THE WITNESS: And then if we look at the axis over here (indicating), on the x-axis, we get the oil recovery as a function of OOIP.

So now I'll take you back to the calculations that Mr. Sirgo made, where he laid out polygon. He calculated the volumetric, volume of oil,

in that polygon. And then he worked with four wells that we have, existing wells -- you'll remember his study.

EXAMINER EZEANYIM: Yeah.

THE WITNESS: -- in the area, and from that early data, we estimated our recovery would be approximately 13-and-a-half percent or so.

If you look at this axis, this is very close to the recovery that we are saying. So we're having somewhat of a matchup with --

EXAMINER EZEANYIM: Yesterday I think it was .71.

THE WITNESS: Right. So if you believe the permeability was this (indicating) and the recovery factor was approximately 13, 14 percent, which is -- which is on par for a conventional tight sand. That's a reasonable recovery factor for primary. If it had more permeability, you would be hoping for 20, 30, but that's what -- that's what is traditionally in this Basin.

EXAMINER EZEANYIM: Yeah. Mr. Ritter, I don't want to classify this as unconventional.

THE WITNESS: No, it's not. It's conventional. It's some tight rock, but it's not millidarcy.

EXAMINER EZEANYIM: Yeah. It's not millidarcy.

THE WITNESS: Right.

So the cream bar here (indicating) would be approximately what we're experiencing in our north-south wells. Okay? We are drilling north-south. And I'm also going to show you some additional exhibits today. Mr. Lehman said yesterday that he had other data that showed that the post-frack modeling that we've done on our fracks are showing that there is no longitudinal fracks, that they have to be transverse from the post modeling. So I'll share that with you in just a minute.

But those factors together are also supporting the idea that the east-west maximum direction for conversely drilling north-south is the best for hydrocarbon recovery. Because if we went down to the horizontal axial frack on this and stayed with the same permeability, our recovery factor would be six to eight percent.

EXAMINER EZEANYIM: If you do what?

THE WITNESS: If we oriented the well in the wrong direction. In our opinion, east-west is the wrong direction. From this study, we would expect that the frack would only recover -- or the well would only recover six to eight percent of the OOIP.

EXAMINER EZEANYIM: Is that shown here?

THE WITNESS: The horizontal axial frack is here, if you just follow the cream bars down to there (indicating), keeping the permeability constant. So that is the difference that you see. In fact, it's over twice, right, that bar versus the other bar with -- at the end with 11 transverse fracks. Roughly twice the difference in recovery.

EXAMINER EZEANYIM: I like to work with numbers. That's good. Okay. Go ahead.

THE WITNESS: And then the remaining part of Mr. Lehman's study was actually tying that back to the actual Telecaster well. So simulating what a transverse -- or what a transverse frack -- or what an actual frack would look like. And so we've been concluding that north to south, in our opinion, is more than twice as good than east to west.

EXAMINER EZEANYIM: Okay. Go ahead.

THE WITNESS: We have some new exhibits. While we're right here, I'll try to get the technical piece of this finished up.

EXAMINER EZEANYIM: You are done with these?

THE WITNESS: I'm done with that.

MR. FELDEWERT: So what is this exhibit?

MR. PADILLA: 16.

THE WITNESS: Since it's in Exhibit 16 -- if you go to the --

EXAMINER EZEANYIM: Is it marked? I don't see it marked. You have to mark it, so we know what it is. Can I write "Exhibit 16"?

MR. FELDEWERT: Well, I wrote "Endurance Exhibit 16" on mine.

(Discussion off the record.)

MR. FELDEWERT: It was up for discussion yesterday that the red-Bullseye map -- did you guys change it again?

THE WITNESS: We did change it just for you. We only -- we only changed the arrow so that there is now a data point that wasn't shown that helped us establish -- a blob in Section 19 is added there with 100, I believe, is the sand. And we actually added the --

That's the old one (indicating). Go one more page. I think it's -- there, that one (indicating). I'm sorry.

So that -- that blob in the middle now has the data point and the additional log you asked for.

MR. FELDEWERT: Well, I didn't ask for anything. So you-all have changed your maps again?

THE WITNESS: We have added the data point that you asked for yesterday. We have changed nothing else on the map.

MR. FELDEWERT: Which map are we supposed so use?

THE WITNESS: This is the current map (indicating). It has no other changes.

MR. FELDEWERT: That would be the fourth page into Exhibit 16? That's the map that you guys finally settled on?

THE WITNESS: Yes, it is.

Q. (BY MR. PADILLA) You just moved the arrow back?

A. We just moved it so he could see the data point.

I have no further discussion on that map.

EXAMINER EZEANYIM: Are you going to go through this?

THE WITNESS: Yes. I have one more.

Now, as far as the rest of this particular exhibit --

EXAMINER EZEANYIM: Which one?

THE WITNESS: -- 16, if you can go to the StrataGen report, which would be about four pages in or so --

Q. (BY MR. PADILLA) Mr. Ritter, is this the report

that Mr. Lehman said was confidential yesterday?

A. Yes.

Q. And you're not making that confidential today?

A. I have removed the confidential part. The confidential part of this report, although we could consider it all -- but the confidential report was new -- new design changes for our continuing frack design. But I'm sharing our current frack design for the Telecaster 30-3H primarily to show, first of all, the type of work that Mr. Lehman does for us, but specifically on page 5 of that report --

EXAMINER EZEANYIM: Before you go to that, Mr. Ritter, you were arguing with counsel about changing which, page 1 or page 2? Where is the arrow that was changed, because I need to get --

THE WITNESS: It's on the --

EXAMINER EZEANYIM: The second page?

THE WITNESS: No. It's a map. The second page that has the red blob in the middle.

EXAMINER EZEANYIM: This one?

THE WITNESS: The next page. The page after that.

That page. That was the one that was changed.

EXAMINER EZEANYIM: What was it yesterday?

THE WITNESS: The map before it was the map from yesterday, the previous page.

EXAMINER EZEANYIM: And this is not what you had yesterday?

THE WITNESS: No. The previous page is.

EXAMINER EZEANYIM: Is what you had?

THE WITNESS: Right. There was a lot of discussion from counsel about not having the data point on Section 19. It was just covered, so we provided it.

EXAMINER EZEANYIM: You provided those data points?

THE WITNESS: Just the data points.

EXAMINER EZEANYIM: In this new one?

THE WITNESS: Yes. But we didn't change the map. We just put the label on it.

Q. (BY MR. PADILLA) You moved the arrow back, is what you did, right?

MR. FELDEWERT: Hold on a second. Can I ask questions about this, Mr. Examiner?

EXAMINER EZEANYIM: Can we wait until we're finished, or you want to -- if it's -- I don't want you to forget the question. Yeah, go ahead.

MR. FELDEWERT: Well, I'm just trying to figure something out.

CROSS-EXAMINATION

BY MR. FELDEWERT:

Q. You said you moved some arrow back to display this new data point?

A. The data point was not displayed, not with the arrow. It was hidden. It was just not printed.

Q. Okay. So you didn't move any arrow that was covering up the data point. You just didn't have it on your map?

A. That's correct, the point itself. The well was there, but the point itself was not labeled as the other points, as you mentioned the 54 points.

Q. And you didn't have it on any of your other prior maps, correct?

A. That particular point, probably not.

Q. On any of the maps that you presented to Chevron at the November 20th meeting, you didn't have any data point on there, did you?

A. What's that?

Q. I said that data point wasn't on any of the maps you presented at the November 20th meeting?

A. Oh, no.

Q. And it wasn't on the map that you initially prepared for the hearing here today, correct?

A. That's correct. However, it's exactly the same

map that we're talking from yesterday. You complained that it didn't have a point 19. We provided it for you.

Q. Looks like you changed your contouring, didn't you?

A. No. It doesn't change the contouring. We just labeled it 100. No change in the contouring.

I would like to go to page 5.

EXAMINER EZEANYIM: And you brought in the 101?

THE WITNESS: Yes. It was just -- it was just adding the label for the data point.

EXAMINER EZEANYIM: Okay. Go ahead.

Are you done with your questions, Mr. Feldewert? Can we proceed?

MR. FELDEWERT: Yes.

THE WITNESS: All right. I would like to skip over to page 5 of this report.

CONTINUED DIRECT EXAMINATION

BY MR. PADILLA:

Q. What does that page 5 contain?

A. Page 5 contains a table, and this table is the output of the post-frack modeling from the program Fracpro.

EXAMINER EZEANYIM: I can't find anything.

THE WITNESS: Page 5 of the StrataGen

report.

EXAMINER EZEANYIM: So what are we doing here?

THE WITNESS: We're looking at this table, and the table is the output of the frack modeling -- The post-frack modeling of the actual frack design and job that we pumped on the Telecaster 3H. And what that is showing is that it was -- they were able to match, in their modeling, all of these specific frack lengths and frack heights for each perforation cluster. And the keynote here is that each cluster appears to have generated one single planar fracture.

And what that means is that these fractures are being generated perpendicular to the wellbore. If they were not, then they would be generating multiple fractures. They would be tilted. There would be differences in the pressures, et cetera.

It's further evidenced that the stress regime that we are in is consistent with the east-west maximum stress direction and a drilling direction of north to south.

On the following page, we also have --

EXAMINER EZEANYIM: Before you go to that following page, explain the last column of that.

THE WITNESS: The last column is the

conductivity that is delivered for the fracture wing.

EXAMINER EZEANYIM: You call it Fcd because it's abbreviated? What is Fcd?

THE WITNESS: This is the fracture conductivity.

EXAMINER EZEANYIM: Oh, okay.

THE WITNESS: And it's a parameter that's used to look at the efficiency of the fracture treatment.

Q. (BY MR. PADILLA) Mr. Ritter, let me understand that. What you've just explained is that the model maps the actual data that you -- the post frack?

A. Yes. And that this modeling is also consistent with the other modeling that was done by Lyle Lehman, and it is consistent with our stress model. So I'm just pointing out that those are all consistent.

So further on the next page, if you want to turn there --

Q. This is a page with the Telecaster 30-3H post frack?

A. Yes.

Q. What does that say?

A. So these are the initial shut-in pressures that you asked about, the ISIPs, for each one of the stages. Okay? And then the calculated frack gradients. And so

you can see a fairly consistent fracture gradient, fairly consistent ISIP across the stages, and that also indicates that we are not running into other fractures or the last frack treatment, the last stage. We're not crashing into it. All these are consistent with that.

Q. So how does that relate north-south, east-west?

A. This is just further evidence that in our north-south-oriented well, our fractures that we're generating are going east and west.

And then we've added some additional data on frack stages just to show how fairly consistent they look in their pressure-pumping scenarios, which would also be indicative of what I've just described.

Q. So let's take the Stage 6, on the next page.

A. Right. The main -- the main line that you want to look at in any of these fracture treatment lines is the green line, and that is the treating pressure line. So we're watching that as we go across, and the shape of that line and its character, the pressure responses are very similar for these three stages.

Q. What does that mean?

A. It means that they're consistent. They're not running into each other. They're not creating this geometry that is making it harder to frack the well.

Q. So if the natural fracture was running

east-west, then you wouldn't have this --

A. No. No. You would have a big problem.

Q. What would the green line look like?

A. Fracture pressures would be much higher.

EXAMINER EZEANYIM: What is your y-axis, the unit Y?

THE WITNESS: On the left or the right?

EXAMINER EZEANYIM: What are the units on this (indicating).

THE WITNESS: The main axis that we're interested in here is pressure.

So, again, since we cut Lyle's testimony short yesterday afternoon, I just wanted to present the information that supported what his last statement was. And really that's the only reason for these exhibits.

Q. (BY MR. PADILLA) What was his last statement?

A. His last statement was that the modeling was showing that we were not creating a longitudinal frack. We are creating transverse fracks.

EXAMINER EZEANYIM: Explain your blue dots.

THE WITNESS: Sure. That means open the wellhead. So these are the different pressure events in the well as we're bringing on -- getting ready to frack. And then 30 is the ISIP at the end of the job.

EXAMINER EZEANYIM: Yeah.

THE WITNESS: Okay?

The next exhibit is the Telecaster 30-3H frack design, and we just provided it for information.

Q. (BY MR. PADILLA) That's past the three graphs?

A. Yeah. That's past the three graphs.

And then I wanted to, last, put in the Endurance Telecaster 3H production history. So this is the result of that frack.

EXAMINER EZEANYIM: Which page?

THE WITNESS: We're on the last page.

Q. (BY MR. PADILLA) Let's go to the second-to-the-last page, and explain that.

A. I'll say one thing about this page. So this is the way we do our frack jobs. And we put -- when we see this word, "EconoProp," EconoProp is a trade term for ceramic propping. And when we get further in my testimony today about AFE costs, et cetera, I will point out that our completion costs are approximately $1 million higher than Chevron's completion costs. Even though our total well cost is 7 million, our completion cost is additional million on top of that due to this ceramic frack proppant.

Q. Why ceramic prop matter?

A. Because ceramic is a stronger proppant. When you produce these wells that are low permeability, you

create a very high pressure drop across the formation very quickly, in light of the well, and then the vertical stress, which we have measured, will begin to crush the sand that is in the fracture.

And so we know what the pressures are. We know that the sand crushes relatively close to 6,000 psi or so. And when we back out our hydrostatic and look at what is happening in the early life of the well and the later life of the well, when you're approximately deeper than 10,000 feet in this part of Lea County, then you're in an area where ceramic is stronger than the sand and prevents that crushing from occurring.

Q. So that goes to the life of the well?

A. Life of the well. This type of completion design will recover more oil because it has -- the proppants will hold up better.

The main reason, though, is that the proppants are much rounder. The EconoProp, and another product called Carbolite which is even rounder than EconoProp, is much, much rounder than sand. So if you can imagine pouring a cupful of marbles into a glass jar, they stack up. And that porosity that's created is 39.8 percent or so, the ultimate porosity that you can have with spheres. So the EconoProp and the Carbolite stimulate more of a jar of marbles than an angular sand

that can be mashed together. And so this, overall, gives you much more higher permeability in the frack, and, therefore, you can distribute your pressure drop across the frack wings much easier. This all leads to more production.

In fact, you mentioned yesterday, Richard, that some of these wells can be quite prolific. And the production, if you look at the last page here for this particular well, a 55-day cum is 36,400 barrels, 85 mcf.

EXAMINER EZEANYIM: This is for that 3H?

THE WITNESS: Yes. This is for the 3H.

And I can tell you, as of this morning, the 4H, which has only been on production for about seven days, has already cumed over 8,000 barrels. It's even better than this well.

EXAMINER EZEANYIM: Who owns the well? You?

THE WITNESS: Huh?

EXAMINER EZEANYIM: You own the well? Is that your well?

THE WITNESS: Yes. And these are 100 percent wells. So we're putting all of our money into our technology.

EXAMINER EZEANYIM: This is your well, too?

THE WITNESS: Huh?

EXAMINER EZEANYIM: This is your well, too?

THE WITNESS: Yes.

EXAMINER EZEANYIM: Okay. Good.

THE WITNESS: And this well is on the crest of the same structure that we're been talking about, just due south of Section 18.

EXAMINER EZEANYIM: Yeah, I know. It's in Section 30.

And they're all north-south wells?

THE WITNESS: Yes, they're all north-south wells.

So the production history, the way the fracture is at, the stress orientations that we're getting, everything leads us to believe that north-south in this particular area is the correct stress and not east-west. Or I'm sorry. North-south is the best drilling direction. East-west is the stress.

And I'll just say, I find it very, very hard to believe that in one half section of the same sand pile, that a regional stress that's in current-day strikes-slip mode can change 180 degrees. I find that very difficult in my experience, with over seven years with Geomechanics, looking at wells all over the world.

EXAMINER EZEANYIM: You are talking about Section 18?

THE WITNESS: Yes. I'm talking about Section 18.

EXAMINER EZEANYIM: Yeah, I know.

THE WITNESS: So this is further evidence that we see it as a draped anticline. Actually, it's not. It's a draped feature. It's not an anticline at all. It's just a draped feature. And then we would have the same stress regime in that feature going into Section 18, which is why we have so vigorously opposed an east-west direction. If we thought the permeability or we thought it didn't matter, then we would obviously not have been so strong in our response.

EXAMINER EZEANYIM: Okay. Go ahead.

Q. (BY MR. PADILLA) Are you done with Exhibit 16, Mr. Ritter?

A. Yes. I think I'm ready to go to the AFEs.

Q. Let's go on to what we have marked as Exhibit Number 2. In Exhibit 2, the AFE is on the third page.

A. Oh. You're going to the actual AFE.

Q. Right.

A. We can go and look at, line by line, each of the AFEs. If we want to do that, we can, but --

EXAMINER EZEANYIM: We don't want to do that.

THE WITNESS: I didn't think so.

So I have summarized the main components of the AFE for the Endurance Starcaster well, for the Chevron Bell Lake well. And then I've also included, by the same sections, what the last two Stratocaster -- last two Telecaster wells actual costs are, and I've included, on the back of that, those two final drilling report days to verify that these are the costs that we are drilling and completing wells for with ceramic fracks in the area.

So if I go to that first page, it just has a table. I think we heard testimony from the facilities engineer that there is a marked difference in facilities cost versus our well, and we understand that. We understand that Chevron is designing that to a different standard than we and also anyone else in the area is doing. We are designing ours to the same standards that Concho, Cimarex and Devon are using for their tank batteries. So we're very comparable in that regard.

I think the only other comment I want to make is the discussion about fiberglass versus steel, yesterday, seemed to be interesting. Those fiberglass tanks are only water tanks in our battery. So I think he misinterpreted that we actually had water -- fiberglass tanks with oil in it. That is not the case.

All of our oil tanks are steel and only

water tanks are fiberglass, which is common with all the other operators in the area.

EXAMINER EZEANYIM: But you don't use a LACT unit?

THE WITNESS: No. We do not use a LACT unit. And, quite frankly, I struggle with the -- with the use of a LACT unit unless I'm injecting into a pipeline. Then it takes the place of gauging and also of transfer of the oil into a pipeline. So in that respect, we don't use that in our design, nor does Concho, Cimarex or Devon.

Q. (BY MR. PADILLA) Mr. Ritter, before we move on, were you referring to Exhibit 10?

A. Yeah. I think I was referring to Exhibit 10-1. I'm sorry.

So the one thing I wanted to point out here is we've already talked about the differences in facilities design, and that is the major difference.

We do see that we have a difference in the drilling cost that is substantial between the Chevron well and the Endurance well. We're not quite sure why there is such a difference there, but there is a difference.

I will take you down to where we looked at completion costs, and our fracture costs and fracture

treatment is roughly double the cost of the Chevron well. So I did want to point that out. The reason for that is the ceramic proppant. However, even with a facility cost in place, we see that our overall well costs are about $7 million. And I will grant the Chevron folks their adjustment to yesterday's number and just call it 8.5 million. We actually have received some of the same benefit that he talked about.

You'll notice the difference in tank batteries between Telecaster and Starcaster. We are starting to see drops in price of approximately $200,000, as we bid out our batteries coming up.

So I can confirm that the presentation that Chevron made is real, and we believe those numbers, and we're fine with their representation.

EXAMINER EZEANYIM: Okay. Hold on to that, Exhibit Number 10, 10-1. I see four wells here on the left-hand side. Are those the ones in question?

THE WITNESS: Yeah. Those are the ones in question. These are the proposed ones.

EXAMINER EZEANYIM: The Starcaster 4H is Endurance, and then the Bell Lake is Chevron?

THE WITNESS: Chevron.

EXAMINER EZEANYIM: For those, I have the total?

THE WITNESS: And you can mark through the total AFE costs and call that 8.5 million, if you wish.

EXAMINER EZEANYIM: Which one?

THE WITNESS: On the Chevron Bell Lake.

EXAMINER EZEANYIM: Why?

THE WITNESS: Because they testified yesterday that they had reduced their AFE since they sent the AFE out for participation questions.

EXAMINER EZEANYIM: Okay. On the right-hand side, I have the Telecaster 3H.

THE WITNESS: Yes.

EXAMINER EZEANYIM: Who owns those?

THE WITNESS: These are Endurance wells. They're 100 percent Endurance wells. These wells are just two miles south of the Starcaster, or the Section 18 well, and these are the wells that we are presenting that are IPing. The 3H was over 1,100 barrels per day, 30-day IP. Its maximum IP was 1,300 -- no. 1,750 barrels, I believe.

EXAMINER EZEANYIM: Mr. Ritter, what is the sense of providing those two wells?

THE WITNESS: I just wanted to show the OCD and Chevron that we are not providing an AFE that is low for any artificial reasons, that these are our real numbers. And that is the reason.

EXAMINER EZEANYIM: Okay.

THE WITNESS: So we can go to the economic projection of these.

EXAMINER EZEANYIM: What exhibit is that?

THE WITNESS: That is 10-2.

EXAMINER EZEANYIM: Oh. 10-2? Okay.

THE WITNESS: Yeah. It's attached.

Q. (BY MR. PADILLA) What conclusions do you draw from that, 10-2 and 10-3?

A. So you'll remember that Mr. Sirgo, yesterday, calculated the exact OOIP -- or I shouldn't say exact, but he calculated the OOIP in those two different polygons and then applied a recovery factor to those OOIPs to get the recoverable oil regardless of direction. Okay? And we had those numbers, and I believe they were 365 NPO in the north-south direction, and 280-odd barrels in the east-west direction. So they were already markedly different because we believe there is more sand going north-south than east-west.

But then we also applied the factor very similar to what we looked at in Mr. Lehman's -- I'll refer back to it, where if we're drilling the well in the wrong direction, we go from this cream bar (indicating) down to this cream bar in recovery (indicating). And so we use that difference in recovery

to handicap the east-west wells.

And then we used the actual capital of Chevron the well with the east-west calculation and the actual capital for our well with the north-south calculation.

EXAMINER EZEANYIM: Which one is east-west? The first table?

THE WITNESS: No. The 10-3 is the east-west.

EXAMINER EZEANYIM: The 10-3 is the north-south, right?

THE WITNESS: No. 10-2 is north-south.

EXAMINER EZEANYIM: And 10-3 is east-west?

THE WITNESS: Yes.

EXAMINER EZEANYIM: These are wells from Section 30-19? Where did you get these wells from?

THE WITNESS: These are the reserves that were calculated by Mr. Sirgo in his deposition.

EXAMINER EZEANYIM: Okay. I can take a look at those.

THE WITNESS: Okay.

So I'll point out two things on the first set of economics. One, the internal rate of return is about 35 percent, which is really right at the lower end of the wells that we drill.

EXAMINER EZEANYIM: That percent you're using, going which direction?

THE WITNESS: North-south.

EXAMINER EZEANYIM: And if you go east-west?

THE WITNESS: It's a negative internal rate of return.

EXAMINER EZEANYIM: Negative?

THE WITNESS: Yes.

Q. (BY MR. PADILLA) Where do you show the negative?

A. At the bottom of each one of these pages.

Now, I'm sure Chevron might think, well, we've handicapped the well too much. We could actually put the full 281 barrels of -- 81,000 barrels in there, and we would still have a PV 10 of zero.

EXAMINER EZEANYIM: You are talking about present net worth?

THE WITNESS: Yeah, there is present worth as well.

So, really, any way we look at the north-south versus east-west well, it's undesirable economically, in our view. And we firmly believe that we will see a detriment to an east-west well because of the stress direction, because of the effects of

longitudinal fractures, and we would not recover as much reserves that are actually in the box, in the OOIP box. And so that is the presentation there.

Another reason why we have been opposed to this well, even before running this particular set of numbers, we also discussed, I think, this key point in our November 20th discussion with Mr. Schwartz, where I mentioned that we could not get any rate of return out of the well they proposed, and that was our main reason for opposing the east-west, is that we were potentially being force pooled into a well that had a no chance of any recovery of economic funds.

EXAMINER EZEANYIM: Excuse me. You mentioned something that I needed to address. You mentioned Mr. Schwartz' name, and you mentioned a meeting. Were you at that meeting?

THE WITNESS: I was at that the meeting.

EXAMINER EZEANYIM: I mean, you are looking at me like I don't know where he's going to now. Don't know where he's going to now. That might be your position. I don't know. But I wanted to say, Mr. Schwartz and everybody from Chevron and from Endurance, is that you guys met that day, and you were there. If you guys had shared all this information, you guys would not be presenting to me today. I don't know

why you guys don't do that. I mean, you guys may have a recent agreement. If you were there --

THE WITNESS: If you would like me to comment on the meeting, I will be happy to.

EXAMINER EZEANYIM: Yes, I will, because, you know, I have something else I could be doing. If you had agreed to do, we would not be here.

THE WITNESS: Yes.

EXAMINER EZEANYIM: And I think we have talked a lot. So the point I'm trying really make is, he was at that meeting; you were at that meeting. Did you-all share this information among you, what you have and what you have? I think it's better when you don't go to court for anything. You don't get anything when you go to court or come to hearing. So we could have addressed this issue. I may not have heard about it if you guys agreed to do it.

So I'm not going to go back and waste time and tell me what happened at the first -- I don't want to be a part of the meeting. You guys have to have a meeting. Maybe you guys will go back to the drawing table and tell me to dismiss the case. That would be the best thing for me, because I can see that I don't know what I'm going to do.

And in this case, it appears I'm not going

to decide this baby. Somebody has to be appointed the operator, because there is no way I can do that, because there is one east-west, there is one north-south, and we don't want those to be consent [sic]. So somebody has to be an operator, and I don't know who is going to be.

So I'm warning you now, if you guys want to -- maybe after this hearing, may be an eye-opener. You go back to the drawing table, share the information you have, that information, too, and then see whether you can come to an agreement. And I hope that you are going to do.

THE WITNESS: Well, in response to that as well, we started off our discussion trying to do exactly as you said, come to an agreement in some way, shape or form with Chevron on this and other opportunities. In fact, we are going to be partners with Chevron in four or five more wells in this area. We never wanted to start off anything that was adversary with Chevron from the beginning. So we actually went down there to meet with them not only on Section 18, but on another proposal we had and some other suggestions about how we might cooperate on some of the other wells.

In fact, at that meeting, we also, you know, presented our experience very much. We've presented most of what we presented today, and not much

has really changed between now and that meeting, other than the fact that we have tried to communicate with them.

In fact, we can probably introduce other exhibits from today, all the e-mail and different conversations and options that we provided to Chevron at three or four different opportunities. In fact, once we, unfortunately, had to kind of try to climb up the management ladder at Chevron to get some response because we were not getting a response on the proposals and efforts that we are using. So we can share those and put them in for your reading.

But we feel like we have made every effort not to be in front of you here today. We have the science to back up what we're doing. We have the experience in the area. We're applying that. We think we can make very good wells. I mean, all of our wells that we are making now are in the top 10 percent or higher than any of the Bone Spring wells in the entire play. And Chevron is a partner in the east half of 29, which we are designated the operator, and we have signed an operating agreement and JOA. So it's not that we're not going to be partners. We're going to be partners. And we hated to come here and air our laundry out as well, but, unfortunately, we were forced to.

The well was spudded before we were notified for pooling, and we're really, you know, concerned that that's how it got started.

EXAMINER EZEANYIM: Yeah. I like the fact that you say you're going to fight with Chevron. I don't like it when that happens. Because if you start a fight, the fight collects, and then you guys come in for compulsory pooling every time. I like to have order and keep -- we don't want to fight with you or whoever in the area, and that is the best thing to do, you know.

I used to be there. We can negotiate these things and see where we can come to agreement to be able to do the right thing. I mean, that's okay. I agree with you. We didn't come here to bruise the eye and everything. That's not why I'm here. I'm here to, you know, make a determination on which well to go. I don't know until I'm submitted all the facts. I don't know now because there is a lot of information in front of me. I have to go back to the information and see what I can do.

Okay. Go ahead. Do you want to continue with him, or are you done?

MR. PADILLA: Mr. Examiner, I would simply like to hand you what we've marked as Endurance Exhibit Number 17 and ask you to take administrative notice of

that. Those are correspondence to the director of Division concerning the commencement of the Chevron well.

MR. FELDEWERT: Which exhibit? 17?

MR. PADILLA: 17. This correspondence is --

EXAMINER EZEANYIM: So you wrote this after you knew they started the well, right?

MR. PADILLA: Yes. That includes Mr. Feldewert's --

THE WITNESS: We saw the rig on location. We didn't know the well had started.

EXAMINER EZEANYIM: Do you oppose taking administrative notice of this?

Is this an exhibit or what? Do you want to admit it?

MR. PADILLA: Well, it could be admitted as an exhibit, but this is a background of how this whole thing started.

EXAMINER EZEANYIM: What do you want to do, because I --

MR. PADILLA: Introduce it as an exhibit.

EXAMINER EZEANYIM: You want to introduce it as an exhibit.

Okay. Now, how many exhibits do you want

to admit, so I can ask them whether they have any objection.

MR. PADILLA: I'm sorry?

EXAMINER EZEANYIM: How many of them do you want admitted into evidence, because we need to admit them.

MR. PADILLA: Oh, okay. Exhibit 17, Exhibit 10 and Exhibit 11.

EXAMINER EZEANYIM: Okay. Start from -- 10, 11.

MR. PADILLA: I think we referred to the AFE, which I can introduce through our land person.

EXAMINER EZEANYIM: So 10, 11, 17?

MR. PADILLA: Yes.

EXAMINER EZEANYIM: Do you have any objection?

MR. FELDEWERT: No.

EXAMINER EZEANYIM: Exhibits 10, 11, 17 will be admitted into evidence.

(Endurance Resources, LLC Exhibit Numbers 10, 11 and 17 were offered and admitted into evidence.)

EXAMINER EZEANYIM: Are you done with Mr. Ritter?

MR. PADILLA: No. Let me ask one final

question.

Q. (BY MR. PADILLA) Mr. Ritter, would approval of the Endurance application be in the best interest of oil and gas and correlative rights?

A. Yes, it would.

MR. PADILLA: That's all I have of this witness.

EXAMINER EZEANYIM: Thank you.

Cross-examine?

MR. FELDEWERT: Mr. Examiner, I notice we've been at it for an hour and a half. Any chance we could break to use the facilities before we start the cross-examination?

EXAMINER EZEANYIM: Okay. Sure. You guys want to take a break, because I want to go, because we have to be done and finished by 12:00?

MR. FELDEWERT: Before we take a break, I notice that Mr. Ritter has a number of documents in front of him. I think some of them are exhibits, and some are not.

So can I take a look at what you have in front of you, Mr. Ritter, during the break?

THE WITNESS: Oh, sure. They're just -- they're just -- I'll tell you what they are.

MR. FELDEWERT: Why don't you state for the

record.

THE WITNESS: They're the same questions that you read -- did your discussion with. I just had my own copy.

MR. FELDEWERT: Okay. Do you mind if I take a look at them while we're taking the break?

THE WITNESS. Sure.

(Break taken 10:35 a.m. to 10:54 a.m.)

EXAMINER EZEANYIM: Mr. Feldewert.

MR. PADILLA: Mr. Examiner, before he starts his cross-examination, I have one additional question.

EXAMINER EZEANYIM: Okay. Go ahead.

Q. (BY MR. PADILLA) Mr. Ritter, Chevron has already commenced the well here and has gone to 5,000 feet. Do you have any thoughts on how that could be remedied if your application is approved?

A. If the well is indeed at that depth, of 5,000 feet, it would make a very good saltwater disposal well for the field area. So it could be utilized in that capacity.

EXAMINER EZEANYIM: Which well?

MR. PADILLA: The well that Chevron already started.

EXAMINER EZEANYIM: What was your question?

MR. PADILLA: My question is: If the Endurance application is approved, how can that well be utilized in order not to waste that effort?

EXAMINER EZEANYIM: Oh, okay. Okay. What was the answer?

THE WITNESS: Yes. So it could be used as a saltwater disposal well. I'm not sure if it's been cemented to 5,300 with casing. There is nothing in the record with the OCD.

Has it been cemented at 5,300 feet? I guess that's a question I'll throw out? But if so, it's also next to a road, so it would be -- it would make a very good saltwater disposal facility area.

EXAMINER EZEANYIM: Go ahead.

MR. PADILLA: That's all I have.

CROSS-EXAMINATION

BY MR. FELDEWERT:

Q. Mr. Ritter, you're aware that if Endurance really believes that the east-to-west well is not going to be economic, that you could opt out of the well, correct? I mean, you don't have to participate.

A. That is possible. But I'm 55 percent of the north half, and why would I want to just walk away from $700,000 of lease costs?

Q. You have now seen the evidence that Chevron's

presented here yesterday morning.

A. I did.

Q. And you had a chance to review it, right?

A. I have.

Q. Do you agree with their interpretation of the Section 18 area?

A. No.

Q. Are you entrenched in a north-south well?

A. I'm only entrenched in the north-south well because of the permeability that is being exhibited across this entire section. The permeability would be higher. We could demonstrate the permeability that was higher. If the permeability was something similar to the Macho Nacho area, which you identified as something similar to what we have here, then I could be inclined to go in that direction. But there is no evidence. In fact, all the evidence we have is pointing to a low permeability, and that requires the direction to be transverse and to include as many fracks as possible.

Q. What is the permeability of what you call the pile of sand in Section 20?

A. It's between .005 and .05 millidarcies.

Q. .005 and .05?

A. Yes.

Q. In Section 20, in that pile of sand, you'd be

drilling in?

A. That's correct.

Q. But as I understand your testimony -- and correct me if I'm wrong -- your company has taken a position that you would only agree to development if it's north to south in Section 18?

A. Yes. And, in fact, I shared that on our November 20th meeting with Chevron. That was the entire intent of us going down and trying to work out some other option.

Q. Right. But my point is -- my point is at that meeting, and again today, you're saying, We're not going to agree to anything but the north-south well; is that correct?

A. That's correct.

Q. Now, you have proposed a well in Section 19, correct?

A. We have.

Q. And that's a north-to-south well?

A. That is correct.

Q. Has the company drilled mile-and-a-half laterals in other areas of the Basin?

A. Have we? No.

Q. Are you aware that other companies have in the 2nd Bone Spring?

A. There are companies that have.

Q. And do you believe that one of the optimal ways to proceed in the 2nd Bone Spring Sand is to drill a mile-and-a-half well?

A. I haven't seen the evidence that that is optimal. In fact, all the extended-reach wells we have built there have had EUR less than the wells we are currently producing in the area. In addition, they have a lot of mechanical risk in the completion. And the only way that we would engage in a 7,500-foot-plus well would be if we were trying to secure a lease from expiration. Then we would consider it. That would really be the only internal consideration that I would have to that.

Q. I thought you had proposed to Chevron a mile-and-a-half lateral?

A. We did, extending from the south half of Section 20 into Section 29.

Q. Have you discussed that with Chevron?

A. It's not a mile and a half.

Q. What is it?

A. It's roughly 5,700 feet or 5800 feet. It's not a full 7,500 lateral.

Q. Roughly a section and a half?

A. No. Roughly a section and a quarter.

Actually, less than a section and a quarter because of offsets.

Q. But you've talked about extending a lateral and beyond the section lines into another section in the 2nd Bone Spring Sand, haven't you?

A. Only to capture what would be the orphaned sand that is currently there to prevent waste, as we've discussed.

EXAMINER EZEANYIM: Excuse me, please. Excuse me, please. The section of the well -- you're asking about a section and a quarter? I thought it's just a section.

THE WITNESS: We're not here -- it's in one of the other areas that we are partners with Chevron.

EXAMINER EZEANYIM: It's a different well?

THE WITNESS: Different well.

EXAMINER EZEANYIM: When I hear about a section and a quarter, I think of 160 acres, but if it's different well to get something, okay. I'm not interested in that, but I'm interested in the well that is in that east half-east half, which is just 160, right?

THE WITNESS: That's correct.

EXAMINER EZEANYIM: The way you are asking -- I mean, I don't want to ask you a question --

the one that has been drilled somewhere, I don't know about that, right? I don't know about that well?

THE WITNESS: You don't know about that well.

EXAMINER EZEANYIM: I don't know about that, but I have to ask.

Q. (BY MR. FELDEWERT) So if I look at -- let's take your Exhibit 16. Do you have that? Would you pull that out in front of you, please?

EXAMINER EZEANYIM: 16?

MR. FELDEWERT: Endurance's Exhibit 16. That's the one that was just recently submitted.

Q. (BY MR. FELDEWERT) Right? Isn't that your exhibit?

A. It is. It is. Mine is missing the first couple of pages.

Can I grab a copy?

MR. PADILLA: Sure.

MR. FELDEWERT: And, Mr. Examiner, I advise you to go to the fourth page of that exhibit.

EXAMINER EZEANYIM: Fourth page?

MR. FELDEWERT: Fourth page.

Q. (BY MR. FELDEWERT) Okay. We're on the fourth page of Exhibit 16, right?

A. Yes.

Q. My point of this, Mr. Ritter, is that you have already proposed a well in the east half-east half of Section 19, which is just south of Section 18, correct?

A. That's correct.

Q. And didn't you indicate to Chevron in your discussions about extending a well out of Section 20, south, into Section 29?

A. Yes.

Q. That you thought, in the 2nd Bone Spring Sand, a longer lateral is optimal for the area?

A. No. The longer lateral is not optimal for the area. The reason for the lateral is that there is an orphaned 40-acre parcel in Section 20 that no one would ever be able to recover the oil from, and, therefore, we would propose to add that 40-acre section so that we would not be wasting oil, as Mr. Ezeanyim is interested in.

Q. So one option, if you're really entrenched in a north-south orientation in the area of Section 18, is that you take your Section 19 well and extend it up on the section and cover the south half, right?

A. I don't known any of the south half.

Q. But you do pool that acreage, just like you're trying to pool here today?

A. I could, but the owner of that acreage, who is

BTA, who has protested to your well as well, who has, in the letter that they've protested to you and to the Commission --

Q. They want a stand-up well.

A. -- stated that they want a stand-up well in 18.

Q. Right. So you can extend your --

A. And that they wanted to join us to drill it.

Q. I agree. They did say that.

So if you can extend your Section 19 well into the south half of 18, you can accommodate your desire to have a stand-up well in Section 18, in the south half, and your desire and BTA's desire to have a stand-up well in Section 18. And that's all federal acreage, isn't it?

A. That is.

So Section 19 -- or Section 29 is a combination of state and federal, and we've pooled that before as well.

Q. So it can be done?

A. It can be.

Q. Is that an option that you have considered with these -- both parties' desire here, to try to develop this acreage?

A. No, because we own half of Section 18 at the moment. This would have been something that we could

have discussed if we were able to discuss this at our 20th meeting. And the three or four subsequent times that we they gave options --

Q. Are you willing to consider that now?

A. No.

Q. You're not?

A. No, because we were forced to purchase acreage to defend our spot up there, and you're asking to give it away. I'm sorry. And it's a waste. The well you drilled will be a waste for everybody.

Q. Okay. And if you really feel that, you could opt out of that well, correct?

A. Do you want to pay me for all of my acreage costs?

Q. I'm just trying to see --

A. In fact, Chevron's never offered that. In all of our discussions, they've never offered.

Q. Did you review our pre-hearing statement here today that we filed before this hearing?

A. I believe so.

Q. And didn't it indicate in that pre-hearing statement that one option for Endurance would be to extend its proposed east half-east half well into Section 19, up into the south half of Section 18, so they could accommodate your desire and BTA's desire to

have a stand-up well? And Chevron could have a lay-down well in the north half of 18, and then we'd have actual data for these two sections.

A. We have actual data. We have wells drilled on here. We have wells producing over 1,500 barrels a day. We don't need to waste it.

Q. You're not willing to consider that? Is that what I'm hearing?

A. I was willing to consider many things during the many meetings that we attempted to have with Chevron, the calls that we had with Tom Krause.

Q. I'm just trying to help things out now. I'm just asking: Are you willing to consider that now?

A. If we would have been helped out, we would have had an opportunity to work this out before a hearing. And this only gave me the option -- in fact. Mr. Schwartz commented to us that our option was a bidding war.

Q. My question is: Are you willing to consider that option now?

A. No.

MR. FELDEWERT: May I approach the witness, Mr. Examiner?

EXAMINER EZEANYIM: Sure.

Q. (BY MR. FELDEWERT) I'm going to hand you what

I've marked as Chevron Exhibits 34 and 35.

A. Are you offering to buy me out of Section 18, or just opt out, just leave my money on the table?

Q. Mr. Ritter, we have in front of us --

MR. FELDEWERT: Mr. Examiner, I would also -- we're going -- just so I can streamline and make it quicker here. You already have in front of you page 4 of Exhibit 16.

EXAMINER EZEANYIM: This one?

MR. FELDEWERT: Yes.

EXAMINER EZEANYIM: Yeah, I do.

MR. FELDEWERT: The other thing I'm going to refer to during his examination is Chevron Exhibit 11, so if you could lay that out in front of you.

Q. (BY MR. FELDEWERT) And, Mr. Ritter, if you could do the same thing, too, please, Chevron Exhibit 11, in the notebook.

A. (Witness complies.)

Q. Now, Mr. Ritter, are you familiar with Chevron Exhibit 34?

I'm sorry. Let me have you catch up. Turn to Exhibit 11 in the notebook. Lay that out in front of you.

A. All right.

Q. There you go. Put it to the right and get it

out of the way.

Then I want you to look at Chevron Exhibit 34. That's one of the two maps I just handed to you.

A. Got it.

Q. Got it?

A. Uh-huh.

Q. Are you familiar with that map?

A. Yes.

Q. Isn't that map you presented at the November 20th hearing?

A. It is.

Q. And was the same methodology used to create this map as was used to create the new map that you just introduced here this morning, which is on page 4 of Exhibit 16?

A. The methodology might have been the same. But we've drilled significantly more wells since that time, so it may have been updated.

Q. So the methodology is the same, correct?

A. I'd have to ask Mr. Harris if it's exactly the same. I would assume it is.

Q. And then Exhibit 35, what's been marked as Chevron Exhibit 35, are you familiar with that? Have you seen that map before?

A. I may have. Can you -- it seems

unrepresentative because all the context has been taken off. Was there any headers on this before at any time?

Q. No.

A. All the maps that we have ever given Chevron have actual --

Q. I'll represent to you that this is a map that Chevron sent -- or Endurance sent to Chevron on December 19th? Remember that e-mail?

A. Can you tell me which person is that?

Q. I believe it was from Mr. Sirgo.

A. It's from Mr. Sirgo --

Q. To Chevron.

A. -- to Chevron to -- what's the lady's name?

Q. Someone. I don't remember.

A. She's the head land person.

Q. So you're familiar with that?

A. We did send a copy of that.

Q. And you attached this, what's been marked as Chevron Exhibit 35, correct?

A. If that is where it came from, I'll agree that that's -- but --

Q. My question is: Was the same methodology used to create Chevron 35 as was used to create 34, and then what is the new map in Exhibit 16? Is it the same methodology?

A. I will have to ask Mr. Harris. He's the one who constructs the maps.

Q. Do you have any reason to believe it's a different methodology?

A. Unless -- unless he tells me they've added wells or they've looked at porosity cutoffs differently, I can't tell you that without conferring with him.

Q. And then in addition to these two maps and the map on page 4 of Exhibit 16, when you came to hearing today -- or yesterday, you brought the map which is on page 3 of Exhibit 16.

A. Yes. We brought the map.

Q. So we've had four maps, different maps, correct?

A. That's correct.

Q. If I look at the first map you gave to Chevron, which is Exhibit 34, I'm looking over in Section 20.

EXAMINER EZEANYIM: What are we looking at? Which one?

MR. FELDEWERT: Take Exhibit 34, and I want to compare it with their new map they gave us this morning, which is page 4 of Exhibit 16. Okay?

EXAMINER EZEANYIM: Yeah.

Q. (BY MR. FELDEWERT) Now, Mr. Ritter, you'll see in Section 20, which is an area that you-all have

developed, correct?

A. Uh-huh.

Q. And you claim to have a lot of knowledge about this Section 20 because of your development?

A. That's true.

Q. You see the data point there in the southeast quarter of Section 20? It says "Section 69"?

A. Yes.

Q. And if I go to the map you brought here this morning and I go to that same data point, it's now changed to 74.

A. I see that.

Q. Can you explain the change?

A. I cannot explain it, but Mr. Harris, I'm sure, can. Would you like to call him?

EXAMINER EZEANYIM: Where is 69 on 34? Where is 69?

THE WITNESS: We're talking about four feet of net pay represented on this particular map.

MR. FELDEWERT: So I'm looking at the southeast quarter of Section 20, Mr. Examiner, of Exhibit 34.

EXAMINER EZEANYIM: Okay. Okay.

MR. FELDEWERT: I'm comparing that data point to the --

EXAMINER EZEANYIM: Okay. 69 on Section 20. Then on page 4, it turns to what?

MR. FELDEWERT: 74.

THE WITNESS: Big change from yesterday?

Q. (BY MR. FELDEWERT) And then if I go to the data point in Section 29 -- you see you have two data points there in Section 29 on Exhibit 34?

A. I see 16 and 69, yes.

Q. And if I go to your new map presented here today, I did see a data point of 60 in that same section. You-all dropped the data point of 69?

A. Well --

Q. Is there a reason for that?

A. It might have been dropped at the same time, since it's not on the current map --

Q. Can you explain that?

A. I would explain it by the same reason that we had dropped off the 101 and returned the map to you today.

Q. That's the next point I wanted to go to. If I go to the map that you presented as Chevron Exhibit 34 back in November and I go to Section 19, and I compare it to the map you brought here this morning for the first time, which is Exhibit 16, I now see a data point of 101 in Section 19 that wasn't in your previous map,

correct?

A. That is true.

Q. If we go up into Section 18 -- and I'm looking at Exhibit 34 -- I see two data points in Section 18 in Exhibit 34 of 51 and 48 that you-all presented, correct?

A. Uh-huh.

Q. And I go to your new map today and I see what? Different numbers.

A. I see a 54 and a 48.

Q. I see a 54 --

A. And a 48.

Q. -- and a 54 and a 48 in your new map here today.

A. The same 54 and 48 that was in this map is in this map that was presented.

Q. I'm looking at Exhibit 34.

A. I see that.

Q. Do you see a 54 in Exhibit 34, in Section 18?

A. Yes. Right here (indicating). Shall I point it out for you?

Q. I'm sorry. I'm looking at Exhibit 34. There you go, right there. Look at that one.

A. Yeah.

Q. Look at Section 18.

A. Yeah.

Q. Do you see a 54 in Section 18?
A. No. I see a 51.
Q. There you go, a 51 and then a 48, correct?
A. That's correct.
Q. Now, if I go to the second map that you sent to Chevron in December -- let's go to Chevron Exhibit 35. Same methodology as far as you know, right?
A. Sure.
Q. It's only one month later, right?
A. (No response.)
Q. Is that about when you sent it?
A. Yeah.
Q. If I go to Section 20, again I see a data point there of 69 --
A. Uh-huh.
Q. -- which I don't see in your new map today. Again, it's 74 on your new map today.
A. Yes. That was in the new map of yesterday as well.
Q. Then if I go down into Section 29 on Exhibit 35, I see two data points again, 60 and 69. Do you see that in the north half of Section 29?
A. North half of 29?
Q. Yeah.
A. 60 and 69. Yes, I see those.

Q. If I go to the new map here today, in the north half of 29, and again you dropped off the 69 data point.

A. I would presume it's the same reason that we dropped off the 101 and the other data point. They are just labels.

Q. Okay. So if I go to Section 19, which is mapped a little differently than what you've got on page 4 of Exhibit 16, you don't have your 101 data point there, do you?

A. In Section 19? No.

Q. In fact, it's contoured -- Sections 20 and 19 are contoured differently in Exhibit 35 than they are in the new map you presented here this morning.

A. Yes. I can see that.

Q. Now, let's go up into Section 18. If I compare Chevron Exhibit 35 to the new map you presented here this morning, you now have -- in Exhibit 35, you now have three data points, correct? You had a 51, a 54 and a 48 in Section 18.

A. Uh-huh.

Q. I come to your map here this morning, that you gave us here this morning, and now you've once again changed the data point in Section 18, in the south half of the south half of Section 18. Do you see that?

A. 51 to 54, is that what you're referring to?

Q. Yes. So you changed the data point again, correct?

A. The data point could have been changed.

Q. Okay.

A. Again, Mr. Harris could tell you.

Q. All right. Now, which map is more accurate? Which one should we use today? Which one today do you think that the company and the Division should use in its analysis? That's my question to you.

A. I think, as most maps -- in the evolution of a map, the most current is usually the best.

Q. So is it still evolving?

A. It evolves as we drill more wells on the block, yes. But I'd like to know where we're going.

EXAMINER EZEANYIM: Let's stop right here.

Counselor, what are we trying to establish, because I'm not following you? What are we trying to establish by these data points not present here and present -- what are we trying to establish?

MR. FELDEWERT: I'm trying to establish, number one, it keeps changing. They're still trying to settle on their maps, Mr. Examiner, and I think it seems to be adjusting as we move forward with this hearing.

EXAMINER EZEANYIM: Number one. Number two?

MR. FELDEWERT: All right. Number two I want to get to in a minute.

EXAMINER EZEANYIM: What?

MR. FELDEWERT: I want to get to the second point.

EXAMINER EZEANYIM: So one of the reasons why you are asking these questions is because you think they did a point change, right?

MR. FELDEWERT: Yeah.

EXAMINER EZEANYIM: Okay. Tell me number two.

Q. (BY MR. FELDEWERT) Okay. Number two, Mr. Ritter -- let's go into the map you suggest we should now use, which is page 4 of Exhibit 16. Okay?

A. I can look at that. I'll remind you, I'm not a geologist. While I'm an engineer, I'm really wondering why you're not calling the geologist who is in charge of making these maps and asking the questions.

Q. I am examining the witness that presented this new map for the first time this morning. That was you, correct?

A. Fair enough. Go ahead.

Q. Okay. Let's go to the fourth page of Exhibit 16.

A. Sure.

Q. Now, you have proposed an east half-east half well in Section 19?

A. Yes.

Q. Correct?

A. Yes.

Q. And it's shown on here, the proposed well?

A. Yes, it is.

Q. In fact, you show all your proposed wells on this particular map, don't you?

A. Yes.

Q. I mean, this map is not representative of wells that have actually been drilled?

A. I can point out the wells that have been drilled for you, sir. It would take a minute.

Q. Are the ones that have been drilled in red boxes?

A. The ones that have been drilled are in -- have been in red boxes, and there have been additional wells drilled. If you would like to hear which ones, I will tell you.

Q. Okay. I'm just trying to figure out. The well in the east-half-east half of 19 is the one you have proposed?

A. That is true. No wells have been drilled in 19.

Q. And that's federal acreage?
A. That is federal acreage.
Q. And if I look at the east half of the southeast quarter of Section 18 -- do you see that?
A. Slow me down here. The east half --
Q. Of the southeast quarter of 18.
A. Of the southeast quarter. Okay.
Q. That, again, is federal acreage?
A. Yes.
Q. And if you so desire, you could extend that proposed well in Section 19 into that east half of the southeast quarter of Section 18, and you'd have similar sand; would you not?
A. I don't -- I don't desire to do that for a number of reasons.
Q. Okay. Based on your study, you'd have similar sands in the east half of the southeast quarter of Section 18 as you do under Section 19 under your map.
A. Say that one more time. I'm sorry.
Q. Based on your mapping, you've had similar porosity in the sands in the east half of the east half of Section 19, as you show in the east half of the southeast quarter of Section 18?
A. That's true.
MR. FELDEWERT: That was my second point,

Mr. Examiner?

EXAMINER EZEANYIM: What is the second point?

Q. (BY MR. FELDEWERT) That you could extend that east half-east half well in Section 19 into the east half of the southeast quarter of Section 18 with a mile-and-a-half lateral and have similar sands being developed on that federal acreage.

A. And have additional drilling risk and completion risk and disparate owners between the blocks.

Q. Now, I'm looking now at your Exhibit 11.

A. Which page?

Q. Go to the second page.

A. Okay.

Q. Now, this was not created to orient the wells that you have drilled in Section 20 or in Section 30, correct?

A. That is true. It was not designed -- this study was not designed just to orient those wells. We have already picked the orientation based on all of the offset EUR data and regional trends. We actually knew the regional stress direction prior to the study, so there was no reason to wait.

Q. And if you look at the second page of this exhibit, it says -- this study says: "The stress regime

is most likely strike-slip faulting," and it gives their equation. Do you see that?

A. Yes, I do.

Q. And then the third bullet point down, under the first bullet point down, says that the SHmax azimuth of that is negative 80?

A. Yes, approximately 80 degrees.

Q. This report says it's assumed, correct?

A. Yes.

Q. From regional experience in entire Lea County?

A. In the southeast Lea County area.

Q. Well, that's not what this says. This says: "The SHmax azimuth of negative 80 is assumed from regional experience in Lea County, New Mexico." Do you see that?

A. I do see that, but I also know that the person who prepared this report knew exactly what part of Lea County he was looking at when he made this statement.

Q. And that individual was the one that put this statement?

A. That's true. I have not altered any of these statements. These come directly from the third party.

Q. So this particular study doesn't focus on the geology -- what appears to be the geology in Section 18, does it? This is more of a regional report?

A. For the area, yeah, for what we call our Caster area, which includes Section 18. But this sand pile -- this entire sand pile we would consider one area, and that's the focus of this study, yes.

Q. And if I go to the wells that you reference in this particular study, and I look at your --

MR. FELDEWERT: I hope you still have this out, Mr. Examiner, the fourth page of Exhibit 16.

EXAMINER EZEANYIM: Uh-huh.

Q. (BY MR. FELDEWERT) Which wells are referenced in this study and where are they located, Mr. Ritter? Could you point those out on Exhibit 16?

A. Sure. I can do that. So the west half of the west half of Section 20.

Q. That's one of the wells?

A. That's one of the wells.

Q. And that's right in the heart of what you call your big, deep sand pile?

A. That is true.

Q. Go ahead. Where is the next one?

A. The next one is the one that's east half -- or east -- yeah, east half of the east half of Section 20.

Q. East half-east half of Section 20?

A. Yes, sir.

Q. More towards the edge of your -- what you have

mapped here as your big sand pile?

A. Yes. That's correct.

Q. Where is the next well?

A. It is the Telecaster 3H, so it is in the west half of the east half of Section 30.

Q. Section 30. So maybe half of that well includes a big sand pile, right?

A. It does.

Q. Where is your fourth well?

A. The fourth well is the Copperline 1H, which would be the east half of the west half of 29. And it's not in that area.

Q. Just off of your big sand pile?

A. Just off of it, yes.

Q. But it includes a little bit of the red and orange, doesn't it?

A. It includes a little bit.

Q. The red, the orange and then -- well, it includes whatever that color is between the yellow.

A. That's true.

Q. It's somewhere between -- what's that contour line?

A. Which one?

Q. The one at the yellow line.

A. The yellow line is -- it looks like it is

between 50 and 60. There are two shades of yellow, and my eyes aren't good enough to tell.

Q. All right. So this study doesn't involve any data from any wells in Section 19, correct?

A. That is true.

Q. And it doesn't involve any data from wells in Section 18?

A. That is true.

Q. Mr. Ritter, this study was not done to determine the natural fractures that exist in Section 18?

A. It was done to determine the natural fractures that exist in the entire area, but not 18 specifically.

Q. As a region?

A. Yeah. In this region, yes.

Q. Lea County?

A. No, not Lea County. This area here (indicating).

Q. "Regional experience in Lea County, New Mexico," right?

A. Well, if it's over here (indicating), it's still here. This is the area that the study is focused on (indicating).

Q. But it didn't focus on any -- trying to determine the natural fractures in Section 18?

A. It did not.

Q. Would you agree with me that -- now, you've seen Chevron's mapping, correct?

A. Yes.

Q. And that was based on seismic data. Do you recall that testimony?

A. Yes, I recall that.

Q. And your map is not based on seismic data?

A. No. It's based on very good well control data.

Q. Do you have any other maps?

A. This is the only one I've ever seen.

Q. Now, let me ask you this: Is the SHmax direction derived from your regional model?

A. Yes.

Q. Would that be the same as an SHmax direction that would form from an anticline?

A. No. It's the exact opposite.

Q. It would be what?

A. Exactly opposite.

Q. So you would agree with your witness, Mr. Lehman, that if the Section 18 area has an anticline, which we believe is shown by the seismic data reflected on Exhibits 11 and 12, that you wouldn't orient your well north to south; you'd go east to west, correct?

A. If I thought it was an anticline, but I don't. And I have plenty of data to support that it isn't.

Q. You don't have any seismic data to support your opinion?

A. I think your seismic data does support it. In fact, if you're so worried about it, we could get some seismologist here to look at it. We'd be happy to.

Q. You would agree that if an anticline exists in Section 18, you could drill north-south or east-west?

A. I can agree to a lot of ifs, but that is not anything to do with what we present.

Q. Do you disagree with Mr. Lehman, where he testified yesterday that if an anticline exists in Section 18, that you would drill east to west?

A. I think what Mr. --

Q. My question is: Do you agree or disagree with what --

A. If something looks like the picture that you present here (indicating) -- okay? -- the classic picture -- it has a fault with compression -- you see these here, these lines here, the compression lines (indicating)?

Q. Mr. Ritter, I'm trying to get through my question. My question is: Do you agree or disagree with Mr. Lehman's statement yesterday that if an

anticline exists in Section 18, as depicted in Chevron Number 11, that you would drill from east to west?

A. Which part of Exhibit 11? The map that you have from seismic or the cartoon that you have? I have a different answer for either one. Which one do you want me to agree to?

Q. Here is my question. Okay?

A. Okay. I'm listening.

Q. Let me get my question out. Would you agree with Mr. Lehman that if an anticline exists in Section 18, that you would drill from east to west?

A. If it existed, then I would agree with Mr. Lehman. However --

Q. That's all I'm trying to make sure, see if we can agree.

A. Okay.

Q. Would you agree that natural fractures that would exist from an anticline like Chevron suggests exists in 18 would change the permeability in the rock?

A. If they're open, they would. If they're closed, they won't. And I think I have presented some data regarding the fact that no natural fractures are open in this area.

Q. Well, the data you presented was in Sections 20 and 30?

A. That's true.
Q. Not in Section 18?
A. That's right.
Q. But you would agree with me that if natural fractures exist in Section 18 because of this anticline, that will change the permeability?
A. Only if those fractures are open in the current stress, not the stress state that generated this anticline, if that anticline ever existed, which it doesn't.
Q. Can you explain, Mr. Ritter, why the east-to-west wells to the southwest of Section 18 that Chevron studied outperformed the north-to-south wells?
A. They had a different permeability. We have some information on that area. It's actually a different geology. In fact, it's very different geology. The geology in that --
Q. Hold on.
A. No, no. You asked me.
Q. You're saying the geology down there is much different from Section 18?
A. Yes, very different. We just put a log --
Q. So would you agree that the geology changes as you move across this Delaware Basin?
A. Yes. When you move, you know, two or three

sections at a time, of course.

Q. So you would agree that as you move two or three sections, the geology changes, and, therefore, the permeability will change?

A. It could, yeah.

Q. And that would impact -- and the geology could change such that it would impact the orientation of a well?

A. If -- if there were orders of magnitude difference, it could, but what we're showing in this slide here, in Section 18, is much, much less than the big sand pile. So the chances of permeability being enhanced in a thinner sand that's falling off of the edge, the chances are that the permeability is going to be less in your Section 18, as a general consensus, than in the middle of the sand pile that is full of porosity. So your -- this geology does not match up with the other geology down here.

Q. So we're in a different region?

A. We're in a different region, that's correct, a very different region.

MR. FELDEWERT: That's all the questions I have.

EXAMINER EZEANYIM: Thank you.

Any other direct?

MR. PADILLA: Just have one, Mr. Examiner.

MR. FELDEWERT: Oh. Can I do one thing, Mr. Padilla? I'm sorry.

MR. PADILLA: Sure.

MR. FELDEWERT: Mr. Examiner, I'd like to move into evidence Chevron Exhibits 34 and 35.

EXAMINER EZEANYIM: Any objection?

MR. PADILLA: No.

EXAMINER EZEANYIM: Chevron Exhibits 34 and 35 will be admitted.

(Chevron USA, Inc. Exhibit Numbers 34 and 35 were offered and admitted into evidence.)

EXAMINER EZEANYIM: Go ahead.

REDIRECT EXAMINATION

BY MR. PADILLA:

Q. Mr. Ritter, Mr. Feldewert seems to be making a big point of this Lea County, New Mexico on your geomechanical study. Did you order a geomechanical study for all of Eddy and Lea Counties?

A. No.

Q. For what area did you order?

A. Specifically for this area (indicating), within this 20, 30, 19.

Q. And that's shown on the exhibit that --

A. Yes. That's been shown on the exhibit.

Q. All right.

EXAMINER EZEANYIM: You done, Mr. Padilla?

MR. PADILLA: That's it.

EXAMINER EZEANYIM: Okay. Very good.

Before we have the landman, because I've forgotten the crux of the matter, I need to recall the witnesses, if you don't mind. I hope all the witnesses are here that I want to recall.

RECROSS EXAMINATION

BY EXAMINER EZEANYIM:

Q. Mr. Ritter, before you step down, let me ask you these questions again, because that's why I want to recall these -- I asked you these questions. I've asked you all the questions, but one thing I want to rephrase, from models -- and I'm directed to Section 18. You've done all the studies allowing this, and you agree that if the permeability in Section 18 is determined to be set below .05, then we have to agree north-south. But above .05 or .5, it doesn't really matter where you go, east-west or north-south, right?

A. Yes.

Q. What is your cutoff permeability, before I recall people I want to recall?

A. If I can just reference this (indicating) for

my memory.

Q. Yes. Because I want to --

A. I know exactly -- I know exactly what your question is.

Q. Yes.

A. Okay. So you're asking if it's above -- if it's .5 or above --

Q. .5. If you look at that exhibit -- assuming that's -- okay. .5. So you can see that it is above .5, 1 millidarcy or something.

A. Yeah. At this .5 and above, then I would agree with you, that it wouldn't make much difference. Yeah. It wouldn't make much difference. Well, it would make -- actually, there is still -- so there would be this -- it would be about 2 to 3 percent of OOIP, which would be 10,000 barrels.

Q. What if -- what if you just say 1 millidarcy? Is that okay? That would be -- if you plug that graph to make a difference.

A. You're correct. It wouldn't.

Q. It wouldn't?

A. No, no. If it was if it was greater than. If it was 1 millidarcy, it would probably be relatively the same.

Q. I just wanted to make sure I established that,

you know, before --

A. Right. But what you are talking about is orders of magnitude in this rock 10 to 20 times what we have incorporated in the area. I just wanted to reference that, too.

Q. Let's just take a benchmark of gradient .5. Those can be very, very hard to measure. But let's take .5 -- above .5. It doesn't make too much difference?

A. Above that, it would make less difference, yes.

Q. Very good.

Having established that, let me see if I can --

A. Sure.

Q. So in that case -- so in that case -- I don't want to go into JOA here. In that case, let's say we just go out there and measure permeability at 1 millidarcy and .5 millidarcy, and you guys get together and say it's that. You don't mind participating in the east-west, but below that, you wouldn't like it because of what your study says; is that correct?

A. That's correct, but the only way to do that would be to actually drill the well and log and core it.

Q. I understand.

A. Correct?

Q. Okay. Very good.

A. Okay?

And one other point, the rock that is to the south would be closer to the type of sand that we would see to the north from a thinning-off of the structure. So we would expect it to be similar to the core data we have in Section 21. We would consider that.

Q. Very good. Very good.

EXAMINER EZEANYIM: Then that puts us where I want to -- I don't want to neglect your land person. We have the opportunity for that person to come here, but I would like to recall Chevron's geologist and recall Endurance's geologist. What I want to hash out here now, from your discussion, is to determine, in Section 18, do we have anticline, syncline or a mass of sand? So I need to hear more testimony on that, because I think the whole thing hinges on those two parameters --

THE WITNESS: You're correct.

EXAMINER EZEANYIM: -- whether there is an anticline or not, or whether, in Section 18, can we get anything above .5 millidarcy, because I'm just working with you guys to see where is better. And then where is better, we go, and then all of you will like it. I

don't think you want to produce more hydrocarbons. Some of you would say no. So we are going to do that.

But because of that, I want to, if you don't mind, recall Chevron's geologist to prove to the Division that we have anticline there and then have Endurance's geologist to argue against that. Then I take it into consideration. You see where I'm going? Is that okay?

MR. FELDEWERT: Mr. Examiner, it's your hearing, yes.

EXAMINER EZEANYIM: So. Mr. Ritter, I think you have done very well. You can step down now.

THE WITNESS: Thank you.

EXAMINER EZEANYIM: Thank you.

So at this point, Mr. Padilla, we're going to recall Chevron's geologist.

MR. PADILLA: That's fine.

EXAMINER EZEANYIM: And you are going to -- whatever you need to convince, you know, the OCD that we have an anticline in that Section 18.

So who is the geologist? Mr. Schwartz?

Okay. At this point, we recall Mr. Schwartz of Chevron to the witness stand. All I want to hear is to get the information on that Section 18, what type of geology is in Section 18.

KEN SCHWARTZ,

after having been previously sworn under oath, was recalled, questioned and testified as follows:

EXAMINER EZEANYIM: Mr. Schwartz has been sworn, and you are still under oath.

Counsel, let's go back to Section 18, that exhibit, for Chevron to establish that Section 18 has anticline.

DIRECT EXAMINATION

BY MR. FELDEWERT:

Q. Mr. Schwartz, let me ask you, your result that resulted in the identification of an anticline in Section 18, was that based on seismic data?

A. Yes.

Q. Did it require any extrapolation from well data?

A. No.

Q. Is there any well data to the east of the section -- well, let me --

EXAMINER EZEANYIM: What exhibit do I need to get?

MR. FELDEWERT: Let's look at -- what are you comfortable with?

EXAMINER EZEANYIM: I'm comfortable with

anything you want to use. I don't know which one you want to use to convince me that --

MR. FELDEWERT: All right. Well, let's then look at the map where they had to use extrapolations of well data to come up with their information. Let's look at the map they came here with this morning.

EXAMINER EZEANYIM: I want you to use your own exhibits.

MR. FELDEWERT: Exhibit 16, page 4.

EXAMINER EZEANYIM: From your pack?

MR. FELDEWERT: No. It's Endurance Exhibit 16, page 4.

EXAMINER EZEANYIM: Is that your work?

MR. FELDEWERT: No.

EXAMINER EZEANYIM: I want your work.

MR. FELDEWERT: Mr. Examiner, we didn't use well data. They didn't extrapolate well data for this anticline.

Q. (BY MR. FELDEWERT) But let's go to Exhibit 16, what you used for your isopach map, Chevron Exhibit 16.

EXAMINER EZEANYIM: Here (indicating)?

MR. FELDEWERT: Yes.

MR. PADILLA: May I borrow your Exhibit 16?

(The court reporter complies.)

Q. (BY MR. FELDEWERT) Now, first off, Mr. Schwartz, you said you used seismic data, correct?

A. Yes.

Q. What is the benefit of using seismic data to determine whether there is an anticline in the area of Section 18?

A. So by using seismic data, it better defines the structures. You have no missing data. Like in the case when you're using well data, they're just points, so you extrapolate between the well data. The seismic is a real -- more accurate field of the subsurface, so you have no holes in your data.

Q. If we then go to Chevron Exhibit 16, does that give you an idea of the well data that is available around Section 18?

A. Yes, it does.

Q. Is there any well data available to the north of Section 18 and Section 7?

A. No.

Q. What about to the northwest in Section 12?

A. No.

Q. What about to the west of Section 13?

A. No.

Q. What about to the southwest in Section 23?

A. No.

Q. Is that why you chose to use seismic to do your mapping?

A. Yes.

Q. And what did your seismic show? Where would we go to?

A. So if you switch back to Exhibit 11, from the seismic data, it demonstrates an anticline that formed. The fold axis runs, basically, north-south through Section 18. So, again, an antiform, or anticline, is represented here. You can see how the structural high is at the center of Section 18, and you have opposing dips going west and east in the -- in the sand -- or the top of 2nd Bone Spring is dipping in opposite directions from Section 18. This forms an anticline.

EXAMINER EZEANYIM: Okay. You said Exhibit 11, right? Microseismic or seismic?

THE WITNESS: Seismic.

EXAMINER EZEANYIM: Is this bid [sic] on time or on --

THE WITNESS: This is in time, and it was tied to wells. The wells -- so it was tied to wells, so it's on dip. It's tied to those wells. The time is tied to the wells.

EXAMINER EZEANYIM: Okay. So you are saying both on time and depth? What are you saying?

THE WITNESS: So this size and volume is in time, what we commonly tie the seismic to well data to make sure the formations -- we know exactly where the formations are in the seismic.

EXAMINER EZEANYIM: But the seismic is on time?

THE WITNESS: Yes.

EXAMINER EZEANYIM: Go ahead.

Q. (BY MR. FELDEWERT) And so you had this -- reading from your seismic in Exhibit Number 11, did you also do another analysis of the seismic data to confirm what you saw on Exhibit 11?

A. Yes. So a seismic -- you know, there are a lot of work flows that you can do, including -- one is curvature analysis, and that is represented in Exhibit 12, the next page.

CROSS-EXAMINATION

BY EXAMINER EZEANYIM:

Q. Before you go to that next page, I see those two arrows. What is that indicating? You told me seismic is on time. What is your two arrows indicating there?

A. So that's a common symbol geologists use to show the opposing dips of the anticline. So the dips are going in the opposite direction. It just shows the

dip of the rock.

Q. Okay. You've got that, and then you've got that. The seismic is on time. And then we go to where?

A. So if you go to the next page, Exhibit 12, this just confirms, from our curvature analysis, that there are lineaments from the 2nd Bone Spring seismic data which confirms that the natural fracture system would be paralleling; the fold access would be north-south.

Q. You know, I see the outline in yellow.

A. Yeah. That is Section 18.

Q. Okay. Section 18. Then explain what is happening in that Section 18.

A. You can see there's red and purple coloring, and you can see how these colors are lining up. There are linear features that run north-south through Section 18.

Q. That red and purple color is -- okay. What is that blue? What is that color?

A. So there is purple and red, purple and red. There is kind of a banding.

Q. Showing what?

A. So this shows -- it's a curvature analysis, changes in dip in the seismic suggesting lineaments in the 2nd Bone Spring. These lineaments suggest that there are natural fractures that are also trending

north-south through Section 18.

Q. Now, in the blue -- the color in blue, what does that say? As you go to the west side, there is a bunch of blue there. On the east side, I can see yellow.

A. So basically the color change is a change in dip, just slight changes in the dip in the seismic. So red is a bigger change in dip. Purple is less change. But what's important to get from this is how they line up. They're parallel features. They trend north-south.

Q. So you're saying that the fracture is north-south?

A. Yeah. So when the anticline formed, you're going to get -- like the cartoon I show on the previous page, when it formed, if you use fractures that form on the crest -- and this data suggests -- it confirms that.

Q. This is interesting.

EXAMINER EZEANYIM: Okay. Well, go ahead.

CONTINUED DIRECT EXAMINATION

BY MR. FELDEWERT:

Q. Mr. Schwartz, were you here when Mr. Harris testified?

A. Yes.

Q. He seemed to draw some -- have some criticism with your conclusion?

A. Yes.

Q. Do you recall -- do you recall what exhibit he was referencing?

A. I think he was looking at the seismic cross section or the map. I'm not sure.

Q. And what was his criticism, and what is your response?

A. I believe he referenced this structure as a drape feature, and anticline -- a drape feature can also form an anticline. So if he's saying it's a drape feature, it doesn't change the fact that it is an anticline.

Q. Anything else?

A. No.

EXAMINER EZEANYIM: I have something else.

RECROSS EXAMINATION

BY EXAMINER EZEANYIM:

Q. He said something about anticline. What did you just say about anticline right now, because I was thinking? What did you say?

A. Yes, sir. Randall Harris, in his testimony, said that this was a drape feature, but I'm saying a drape -- an anticline can also be a drape feature. Just because it's a drape feature does not change the fact that it is --

Q. Anticline?
A. -- yeah, anticline.
EXAMINER EZEANYIM: Okay. Go ahead. I don't want to jump the gun.
MR. FELDEWERT: Now I am going to go to an Endurance exhibit, if that's okay.
EXAMINER EZEANYIM: Are you done with that one?
MR. FELDEWERT: I want you to leave that open. Actually, go back to Exhibit Number 11, Mr. Examiner.
EXAMINER EZEANYIM: Out of?
MR. FELDEWERT: Chevron.
CONTINUED DIRECT EXAMINATION
BY MR. FELDEWERT:
Q. I want you, Mr. Schwartz, to go to Endurance Exhibit Number 5.
EXAMINER EZEANYIM: And you're saying Exhibit Number 5?
MR. FELDEWERT: Yes, the structure map, Mr. Examiner.
Q. (BY MR. FELDEWERT) Okay. You've got this, correct?
A. Yes.
Q. And to orient ourselves, Section 18 is more to

the north. Do you see that?

A. Yes. Yes, I do.

Q. And this was developed by Endurance, as you understand it, using well control?

A. Yes.

Q. And, again, it shows that they don't have any well control to the north-northwest, west or southwest, correct?

A. Yes.

Q. Does this structure map they put together likewise indicate a crest running through Section 18?

A. Yes.

Q. And if you compare that to the anticline that you depict on Chevron Exhibit Number 11, does it tend to follow the crest that you show on Exhibit Number 11?

A. Yes. The crest that Endurance mapped is -- their crest of their anticline that they mapped in Section 18 is very similar to the crest I mapped using seismic in Section 18.

Q. Is there anything else that informs the Examiner that it would appear that an anticline exists in and through Section 18?

A. Say that again.

Q. Is there anything else that the Examiner should be aware of that indicates that an anticline exists in

Section 18?

A. No.

EXAMINER EZEANYIM: There is no anticline in Section 18?

THE WITNESS: There is no additional information.

Q. (BY MR. FELDEWERT) Is there anything else that would assist the Examiner in determining that an anticline exists in Section 18?

A. No.

EXAMINER EZEANYIM: Using this, right? Using this map?

MR. FELDEWERT: Let me step back, Mr. Examiner.

EXAMINER EZEANYIM: Yeah. I want to understand what you're asking.

Q. (BY MR. FELDEWERT) Mr. Schwartz, we've looked at Chevron Exhibit Number 11?

A. Yes.

Q. And you've explained how that was developed using seismic data?

A. Yes.

Q. And you've explained that seismic data is nice because it doesn't have any holes, correct?

A. Right.

Q. Gives you a better picture?
A. Yes.
Q. Gives you continuous coverage?
A. Yes.
Q. And then we went through Exhibit Number 12, which indicates that another way that you can use that seismic data to demonstrate there is an anticline in Section 18?
A. Exhibit 12 just demonstrates how -- there are lineaments through Section 18 which would parallel -- that would suggest that natural fractures would parallel those lineaments caused by an anticline.
Q. They're consistent with the fold and the fracturing that you would see?
A. Yes.
Q. And then we looked at Endurance Exhibit Number 5, and the crest that they map with their well control data seems to match the crest that you mapped with your seismic data?
A. Yes. We are in agreement.
Q. Anything else the Examiner should be aware of?
A. No.
MR. FELDEWERT: That's all the questions I have, Mr. Ezeanyim.
EXAMINER EZEANYIM: Okay. Go ahead.

MR. PADILLA: Are you referring to me to go ahead?

EXAMINER EZEANYIM: Are you done?

MR. FELDEWERT: Yes. I said that's all the questions I have of this witness.

EXAMINER EZEANYIM: Okay.

RECROSS EXAMINATION

BY EXAMINER EZEANYIM:

Q. So you are telling your testimony, Mr. Schwartz, that Section 18 has an anticline, on 11 and 12, right? That's your seismic?

A. Yes.

Q. You know, for administrative geology, I know this is a -- this is a structure map -- simple structure map. You know, we can -- you know, we know how we do it. We can distinguish -- we can use this structure map. I don't know whether Endurance will do it.

But I want to ask you: You did this, and you are telling me that an anticline is there. But you could use this structure -- once you get a structure map, you can get the net, and you can then decide, you know -- draw to see whether you are getting an anticline or a syncline or nothing. Of course, that's your structure here. You are going to have either a syncline or a -- if I remember. I did geology in the '70s. I

can still remember that you can use -- no, no. I can still remember. It's an elective, right (laughter)?

(Laughter.)

EXAMINER EZEANYIM: I can remember that you could either decide whether, if you have your structure map, that is a syncline or an anticline. And here we are fighting about whether it's anticline. I can even go back and do this myself. Okay. Regardless of that -- but, you know, I'm here to let you know I'm not a geologist, but I have an idea, you know. I'm sorry. But I think I know what's going on here.

Q. (BY EXAMINER EZEANYIM) So you are done with -- and then you are convinced that Section 18 is an anticline?

A. Yes.

EXAMINER EZEANYIM: Do you have any questions for him?

MR. PADILLA: Yes, I do.

CROSS-EXAMINATION

BY MR. PADILLA:

Q. Mr. Schwartz, are you a geophysicist?

A. I am a geologist by education. I've worked many years using seismic data.

Q. But you're not a geophysicist?

A. No.

Q. Who conducted the seismic study?
A. A geophysicist.
Q. And you don't have that geophysicist here today?
A. No.
Q. Is it possible that -- and I understand where your testimony is coming from, but is it possible that Mr. Harris is correct when he says that this is a draped sand deposition?
A. I'd have to investigate it more as a geologist. I'd have to look into it. I'm not sure.
Q. But it's possible, isn't it?
A. Can you explain a drape?
Q. Well, that's what he described, a draped sand deposition.
A. I need more definition of a drape, how you define what a drape is.
Q. Well, we're going to recall him.
A. Then you should ask him.
Q. But have you ever heard of a draped sand deposition versus an anticline?
A. Drape deposition -- it's a depositional process, and anticline is a structural process.
Q. So there could be a difference of opinion as to what you have in terms of when you say a crest of this

sort, and it could be an anticline or it could be a draped sand deposition, correct?

A. Yes.

Q. It's going to be a matter of difference of opinion as to what geologists -- how you're going to interpret the data, right?

A. Yes.

Q. And as I understand your testimony, you didn't tie your mapping to any well control; is that right?

A. No. I did tie seismic to wells.

Q. How many wells?

A. Three or four.

Q. But you seem to confine yourself to Section 18. Does your anticline end at the leaselines?

A. No.

Q. How do you explain the production and the success that Endurance has encountered in Section 30?

A. In Section 30?

Q. Yes.

A. I haven't looked at their completion. I haven't looked at the reservoir. I can't really comment on that unless I have the data to look at it.

Q. When did you study this area? After Endurance's proposal to you or before?

A. I testified yesterday that after our November

meeting, I went back -- they presented some data, so we went back and looked at it in more detail. And that's when this study was done.

Q. Did you ever get back to them and say, We're looking at it this way?

A. I testified yesterday that at that point we had a very uncomfortable relationship, and, like I said, every time I presented -- if I spoke with them, they were using it against us, that we're in a bidding war for the leases that were open there. So at that point, our relationship was uncomfortable. So, unfortunately, the relationship -- that's where the relationship was, so I did not present this data.

Q. After January, when they won the bidding war, did you go back to them, prior to this hearing, and say, Hey, we're looking at it differently?

A. At that point in time, the protests had been filed, so that's where we were going to go. And I told them that we would present the data at the hearing, and this is where it is.

Q. So you didn't get back to them with your new data, right?

A. No.

Q. Did you tell them you were going to conduct seismic studies?

A. I don't know.

Q. Let me ask you a hypothetical. Would you agree that if the Endurance geology is correct, that a north-south orientation would recover more oil?

A. For where?

Q. For the north -- well, anywhere in Section 18.

MR. FELDEWERT: Let me object. When you say "the Endurance geology," what are you referring to? Is that an exhibit?

EXAMINER EZEANYIM: Is that an objection?

MR. FELDEWERT: Yes.

EXAMINER EZEANYIM: Can you rephrase your question?

Q. (BY MR. PADILLA) Well, you've heard the difference in geologic presentations here, and you've heard the stress-orientation testimony of Mr. Lehman and of Mr. Ritter. And you've also listened to the testimony of Mr. Harris indicating that this is not an anticline. And I'm asking you if that data is correct, would you agree with me that a north-south orientation would be -- would recover more oil?

A. No. And I can explain.

Q. So you're not willing to make that assumption? I'm just asking you a hypothetical, if. And you're not willing to go that far?

A. If I look at their structure map, their land plan goes over Section 18. Again, that's --

Q. I'm not asking you if there is an anticline there. I'm telling you that Mr. Harris' testimony is that that is not an anticline.

And my question to you is: If that is not an anticline, would you agree that a north-south-oriented well would better drain with the reservoir in Section 18?

A. It's a hypothetical question.

Q. I understand.

A. If it's not an anticline --

Q. Mr. Feldewert asked a number of hypotheticals to Mr. Ritter, so I'm asking you a hypothetical.

EXAMINER EZEANYIM: It's hypothetical, Mr. Schwartz. Answer that question. It's hypothetical. I want you to answer that hypothetical. Hypothetical is not real. It's just "if," right?

THE WITNESS: Yes.

EXAMINER EZEANYIM: Answer the question.

THE WITNESS: So disregarding --

EXAMINER EZEANYIM: Disregarding whatever it is.

THE WITNESS: All right. Yes.

EXAMINER EZEANYIM: So we can move on.

Q. (BY MR. PADILLA) Yes or no?
A. Yes.
EXAMINER EZEANYIM: He said yes.
MR. PADILLA: Okay.
Q. (BY MR. PADILLA) Your entire case is based on your anticline theory; is that right?
A. No.
Q. What else is it based on?
A. The last couple days, we've looked at a lot of data. The EUR has proven that east-west wells can produce better than north-south. That's another evidence.
Q. Have you been involved in the drilling of all the Chevron wells in this area of Lea County?
A. Yes.
Q. And how many have you oriented east-west?
A. The Bell Lake well in Section 18.
Q. How many have you actually drilled north -- east-west?
A. Well, we initiated the drilling of the Bell Lake well.
Q. Oh, okay. You spudded that one down 5,000?
A. Yes, we spudded that well.
Q. You haven't completed it?
A. Well, it's approved permit to drill east-west,

and we've spudded that well.

Q. So are you telling us also that the stress regime presented by Mr. Lehman and by Mr. Ritter is totally unimportant in this case?

A. Because we're on an anticline, it changes how we drill the well. The stress regime is less important, and I believe Mr. Ritter also testified to that. Because it's on a anticline, the stress regime --

Q. He testified -- he agreed based on a hypothetical, right?

A. I wouldn't say it's hypothetical.

MR. FELDEWERT: Object to the form of the question. We presented our data.

Q. (BY MR. PADILLA) He agreed based on a hypothetical question posed by Mr. Feldewert; isn't that correct?

MR. FELDEWERT: Object to the form of the question.

EXAMINER EZEANYIM: Okay.

MR. PADILLA: I don't want to argue with Mr. Schwartz. Obviously, he doesn't want to answer the question.

MR. FELDEWERT: No, that's not true. I think the question is not properly phrased. He testified based on our analysis that's set forth in

Exhibit 11 and Exhibit 12.

MR. PADILLA: My question was whether or not he's ignoring the testimony and the presentations of Mr. Ritter and Mr. Lehman with regard to stress orientation.

MR. FELDEWERT: I think he answered that question.

MR. PADILLA: And as I understand it, he's saying that's not important.

EXAMINER EZEANYIM: The witness is not supposed to answer that question. We are going to hear from Mr. Harris. So I'm not saying that I'm sustaining the objection, but if you want to rephrase your question. I'm trying as much as I can to make sure I'm impartial, right? So rephrase your question, please.

Q. (BY MR. PADILLA) Let me just ask this: You agree that there could be more than one interpretation of the geology in this area; is that right?

A. Yes.

EXAMINER EZEANYIM: Could be, unfortunately.

Are you done?

Q. (BY MR. PADILLA) Mr. Schwartz, was your seismic calibrated with actual log penetrations, and, if so, which wells did you calibrate it with?

A. I don't have that information in front of me. Sorry.

Q. You don't know, or you don't know if you've got the information?

A. I know. I can't recall each well name.

MR. FELDEWERT: Okay. So let's -- hold on. Maybe split the question up. I think it's a compound question. Ask the first part, and then you can ask the second part.

Q. (BY MR. PADILLA) You said you calibrated with actual well log penetrations?

A. Yes.

Q. What well logs did you use?

A. Used sonic, gamma ray, your standard quad combo.

Q. Which wells did you use?

A. Unfortunately, I don't have that information in front of me.

Q. You can't tell the Examiner where those wells were located?

A. There were a number of wells, like I mentioned, several wells. I can't tell you exactly where every single well is.

Q. Are they around Section 18?

A. Yes. There is a sonic log on Section 18 that

we utilized.

Q. From what well?

A. I can't recall which well it was.

Q. What other wells around there did you use?

A. Well, there are three -- there are three or four wells -- three wells on Section 18. Again, we used a nice distribution, where we have sonics, calibrate the seismic, two wells that have sonics, et cetera, you know. We utilized all the data that we could in that seismic. Sorry I can't name each well.

Q. Well, I want to know how far away the wells are. Can you give us an idea of where in the world these wells are?

A. Well, there is one on Section 18, and I can't recall the other ones we used.

Q. Where are the data points on your maps from these wells?

A. There are no data points on my map from these wells.

Q. Well, wouldn't it be fair that if you're testifying that you tied to the actual well logs, that there is something to show where those data points are?

A. Maybe, yes.

Q. That would give us a better picture, wouldn't it?

A. Not necessarily. The picture is right there (indicating). The wells are tied to the seismic. That's the picture. Are you saying that we didn't do it accurately?

Q. I don't know. You can't tell me which wells you used.

MR. PADILLA: That's all I have.

EXAMINER EZEANYIM: Thank you.

Mr. Feldewert?

REDIRECT EXAMINATION

BY MR. FELDEWERT:

Q. Mr. Schwartz, is it important, when you're depicting, for example, on Exhibit 11, that you have to identify on there the wells that you calibrated?

A. No.

Q. Does that affect the result?

A. No.

MR. FELDEWERT: That's all the questions I have.

CROSS-EXAMINATION

BY EXAMINER EZEANYIM:

Q. I recalled you, Mr. Schwartz, but I don't want to ask you a lot more questions. What I would ask you -- I know this is important. I want you to give me your best estimate of the permeability in and around

Section 18 in this general area. I know you haven't measured what you think would be -- having walked in that area, what would be your best estimate of permeability in that area?

A. So we have heard some numbers. So if you're just looking at the sand, .05, but in Section 18, there is going to be some enhancement of the permeability because of the natural fractures.

Q. So you're saying it's going to be more than 05?

A. Yeah. It would be greatly more.

Q. So greatly more than 05 in Section 18. Okay. Very good.

The well -- first of all, let me ask you something. I just put it down now, where you got -- you have data points, where you got for your assessment for the calibration. You mentioned -- you said something about three wells in Section 18. I thought there are no wells in Section 18 except the one you just drilled?

A. There are some previous vertical wells.

Q. They are not -- okay.

So what is the status of those three wells in Section 18 that are vertical wells?

A. I think they're plugged and abandoned.

Q. Are the wells productive?

A. They were deeper gas wells.

Q. Oh. So they are not really -- they have no play in the Bone Spring?

A. No.

Q. And that's why we neglected them?

A. Right.

Q. Because, you know, if you go -- I'm not interested in deeper formations.

A. Right.

Q. So there are three wells, but they're vertical, in Section 18. So we can't really use it. You can't compare apples and oranges. Okay. But there are three wells, but they are all vertical, right?

Okay. So the only well now in the formation of interest is the well you have spudded and, you know, and then cemented at 5,000. That's the only well --

A. Yes.

Q. How did that well begin, you know? Did you get a voluntary agreement from the working interests? How did you, you know -- before you spudded that well, you know, because it's -- first of all, it's a one-mile acre unit. If you have voluntary agreement, all you have to do is submit a Form C-102 to the district. Is that what happened, for you to spud that well, or did you -- how did you -- what were the circumstances of that well when

you spudded that well?

A. So we had a drilling permit. We had a slot open in our drill line.

Q. You had what?

A. We had an opening in our drill queue. We had an expiring lease in June of 2014, and so we commenced drilling of that well to save that lease.

Q. Okay. But all interests didn't voluntarily join in drilling the well?

A. No.

Q. Was your Form C-102 approved to drill the well, because it should have been approved by the district?

A. I'm not sure.

Q. Was that approved?

A. I'm not sure.

MR. FELDEWERT: Mr. Examiner, if you go to Chevron Exhibit Number 2, you'll see that that APD was approved. I'm sorry. Chevron Exhibit Number 1. I apologize.

EXAMINER EZEANYIM: Well, you know what it says here? "Conditions of Approval Attached." Where are those? I circled it. It's approved, but it says "Conditions of Approval." What are those conditions? They're not here.

MR. FELDEWERT: Well, I think if you -- if

you look on the third page, perhaps, and the fourth page, and -- this is the permit.

EXAMINER EZEANYIM: I can see a Form C-102 here.

MR. FELDEWERT: I'm looking at the third page. I'm looking at the fourth page, "Permit Conditions of Approval."

EXAMINER EZEANYIM: Fourth page?

MR. FELDEWERT: Fourth page of Exhibit Number 1.

EXAMINER EZEANYIM: What does it say?

MR. FELDEWERT: The title on the fourth page of Exhibit Number 1 is "Permit Conditions of Approval."

EXAMINER EZEANYIM: "Permit Conditions of Approval." Okay.

When this Form C-102 was submitted, was it indicated to Mr. Kautz that an agreement had been reached, agreement of that well? Because as a project are of 160, an agreement has to be reached, and that was agreed. Then you send your Form C-102 to the district, and they approve it. But there is nothing about compulsory pool. So this is mainly because the lease is expiring. That's why the well was spudded.

MR. FELDEWERT: I think the testimony has

been, number one, yes, that was the reason. Number two, up to that point, there had been no competing well proposals submitted to the working interest owners. Number three, they had their meeting in November, and, as is apparent here today, Endurance was entrenched in the north-south well, and Chevron's geology indicates east to west.

And number four -- and I don't want to get into too much legal. Number four is that what they did is consistent with the Horizontal Well Rules. What they did here is drill the vertical portion. There is nothing wrong with that. Once they got the competing well proposal, they then pulled out and waited for this hearing. But if they wanted to, Mr. Examiner, under the Horizontal Well Rules, they could have gone ahead and drilled the vertical -- vertically the horizontal portion of that well. They just couldn't complete it and produce the product until they had a pooling order. But Chevron didn't do that. They stopped.

EXAMINER EZEANYIM: But under the rules, too, you have to have a voluntary agreement to drill the one-mile well. If you have a voluntary agreement --

MR. FELDEWERT: You can, under the rules, apply for a permit, and you can drill the well. You can't complete it, but you can apply and drill the well.

EXAMINER EZEANYIM: That much I understand.

MR. FELDEWERT: Under the Horizontal Well Rules, you can't complete it until you have a pooling order.

EXAMINER EZEANYIM: Okay. So is Chevron in agreement that they can -- and, of course, you can do that, get the compulsory pooling. Because you understand that not everybody will participate in the well?

MR. FELDEWERT: Correct.

And once they got the competing well proposal, that's when they stopped.

EXAMINER EZEANYIM: No, I understand what you're saying. Now I have a clear view of what it is.

It's about 12:15. I'm sorry we didn't finish by 12:00.

Let me see. I don't want to bother you again. So I think that's all I have for now. Thank you.

So I think what we're going to do -- unfortunately, we have one more witness, the geologist, and then we have two more witnesses. We're going to come back at 1:20.

(Break taken, 12:23 p.m. to 1:25 p.m.)

EXAMINER EZEANYIM: We'll go back on the

record and continue with this case. Hopefully we'll finish with it today. TGIF (laughter).

Where did we leave off? We finished with Mr. Schwartz. We're going to call Mr. Harris.

MR. PADILLA: We're going to call Mr. Harris.

EXAMINER EZEANYIM: Call Mr. Harris to the stand.

Mr. Harris, you were sworn yesterday. You are still under oath.

THE WITNESS: Yes, sir.

EXAMINER EZEANYIM: And let me make a comment. You know why you are here now? We are trying to see what happened with Section 18. That's why you were recalled.

So go ahead, Mr. Padilla.

RANDALL HARRIS,

after having been previously sworn under oath, was recalled, questioned and testified as follows:

DIRECT EXAMINATION

BY MR. PADILLA:

Q. Mr. Harris, would you go to our Exhibit Number 5?

EXAMINER EZEANYIM: Exhibit Number 5?

MR. PADILLA: Yes, the structure map.

Q. (BY MR. PADILLA) Mr. Harris, the discussion here has been, according to Mr. Schwartz, that this is an anticline instead of a geologic deposition, and you called it a drape.

A. Yeah. Drape is kind of a broad term, but, yes, it's draping over a deeper feature.

An anticline -- when we traditionally think of an anticline, we think of a fold with some compressional forces on the sides, which would give way to the fracturing of a part of it.

What I have mapped this -- and much more extensively than just this small six or seven miles. As we see --

Q. Let me ask you: How far does this feature extend north and south?

A. This feature is intermittent but fairly constant through about a 24-mile area, north-south.

Q. How long have you been working within this area?

A. I think my first well was the Paloma Federal 30 #1 in the Delaware, and I drilled that in 1990- -- in the '90s.

Q. Do you have existing maps that show the regional extent of this feature?

A. Yes, I do.

Q. And why did you choose to bring just this version or this portion of the feature?

A. Well, the main reason is because it's concentrated just around the acreage that we have an interest in, and the geologist doesn't give away the farm by bringing in a whole lot of other data.

Q. And can you explain in more detail what you mean by this draping feature?

A. Yes. Rather than being an actual anticline, on the eastward side, we're seeing basically regional dip.

Q. What do you mean by regional dip?

A. Yeah. It flattens out. It's just normal depositional environment. It's -- just the reason it's down dip going to the east in a generally-speaking area, because there are some little highs and little lows, as you find in all depositional environments. But generally speaking, it's down dip to the east.

As we come to the west, all of a sudden we have a big pile and then basically a straight-down structure, and that's due to a deep-seated fault. So we're not seeing an anticlinal deposition environment. We're seeing a normal deposition environment and then going over the top of a ridge, as a downside leg.

Q. If you saw an anticline in this area here, what would it look like?

A. Well, you would see two pretty well-uniform legs fold with a crest.

Q. So you'd see the same thing on the right side of this so-called crest as you see on the other side?

A. Oh, yes. It would look something very similar to this. But as you can see, it's much steeper on the west side here than on the east side.

Q. Now, yesterday you talked about a Devonian fault. How does that affect this structure?

A. Well, the Devonian fault has affected all the structures, anything from above the Devonian. There's been no faulting or evidence of faulting since that period of time that I'm aware of. So subsequent layers from the Atoka, The Morrow, the Strawn, the Wolfcamp continue to build, and each subsequent layering, we still have this downthrown side of the block that continues to valley-fill.

Q. Now, Endurance has drilled wells south of Section 18 in the same feature; is that right?

A. Yes.

Q. And what would happen if you actually had an anticline or encountered an anticline in drilling the well south of Section 18?

A. Well, if we just look at the structure map and if they're limiting the anticline to the north half of

Section 18, to me it makes no sense, because the same nose, the same structure, goes from 18 through 19 through 30, down to 31. I mean, it would all be anticlinal. If one part of it was, all of it would be.

And in that case, we drilled right on the apex of the nose of the structure with our Telecaster #3. And when we fracked it, we didn't see any lateral fractures. It was a normal frack-type pattern. It made a good well. So all the evidence given to stress patterns, directions of drilling held up with my interpretation, not with it being a 90-degree interpretation.

Q. Which means what? That there is no anticline?

A. In my opinion, there would be no anticline. There would be no stress of fractures in the top part of this. It's not a structure -- I mean, it is a structural feature just because it's a nose and it's a deposition environment.

Q. Have you ever dealt with an anticline in the 2nd Bone Spring or any version of the Bone Spring?

A. No, I have not.

Q. Have you dealt with anticlines anywhere in southeast New Mexico?

A. No, not in the formations I have worked.

Q. And we have a real conflict here. How certain

are you that this is not an anticline of any sort?

A. I'm very positive.

Q. And that's based on your experience and your knowledge of this area?

A. Yes.

Q. So let's talk about this draping effect in the section south of Section 18. You don't have any wells north, but you certainly have wells south, correct?

A. Yes, we do.

Q. Geologically -- and I think you've already explained somewhat that you didn't encounter any north-south fractures.

A. That's correct.

The wells frack -- the Telecasters in Section 30 frack virtually identical to the wells in 20, our Stratocasters.

Q. So what would happen if you did have fractures, as Mr. Schwartz testifies?

A. Well, if we do or if we did --

Q. Let me ask this: What would you have experienced in those wells you drilled south of Section 18?

A. I would have expected that we would have had a lateral fracture pattern on completion.

Q. And what would have been the result?

A. We would have had much poorer wells than what we're currently exhibiting on our production.

Q. Are the wells that you're drilling, the Stratocaster wells, are they extraordinarily good wells?

A. I think the Stratocaster and Telecaster are good wells, yes.

Q. Is there a fold in Section 18 in the geology?

A. A fold?

Q. A fold. Does the formation come back around where you see it twice?

A. No. No, not at all.

Q. So, again, what are the deeper features here that are shown in the seismic information shown by Mr. Schwartz?

A. Well, I'm not a seismologist or a geophysicist, but from the limited knowledge that I do have, because we've all looked at them -- just like Mr. Schwartz, we've all looked at seismic throughout our careers. I just simply see, basically, a draping coming off the west side into a normal pattern on the east side. I don't see any folding, even in his cross section on the -- that shows a fold, that shows any kind of anticline.

Q. Now, Mr. Feldewert questioned Mr. Ritter this morning on the changes on your mapping, especially on

Exhibit 6. We introduced a new revised map this morning. Can you turn to Exhibit number -- I believe it's Number 16.

EXAMINER EZEANYIM: Whose exhibit? Yours?

MR. PADILLA: Yes. Endurance Exhibit 16.

May I approach the witness, make sure we're talking about the same thing?

Q. (BY MR. PADILLA) What is the difference between the map that we introduced yesterday and the map we introduced this morning?

A. As far as I can tell, it's just the addition of a data point in Section 19.

Q. Why did you make that change?

A. I was asked if there were any data points in Section 19, under cross-examination yesterday.

Q. And is that data point the same as you testified yesterday?

A. Yes.

Q. Now, Mr. Feldewert also suggested that we changed the version of the maps, due to thickness or changes in data points, by three or four points in one case and a couple of points in another. Why were those changes made?

A. Well, as with any geologic process -- most geologists draw in pencil for a reason. We're always

refining our maps. We're always tweaking here and tweaking there, changing percentages of -- and some of the comments this morning, I believe there were four feet in one and five feet in another versus 100-foot of pay. It didn't change the maps hardly any.

But as we grow in a prospect and grow in a developmental area, we start noticing things, such as a lateral log cutoff. Maybe we no longer like an 80 lateral log unit, so we cut that off, and we no longer consider that pay. Or perhaps it drops down into a lateral log reading of maybe 30, and we consider that wet, so we'll chop that off. And that will affect our pay.

Q. Now, in November, when you met with Chevron in Houston, you presented certain geologic maps to them, correct?

A. Correct.

Q. Has additional drilling been input into your current maps because of this drilling?

A. Oh, yes.

Q. Which wells would have been used to refine your mapping as it's shown on the exhibits presented yesterday, you know, Exhibit 6, yesterday and today?

A. We would have drilled the Telecaster 3H, Telecaster 4H. The Caza Copperline would have been

drilled. We also found some additional data on some wells that we didn't have prior. A lot of -- the OCD does not have in their files, and we had to go out to public libraries and law libraries and get additional information.

Q. Even though you were in a competitive situation with Chevron, in terms of acquisition of leases in regard to half of Section 18, did you receive anything from Chevron comparative to any of the mapping and geologic information that you gave to them on November 20th when you met?

A. No. I have not heard a word from them.

Q. Have you heard from Mr. Schwartz or any of the geologists or persons in control at Chevron regarding any of the information that you presented to them on November 20th?

A. No, I have not.

Q. Now, in terms of changes in thickness and the calculations, gross pay or whatever it may be, does that materially change any of the calculations that you may have talked about on November 20th?

A. No. Not substantially, no.

Q. Did the additional drilling that you have just testified about, that you used to input and update your data and refine it, has that improved your vision of

what you're going to encounter in Section 18?

A. Yes, I believe it has.

Q. And how has it improved your vision?

A. Every refinement of the map just seems to more or less state what is going on in that area. I mean, it's a north-south trend on a nose. The sand has piled up against the nose, and as goes over the top and drapes over the side, the sand appears to, according to my isopachs, start to go away. And that will be a very traditional sand deposition environment.

Q. And you're now looking at Exhibit 6, right?

A. Yes.

Q. You're saying there's really no difference in any of this mapping, substantial differences of any sort?

A. No. There will be a few feet here or there. In addition, I have a geotech that works for me, and occasionally, when she finds a data point that I have not or vice versa, she'll put it into the system. And she may not count exactly the way I do, but eventually we'll get it exactly the way we both agree on. But it's substantially the same.

Q. Would your regional mapping support your testimony today that this is not an anticline?

A. Yes, it would.

Q. Mr. Harris, you have the mineral interests in the north half of Section 18, correct?

A. Correct, I do.

Q. And so you've had more than a normal interest as being the geologist for Endurance; is that right?

A. A personal interest in a well does make a lot of difference, yes.

Q. And why do you feel strongly that a north-south -- well, let me ask you: Would you participate in an east-west well?

A. No, I would not.

Q. Can you explain that?

A. I believe in my own geology, and for years, I've had working interests all over the state based on my geology. Generally when I've drilled a well or proposed a well, I took a working interest. So I'm very forthcoming in that if I'm putting my money where my mouth is, then other people believe me, also.

This one I could not see an east-west direction whatsoever. And it was a debate between my wife and myself if we were going to participate at all. It was nothing to do with Endurance, at the time, taking a farm-out. They hadn't even approached me of taking a farm-out.

Q. On the north half?

A. On the north half.

My wife and I considered it. But back in 2008, we did sell out all of our working interest, and she persuaded me in the most strong fashion that we were not going to get back into the working-interest game. And then consequently to that, Endurance did make me an offer, and it was the same offer they made all the other participants or mineral interest owners.

Q. How many 2nd Bone Spring wells have you been involved in?

A. Participated in or --

Q. No. Just been the geologist and a consultant.

A. Probably 20 of the horizontals. Many more verticals prior to that. I mean, verticals go back for the last 25 years as plug-backs of the Morrows, et cetera.

Q. And how many of those horizontals have been in this immediate area?

A. Seven.

Q. Let me ask you about the east-west wells that were drilled by Concho. I think they're called the Macho and the Nacho, if I'm --

A. The Mucho Nacho [sic]?

Q. Mucho Nacho [sic]. Those are drilled east-west, right?

A. Yes, sir.

Q. Do you know what the geology is in that area as opposed to the one in Section 18?

A. Yes. There were some comparisons made yesterday about being the same geology. It's not. It's totally different. For one, we have this big --

MR. FELDEWERT: I object to the form of the question. There was no testimony that it was the same geology.

EXAMINER EZEANYIM: What?

MR. FELDEWERT: There was no testimony yesterday that the area that was studied to the southwest had the same geology as Section 18. There was no testimony to that. The testimony was that the area to the southwest of Section 18 was sufficiently developed to indicate that those wells were in the same type of geology. There was no testimony that that geology was consistent with Section 18.

EXAMINER EZEANYIM: Okay. Counselor, let's concentrate on that --

Q. (BY MR. PADILLA) Let me ask this question: What is your understanding of the geology underlying -- if you have any understanding, of the geology underlying the Mucho and the Concho wells?

A. Well, the direction of flow of the turbidity

curves, the turbidity flows that deposit these things come from a slightly different angle, different direction. They're mappable features. And where those wells are, it happens to be more broken in nature, more limes, heavier shales, thicker sands, believe it or not. So there is thinner two- and four-foot laminated sand shales that are more blocky, so the geology is different.

Q. Let's go to our Exhibit Number 7. In this exhibit, how far away are those Nacho wells from the north half of Section 18?

A. 10, 12 miles away.

Q. In looking at your exhibit -- well, Exhibit Number 6, your structure map, where would that structure -- where do those wells lie in terms of your continuation of this structure as shown on Exhibit 6? Where do they lie?

A. Exhibit 5?

Q. Yeah. Assuming a continuation of --

Well, let me ask this: Does the feature shown on your structure continue on down as far south as where those wells are located?

A. No. No. They're back to original dip going to the west.

Q. So would you say they're on a different

structure?

A. Yes.

Q. Do you know whether they have higher permeabilities than you would encounter in the wells that you have drilled in Section 30?

A. The only way that I could determine that would be on lateral log calculations. Yes, I have looked at the deep and shallow medium lateral log in that area, and, yes, we do have a nice widening effect. So under those circumstances, I would say there is better perm.

Q. But you don't know exactly what they are?

A. No. No. It's all relative to --

EXAMINER EZEANYIM: Which area of the --

THE WITNESS: I would say the Mucho Nacho area.

EXAMINER EZEANYIM: Which is the south?

MR. FELDEWERT: Southwest.

THE WITNESS: Southwest, about 10, 12 miles.

MR. FELDEWERT: Down in here (indicating).

EXAMINER EZEANYIM: Far away from 18. Okay.

Q. (BY MR. PADILLA) So can you use the Concho wells -- can you compare those wells with the geologic features of Section 18?

A. No. The only thing similar is that they're both 2nd Bone Spring, but the makeup of the rock is different. The direction of flow is different. So the structure's different.

Q. And you believe that the permeability is higher there?

A. For the most part, yes.

Q. Is that a belief, or is that more knowledge that you have as to --

A. Well, it's a combination of production and acknowledge of the lateral logs.

Q. So you're not guessing? Let me put it that way.

A. No. It's just a well response.

Q. And that corresponds with what Mr. Lehman has said in terms of higher permeability?

A. Sweet spots, yes.

Q. So at some point, an east well or a north-south wouldn't matter, according to the testimony that we've heard here, right?

A. Oh, yeah, agree 100 percent.

EXAMINER EZEANYIM: What do you agree 100 percent?

THE WITNESS: That in certain areas, an east-west wouldn't make any difference from north-south.

EXAMINER EZEANYIM: Depending on what?

THE WITNESS: Permeability.

EXAMINER EZEANYIM: Okay.

Q. (BY MR. PADILLA) Let's talk about the Mewbourne well in, I believe, Section 21. Is that the same geologic feature that you're drilling into?

MR. FELDEWERT: I'm sorry. I missed that, Counsel. Where are you?

MR. PADILLA: Section 21.

Q. (BY MR. PADILLA) I'm looking at the structure map now, Exhibit 6. Are you talking about the same geology as your well -- as the Stratocaster wells in Sections 20 and 30?

A. It is 3rd Bone Springs versus -- we're going into the 2nd, but same type of similar sands, yes. It's a sand-shale sequence. It's deeper.

Q. How about stress orientation, if you know?

A. From every indication that we've had that I've seen in red, in this area, it's going to be the same, north-south.

Q. Do you know whether the Mewbourne well has low permeability?

A. Low perm? I can give you the first month's production history of less than 10,000 barrels.

Q. And how does that compare to your wells?

A. We generally make -- well, we've made 30,000 barrels in the first month.

MR. PADILLA: That is all I have.

EXAMINER EZEANYIM: Okay. Thank you.

Mr. Feldewert?

CROSS-EXAMINATION

BY MR. FELDEWERT:

Q. Mr. Harris, let's see what we can agree on here. Is the Bone Spring sand faulted?

A. No.

Q. Are there anticlines that exist in the Basin, Delaware Basin?

A. Not that I'm aware of. I'm sure there could be some.

Q. Are there any anticlines in the Devonian?

A. Anticlines in the Devonian? Most of that is a fault-block system, so I would say no.

Q. You'd say no. Okay.

Would you agree that seismic data, in terms of trying to map a structure like we see in Section 18, is better than well control?

A. Not necessarily, no.

Q. Would you consider the wells that you drilled down in Section 30 to the south of 18 to be a sweet spot, as you defined it?

A. No sweeter than Section 18 and Section 19, Section 20.

Q. Do you consider those to be sweet spots?

A. I consider that whole area to be a sweet spot, yes.

Q. What do you define -- how do you define a drape feature, which is -- wait. Let me ask you: Are you saying that the structure we see in Section 18 is a drape feature?

A. Yeah. Drape is kind of --

Q. Let me split it up. The structure that we see in 18, are you saying that that's a drape feature?

A. Partially, yes.

Q. Partially, yes?

A. Yes.

Q. What is it, if it's not a drape feature?

A. Because on the eastern side, it's normal depositional environment. When you get to the apex, then you can say it's draping over into the faulted -- or the lower zone created by the fault.

Q. So how do you define a drape feature?

A. It's draping over the top (demonstrating).

Q. So is it kind of like that (demonstrating)? Would that be right?

A. Yes.

Q. So it's going to slope down to one side?
A. Yes.
Q. Would you expect to see a thickening of the sand to the west of Section 18 if you had a drape feature, as you suggest?
A. I would suggest that you would see thickening of the section.
Q. I'm talking about thickening of the sand.
A. Thickening of the 2nd Bone Spring Sand.
Q. To the west of Section 18, if you had a drape, would you see that thickening of the sand?
A. Yes, you should.
Q. Even though your drape feature is like this (demonstrating)?
A. It's going to be valley-fill.
Q. Okay. We're getting confused in our orientation. As I understand your drape feature, it goes from Section 18 to the east; does it not?
A. No. It goes to the west.
Q. To the west?
A. Yes.
Q. You're saying the drape feature in Section 18 goes to the west?
A. Yes. It's normal to the east.
Q. Normal to the east.

I guess I misunderstood. I thought you had a big pile of sand because you had your drape feature to the east of Section 18?

A. No.

Q. Did the company do a gross isopach map for this Section 18 into the nine-section surrounding area?

A. No. No, I did not.

Q. How do you define an anticline?

A. An anticline is a fold that has used compressional forces east-west, north-south.

Q. Can you have an anticline without compressional forces?

A. An anticline is created by forces.

Q. But, I mean -- at lunchtime, I went and Googled anticline.

A. Okay.

Q. And I got that it's a structural high with opposing dropping ridge in opposite directions. Do you agree with that?

A. Yes, I'll agree with that.

Q. If I go to your Exhibit Number 5 -- have you got that in front of you?

A. Got it in front of me.

Q. As I look to the crest going over Section 18, the middle section, 18, I see dropping limbs off both

sides; do I not?

A. Yes. To a layman's eye, I would agree with that.

Q. But to be fair, though, you don't have any well control to the west of Section 18?

A. I have well control to the southwest.

Q. Let's go around your map here. If I go to north of Section 18, I don't see any well control data, correct?

A. I'm sorry. To where?

Q. To the north of Section 18.

A. No.

Q. If I go to the northwest in Section 12, I see no well control data?

A. Correct.

Q. If I go to the west of Section 13, I see no well control data?

A. Correct.

Q. And if I go to the southwest of Section 18 and Section 24, I don't see any well control data?

A. Correct.

Q. And that is a circumstance when the seismic is helpful in trying to define what we have; is it not?

A. Yes. But if I take my regional picture --

Q. I can only go with what you brought here today.

We don't have your regional picture here today.

A. No.

Q. Now, would you turn to Chevron Exhibit 11? That's the one that was created with the seismic data, Exhibit 11.

A. (Witness complies.)

Q. There you go.

Based on the data that they've mapped using the seismic, that anticline does not go south into Section 30, does it?

A. Not according to this map.

Q. It drapes more over to the east, correct, if I'm reading it right?

A. Yes.

Q. And I think you even testified that you, in drilling your Section 30 wells, did not encounter any evidence of an anticline?

A. Correct.

Q. Which would be consistent, then, with Chevron's map?

A. I can't testify on the consistency of the Chevron map not going into 30, when my evidence of mapping of structure says it does.

Q. Okay. But you just testified that you didn't see any evidence of the anticline going into Section 30?

A. I did not say that, no.
Q. Isn't that what you testified?
A. I testified I don't see an anticline on the entire --
Q. Okay. But your testimony is you don't see any evidence of the anticline that is depicted on Chevron Exhibit 11 going into Section 30?
A. Again, you're trying to lead me into saying that's an anticline, and I can't see that it is on my mapping.
Q. Let's assume it's an anticline.
A. I can't assume it. My geologic -- I've been mapping this for years, and I cannot see it, sir.
Q. Is it your position that we should never drill east-to-west wells in the Delaware Basin?
A. Absolutely not.
Q. Is it your position --
A. I have never said that.
Q. Is it your position that no one should drill an east-to-west well in the 6-by-6 township area that is depicted on Exhibit Number 5?
A. 6-by-6 township area?
Q. I'm sorry. Section area. Well, I'll give it 5. Right? What do you have? Five-section area right here (indicating), if I'm counting right.

A. Yeah, it's a 6-by-6 area.
Q. 6-by-6?
A. Uh-huh. 5.
Q. Is it your position that companies should never drill an east-to-west well in this 6-by-6 area?
A. For 2nd Bone Spring, it's my opinion, no.
Q. If I look at your Exhibit Number 7, the area down to the southwest, that was the common geology and common completion techniques and similarly aged wells that allowed for a comparison of north-to-south and east-to-west wells. You recognize that that study indicated the east-to-west wells were superior to the north-south, correct?
A. From -- from the two wells that were given evidence on, yes.
Q. And it looks like to me, at least, someone started the development going north to south up there in 5 and 6; did they not?
EXAMINER EZEANYIM: Are we talking about this (indicating)?
MR. FELDEWERT: I'm sorry. We're down here in the southwest of Section 18, down in the study area that Chevron utilized, where we had a lot of development.
EXAMINER EZEANYIM: Section 18?

MR. FELDEWERT: Are you with me, Mr. Examiner? So we're down here (indicating).

EXAMINER EZEANYIM: Let me see where you're at.

MR. FELDEWERT: Well, here is Section 18 (indicating). And remember, Chevron did their study down here, where you could do some apples-to-apples comparisons.

EXAMINER EZEANYIM: Okay.

Q. (BY MR. FELDEWERT) It looks to me like someone started doing a lot of north-south wells in Sections 5 and 6, correct?

A. It looks to me that way, also.

Q. Do you know who drilled those wells?

A. Those are called the Tres Equis, and those were started by Cimarex.

Q. Cimarex.

And do you know who drilled those north-south wells to the north of Sections 5 and 6, and 31 and 32?

A. Can you refresh me with a well name?

Q. Well, let's see if I can read it. H-E-M-L -- it's tough to read on your map. So you don't know?

A. I can't recall what has been drilled, no.

Q. But despite the success of those wells, Concho

decided to try an east-to-west well, correct?

A. Apparently, they did. They drilled one.

Q. And it was successful?

A. I did not do the geology, so I cannot comment on which way would have been the best at the time.

Q. But they drilled that well, and it was the highest-performing well?

A. Well --

Q. According to the study?

A. Well, according -- I have not seen the study, so I do not know if it's the highest. I mean, it was talked about yesterday.

Q. The data, you haven't looked at it?

A. No. I have not seen the data.

Q. Well, I'll represent to you the data indicated that those were the highest-performing wells?

EXAMINER EZEANYIM: Which wells? The Nacho wells?

MR. FELDEWERT: From east to west.

EXAMINER EZEANYIM: They call them Nacho wells.

MR. FELDEWERT: Nacho.

THE WITNESS: May I ask you a question?

MR. FELDEWERT: No. I get to ask you questions.

Q. (BY MR. FELDEWERT) So my point is, if Cimarex hadn't drilled those east-to-west wells -- if somebody hadn't tried it, you wouldn't know how they would perform versus the north-south wells, correct?

A. That's not necessarily correct, no.

Q. But because someone chose to drill an east-to-west well, we at least had data to compare how they did with respect to the north-south well. It gave us an opportunity for comparison?

A. I'm going to disagree with that, because I do not know the horizontal interval within the 2nd Bone Spring that each of these have been landed in.

Q. Would you agree with me that all these wells were drilled in the 2nd Bone Spring?

A. That, I would agree with, yes.

MR. FELDEWERT: That's all the questions I have.

EXAMINER EZEANYIM: Before we leave that, I'm looking at those wells now. Do we have the performance of those wells, the ones drilled? Most of them are to one side. And then these Concho wells, do we have any performance on them?

MR. FELDEWERT: Mr. Examiner, that was the subject of Chevron's study that was presented by Mr. Sigmundik, where he compared the north-south versus

the east-to-west, the Macho wells.

EXAMINER EZEANYIM: So we have it in your exhibits?

MR. FELDEWERT: It's in our exhibits. It would be starting at Exhibit 28 and continuing on through Exhibit 33.

EXAMINER EZEANYIM: Anything further?

MR. FELDEWERT: That's all the questions I have.

EXAMINER EZEANYIM: Any redirect?

MR. PADILLA: No, Mr. Examiner.

EXAMINER EZEANYIM: Okay.

CROSS-EXAMINATION

BY EXAMINER EZEANYIM:

Q. Mr. Harris, who do you work for?

A. Endurance Resources.

Q. Who?

A. Endurance Resources.

Q. I was confused when you were talking about your working interests.

A. I've had working interests and overrides in wells over the last 40 years.

Q. And some of them were operated by Endurance?

A. No.

Q. It's something else?

A. It's something else, yes, sir.

Q. Okay. Very good.

You know we are in trouble if this is what's happening -- and I don't like it -- if two geologists disagree vehemently on that one section, whether it's anticline -- has an anticlinal feature or not, whether the direction of flow is different, recovery is different.

What do you want me to do? I mean, I thought we were using some science, I mean, to have an agreement, but what I get is that one says anticline and one says not anticline. Well, that's my job, to determine which one is it.

And Mr. Harris yesterday said it's not an anticline because -- it's not even a syncline.

A. No.

Q. It's not an anticline, not a syncline, just, you know, it's a mass of sand.

A. (Indicating.)

Q. You know the position of the sand, right?

A. Yes, sir.

Q. You used a lot of -- you said sweet spots. Sweet spots may be different. What do you mean by sweet spots?

A. Sweet spots are when I made the map and find

area concentrations of sands within the -- within the 2nd Bone or the 1st Bone or 3rd Bone Spring Sand interval, when I'm able to find the cleaner sands. That's what I consider the sweet spot.

Q. Sweet spot because you think it will be productive?

A. More productive, yes, sir.

Q. And apart from this study that was done by a model, did you decide that this is not an anticline because you are looking at this map, because we dwelled on this map? This is Exhibit Number 5.

A. Yes, sir.

Q. Is that why you decided that it's not an anticline?

A. No. I think we have a normal depositional environment from the apex to the east, and then due to the faulting in the Devonian, a steep depositional environment on the west side. So that would not be an anticline. That would be just a depositional environment.

EXAMINER EZEANYIM: Does this really happen in industry? Because what it tells me is that one of your geologists is wrong. You know, both of you cannot be right. Can they? No. And if you say anticline, you cannot be right -- if you say it's a mass of sand, you

cannot be right if it's anticline.

So the point I'm trying to make is that one of you is right about the geology on the structure in 18. If it were me that somebody may be given a wrong angle to drill -- leave hydrocarbons in the ground, it shouldn't happen here. If you didn't come to hearing and this thing went, you know, and the geologist said whatever -- I don't know which one it is. I don't know yet.

MR. PADILLA: Well, Mr. Examiner --

EXAMINER EZEANYIM: But what I'm trying to say is that it's not really -- I wanted to see -- that's why I recalled the geologists. There might be a consensus, one consensus on the permeability, but not on this structure of Section 18, which bothers me. But that's okay.

MR. PADILLA: Mr. Examiner, let me say something here. Because of your comments, perhaps both sides are missing a geophysicist, at this point, to interpret the geophysical data. That may paint a better picture.

EXAMINER EZEANYIM: So what are you suggesting?

MR. PADILLA: Well, maybe a continuance so that we can be more precise.

EXAMINER EZEANYIM: No, we're not going to continue this case. I think I've heard enough. We are not going to continue, even though I do not what's going on here, but I think I do. I don't think I need a geophysicist to come, if he'll say the same thing.

So complete your -- complete what you're saying.

REDIRECT EXAMINATION

BY MR. PADILLA:

Q. Mr. Harris, when you talk about sweet spots, you're not equating that with permeability?

A. No, I'm not.

Q. So the sweet spot represented by Exhibit 6 does not indicate that you have high permeability?

A. No, just a higher -- cleaner sand on the log interpretation.

MR. PADILLA: That's all I have.

EXAMINER EZEANYIM: Mr. Feldewert, do you have anything to say?

RECROSS EXAMINATION

BY MR. FELDEWERT:

Q. Where is your sweet spot?

A. Anything in the -- anything in the colored area.

Q. If I look at Exhibit 6, where is your sweet

spot?

A. I'd say from the light green all the way to the red.

Q. From the light green all the way to the red?

A. Yes.

Q. That's the sweet spot?

A. Yes. Sweeter to the center.

EXAMINER EZEANYIM: Thank you.

I think we're going to have a land person.

MR. PADILLA: Yes.

EXAMINER EZEANYIM: Mr. Harris, you may step down. Oh, you are already stepping down (laughter).

Call your next witness.

MR. PADILLA: Mr. Examiner, call Jason South.

EXAMINER EZEANYIM: Mr. South, you have been sworn. You are still under oath.

JASON SOUTH,

after having been previously sworn under oath, was questioned and testified as follows:

DIRECT EXAMINATION

BY MR. PADILLA:

Q. Mr. South, please state your name and where you reside.

A. Jason South, Midland, Texas.

Q. Mr. South, I know you haven't testified before as a landman before the Oil Conservation Division in the past. So please would you state your educational background?

A. Yes, sir. I graduated from Texas A & M University in 2005 with a business marketing degree. And as far as my experience as a landman, I started my career as a field landman for Shaw Interests.

Q. When did you start that?

A. June of 2005. Sorry. And I graduated May of 2005.

I worked at Chevron after that for almost five years. I worked with Pioneer Natural Resources after that for about a year and a half, and I've been at Endurance for close to a year now.

MR. PADILLA: I'd tender Mr. South as a petroleum landman.

EXAMINER EZEANYIM: So qualified.

Q. (BY MR. PADILLA) Mr. South, let's turn to what we've marked as Exhibit Number 1, and tell us what that is.

A. Yes, if I can find Exhibit 1. Okay. Here we go.

EXAMINER EZEANYIM: What exhibit are we

looking at? Number 1?

MR. PADILLA: Exhibit Number 1.

Q. (BY MR. PADILLA) What is that?

A. This is a timeline that we put together. We wanted to kind of share with you all the work that's gone into this, when we started it to the whole -- everything that's gone on with Chevron. And we've tried to do it piece by piece because of the broad --

Q. Well, let me ask this: Does this timeline show when you started putting together the prospect for drilling a well in Section 18?

A. Yes, sir. Yes, sir.

Q. And when did you start?

A. Oh, that was one of the first things I was assigned when I started at Endurance Resources. I was handed the takeoff cover of Section 18 and told to get to work leasing it up.

Q. And that's covered by Number 1; is that right?

A. Yes, sir, that is correct.

Q. With regard to Chevron, when was the first time you contacted Chevron?

A. Well, the first time we contacted Chevron was on Monday, November 18th. And to kind of set that up, the bullet point before that, I was contacted by another mineral interest owner. I had been talking with this

guy for a while. He called me and said, I've got some questions; I don't know what's going on. And he said, you know, You presented an AFE to us awhile back, and it was a little over $7 million, and you guys want to drill a north-south well. I said, Yes, sir; that's correct.

He proceeded to say, I just got a well proposal from Chevron, and they want to drill a well that's east-west, and their fee is almost $10 million. Can you tell me what's been going on? And that was -- I didn't know. I said, Maybe it's a different formation they're chasing. Do we have the right section we're talking about? So that was the first time I knew anything on the Chevron side.

So we then proceeded -- I called Don and told everybody what was going on. And then Randall Harris, since he is a mineral interest owner in the north half of 18, he received a letter as well, and he said, Yes, I got that, too. He scanned it to us, so we could see it.

So our next step was then -- we wanted to go meet with Chevron to discuss it. And we were actually working on a trade proposal in a different area, and so we wanted to -- since we were working on that, we sped that up and then went to meet with Chevron on the 20th in Houston, Texas.

Q. And you're generally talking about point number 11 through -- 11 and 13 on the timeline; is that right?

A. Yes, sir. 12 is just talking about a survey that we completed. But, yes, sir.

Q. How did you set up the meeting to meet in Houston?

A. I called Jason Levine at Chevron and said, you know, we needed to meet to discuss; we had some issues, questions on your well proposal.

Q. So when you met with them, what did you take with you?

A. Oh, we brought --

Q. Well, let me ask: Who went to the meeting?

A. Don Ritter, Randall Harris and myself.

Q. What did you take with you?

A. We took a slide show that -- the slide show started out with an introduction to Endurance, who we were, what we were doing. What we do is drill Bone Spring wells. And so that was the first part of our slide show.

The next part was dealing with the trade proposal that we had from Chevron in lands that do not affect this.

And the third part was discussing the well proposal and presenting why we viewed north-south as the

better direction to go.

Q. During Mr. Levine's testimony, he implied that Chevron set up the meeting; is that correct?

A. We made contact and everything, and they told us when they could meet. And we were on a plane to go meet.

Q. And it took you -- you were on a plane three days later?

A. Yes, sir. We found out on the 15th of, which is a Friday, November, and we were in Houston on the 20th, which is a Wednesday.

Q. And you had your meeting. And what happened following the meeting, at the conclusion of the meeting?

A. Well, we had our meeting because we had some questions and concerns. The first one was, you know, what was going on with the AFE. And I think that was addressed earlier. There were some glitches and costs had decreased.

But our second one was -- we wanted to know why they proposed an east-west well. And both Don and Randall point-blank asked that question, and we never got a response on that. And that was kind of our basis. You know, we wanted to know why. Is there something we don't know about? What's going on? Nothing. Then we presented why we thought north-south was the way to go

with drilling north-south wells in the area.

Q. I think you're jumping ahead of me here. When you say you got nothing, you not nothing at the meeting or --

A. Oh. Just no responses. There was no -- you know, no data. Nothing was conveyed to us why an east-west well was proposed.

Q. So on November 20th, it's fair to say you made a proposal to them about drilling a north-south well?

A. Yes. In our slide show, we showed one spot where we had a four-well stake going north-south in Section 18, and we talked about why we thought it was best to drill north-south. And we also talked about how we had operations in the area and had our infrastructure set up and that we could operate that well.

Q. Is there a time when you sent an AFE to --

A. Yes, sir. I sent a follow-up e-mail about a week later, on the 27th.

Q. Where is that represented on your timeline?

A. It's number 15.

Q. So on November 27th, you sent them an AFE?

A. Yes, sir, that is correct.

Q. Correct me if I'm wrong. Did Mr. Levine say you never sent them an AFE?

A. That was brought up yesterday. I think he said

we hadn't sent them one until -- I think the 31st of December was when they said was the first time we had received an AFE from them. I think we brought that e-mail just to show --

Q. Did you send a letter to them, as shown by Exhibit 2, attaching your AFE? Let me put it this way. You e-mailed them an AFE, is that right, on the 27th?

A. Yes, sir. My e-mail to them was outlining kind of our trade proposal. We talked about the lands had nothing to do with this deal, and also to show our AFE, and that we looking forward to hearing back from them on our discussions on Section 18.

Q. And then on December 31st, as shown by Exhibit 2, you sent a formal election letter; is that right?

A. Yes, sir.

Q. Now, between the 27th of November, when you sent them an AFE the first time, did you hear anything back from Chevron?

A. We never heard anything back on Section 18 from Chevron.

Q. Did you try to engage Chevron in further discussion with regard to drilling a well in Section 18?

A. Yes, sir. We left many voice mails. We ended up -- Manny Sirgo sent a letter to a higher-up, Becky Wagstaff.

Q. When was that sent; do you know?
A. December 19th. It's number 18.
Q. And is that represented on the timeline?
A. Yes, sir, number 18. Yes, sir.
Q. Number 18.
Who is Becky Wagstaff?
A. She's way up in the stratosphere. I don't know her title there at Chevron, but she's way up there.
Q. So you tried to engage a higher authority at Chevron?
A. We were just trying to get somebody to talk to us.
Q. So when was the next time you heard from Chevron?
A. We never -- we never did. The next thing we knew, one of our field guys call us and said, Chevron's moving a rig and equipment onto location, and that was when we had to file our protest.
Q. When did you learn that, that they were moving a rig on location?
A. I'm sorry, what was the question?
Q. When did you learn that Chevron was moving a rig on location?
A. It was late December. I don't have the exact date.

Q. And what did you do as a result of learning that a rig was being moved to the location?

A. We contacted you and told you everything going on, and that resulted in us filing a protest.

Q. You protested the well to begin with? Is that what you did, or did you file an application for a compulsory pooling?

A. We protested the well on the 27th.

Q. And that is shown by -- I believe it's the December 27th letter, what I believe is our Exhibit Number -- I believe it's 17.

Is this series of correspondence -- do you have that up there?

A. Yes, sir.

Yes, sir. This is it.

Q. And what exhibit is that? Is that Number 17?

A. Mine's not marked.

EXAMINER EZEANYIM: It's 17.

THE WITNESS: Thank you.

Q. (BY MR. PADILLA) Why did you feel compelled to get me involved in sending this correspondence to the director of the Division?

A. We were out of options. We had an asset up there, and it was getting drilled, and we had no knowledge that any of this was going on.

Q. Had you still been trying to get ahold of Chevron at this time?

A. Yes, sir. We made lots of attempts. And I sent a letter on to Chevron, the protest letter. I stated in there that we tried for weeks to get somebody to talk to us, and, you know, this is not what we wanted to do. We wanted to be a partner of choice with Chevron. And I worked there for five years, so I have a soft place in my heart for them. That is not what we wanted to do, but it was one of those things -- that was our last option.

Q. Was there a point in time when you asked me to file a competing compulsory pooling application for a north-south well?

A. Yes, sir.

Q. And when did that occur?

A. I believe, on January 3rd.

Q. Now, there was testimony concerning the spudding of the well on December 25th, on Christmas Day. And when did Chevron move the rig on again?

A. We heard from our field supervisor that it was late December.

Q. Late December?

A. Yes.

Q. So at this time are you still competing with

Chevron in trying to acquire oil and gas leases on the north half?

A. Yes, sir.

When Chevron spudded the well, they only owned about 42 percent ownership in that section. And at that point in time, there was over 30 percent of the section unleased, as well as we had the remainder of the interest.

Q. By that time, had Chevron already filed a compulsory pooling case against you?

A. Yes. They had already -- they spud, drilling, and we got notice of that on January 3rd from you, which wasn't even proper notice. They wanted to do it on the 23rd of January. And they sent it through you, which wasn't proper notice, because you weren't representing us at that time.

Q. In the compulsory pooling case?

A. Yes.

Q. So has Chevron's interest in the north half increased?

A. No, sir.

Q. And how about the interest of Tritex Energy?

A. Yes. We picked up all the remaining mineral interest owners in the north half of Section 18. And the one person that did not want to lease was Mr. Ray

Westall, and he signed our election letter to participate in a north-south well.

Q. How about BTA?

A. Yeah. BTA owns 100 percent in the south half of Section 18, and they -- they protested earlier, around the 27th, when we protested. And then they sent a letter, which is Exhibit 3, because they are against any such well because of economics, and they wanted to be in a north-south well with Endurance.

Q. And that letter on Exhibit 3 is a letter that they sent to the director of the Division; is that right?

A. Yes, sir.

Q. And that's marked as Exhibit 3?

A. Yes, sir, that is correct.

Q. What do they say about the economics of an east-west well on Exhibit 3?

A. BTA is of the opinion that an east-west well in Section 18 is not economic.

Q. Let me ask you: There's been some testimony here concerning the south half being federal land or federal minerals and the north half being private minerals. In your experience, has the BLM ever refused to authorize a communitization agreement solely on the basis of federal land only?

A. No, sir, not that I'm aware of.
Q. How often are private and federal, state lands mixed together to form a spacing unit?
A. All the time.
Q. Now, was there a time that you sent a JOA to Chevron?
A. Yes, sir. We sent our JOA on January 20th, 2014.
Q. And where is that represented on Exhibit 3?
A. Number 31.
Q. In that JOA, what overhead rates did you have?
A. We sent, for drilling, 9,400, and I believe 940. And those numbers were taken from -- there is a Joint Operating Agreement that covers Section 29, just a few miles south, where Endurance is the operator of the east half and Caza is the operator of the west half. And Chevron owns a non-op interest in the entire Joint Operating Agreement, and they signed and agreed to those numbers. So that's why we presented those numbers.
EXAMINER EZEANYIM: What are the overhead rates?
THE WITNESS: 9,400 and 940. So that was our basis on those numbers. Chevron had already agreed to those numbers in another section.
Q. (BY MR. PADILLA) So let's go over the ownership

breakdown on your Exhibit Number 1.

A. Yes, sir.

Q. How does it break down on the north-south well?

A. Well, for a north-south well, BTA owned 50 percent. Tritex would own a little over 27 percent, Chevron USA, a little over 20, and Ray and Carol Westall, a little over two percent.

Q. And on an east-west well?

A. Tritex would own 54 percent of that, while Chevron almost 42 percent, and Ray and Carol Westall, a little over 4 percent.

Q. So you would still have a majority interest whether or not you drill an east-west or north-south well, other than when you include the BTA --

A. Oh, yes sir.

Q. -- acreage?

A. Yes, sir.

Q. In the letter from BTA to the director of the Division that's represented by Exhibit Number 3, is there a -- does BTA state that they have elected to join in the north-south well?

A. Yes, they do. They have fully supported drilling the north-south well.

Q. And going on to the last page, is there a percentage of working interest owners that favor a

north-south well in Section 18?

A. Almost 80 percent of the owners of all of Section 18 favor a north-south well. Really, the only group opposed to a north-south well is Chevron.

Q. Let me hand you what I've marked as Endurance Exhibit Number 1A and ask you what that is.

A. This is the follow-up e-mail to our meeting on November 27th, 2013 -- our meeting on the 20th, and this is just a follow-up on our trade proposal, present our AFE for our Starcaster well located in Section 18, and just throwing out there that we were excited to hear back on the discussion on Section 18 as well.

And the next page is correspondence between Don Ritter and Mr. Todd Kratz of Chevron. And these are the e-mails just kind of showing some different trade proposals that we threw out there for Chevron, in Section 18, to try to work out some type of deal.

Q. When you look at any of this correspondence, is there anything coming back from Chevron indicating that they have either some interest or no interest or any interest?

A. No, sir. The only thing we were ever hearing was evaluation. The only thing that I ever got an answer on from Chevron was that they did not like our trade proposal in 25 South, 35 East. That was it. As

far as Section 18, there was -- there was no correspondence.

Q. Has this been, in your experience -- in any of the negotiations that you've conducted with respect to trying to have other people join in drilling wells --

A. I'm sorry. I missed the first part of the question.

Q. Let me ask you: Have you ever experienced this type of communication or lack of communication from anyone in negotiating well proposals?

A. No, sir. I've never been in a spot like this, where we couldn't get any action.

Q. Have you received any comment on the Joint Operating Agreement that you sent to Chevron?

A. No, sir. No, sir.

Q. What is your experience as to whether or not Chevron, in bringing this case, is acting in good faith before filing a compulsory pooling application?

A. None that I see.

I mean, we found out about a well that was being drilled on land where we own 50 percent, and we did not know -- we had never heard from Chevron that this was something they wanted to do.

Q. Was there a time that somebody told you that they had not spudded a well?

A. (No response.)

Q. Let me rephrase. Testimony has been here that Chevron spudded -- at least I think Mr. Feldewert said that the well was spudded on December 30th, and there was also testimony about maybe it was spudded on the 25th. When is that correct -- what date is correct as far as you know?

A. You know, yesterday Jason Levine said they had spud the well on Christmas. So, you know, I don't have an exact date.

Q. And it's your testimony they had already filed a compulsory pooling application; is that right?

A. Yes, sir. Well, we did not know about that at all until we received notice on January 3rd of 2014.

Q. For the January 23rd hearing?

A. Hearing, yes, sir.

Q. Let me direct your attention, again, to paragraph 17, which is the compilation of correspondence to the director of the OCD, and let me direct your attention to the fourth page of that. And it's the second page of Mr. Feldewert's letter to the OCD.

EXAMINER EZEANYIM: Which one?

MR. PADILLA: The December 30th, 2013 letter.

EXAMINER EZEANYIM: Which exhibit?

MR. PADILLA: Exhibit Number 17.

EXAMINER EZEANYIM: Okay. This one (indicating)?

MR. PADILLA: Yes.

EXAMINER EZEANYIM: Okay. From Mr. Feldewert?

MR. PADILLA: Yes.

EXAMINER EZEANYIM: Go ahead.

Q. (BY MR. PADILLA) Mr. Feldewert states, at the top of the page: "Chevron has had a rig scheduled for this well for sometime and plans on spudding the well today." And the letter is dated December 30th. So on December 30th, according to Mr. Levine's testimony, they had already, in fact, spudded the well?

A. That would appear to be the case.

Q. Before I finish, let's go to Exhibit Number --

EXAMINER EZEANYIM: Before you go there, none of your letters got a reply, right? You didn't get a reply, right?

MR. PADILLA: No, Mr. Examiner. We were both sending letters to Ms. Bailey.

EXAMINER EZEANYIM: I wasn't here at that time. That's okay.

MR. PADILLA: To be fair to Mr. Feldewert, I protested the well, and I sent -- ultimately, he got a

copy of that letter, and then we went back and forth.

EXAMINER EZEANYIM: No response?

MR. PADILLA: No.

EXAMINER EZEANYIM: Just for my own information.

MR. PADILLA: Then we got with the compulsory -- with this hearing.

Q. (BY MR. PADILLA) In all of your proposals, was there some kind of an agreement, either to buy out the acreage or get a term assignment from Chevron so you could drill the north-south well?

A. Yes, sir. We had several talks with them to see -- in this election letter, you'll see -- I'm sorry. This is Exhibit 2, under paragraph three. We offered to, you know, negotiate a term assignment if Chevron did not want to drill a north-south well.

Q. How about the converse of that? Did you offer to sell your acreage in the north half of Section 18 to get out of the way?

A. At one time Don Ritter had spoken with them. The way the ownership -- at that point in time, we had a little over 20 percent in the north half of Section 18, and Chevron had about the same interest in the east half of 19. And we said we would do a swap, get out of your way, let you go drill your well.

Q. Let me direct your attention to Exhibit 13. It's an affidavit, my affidavit.

A. Okay.

Q. Mr. South, is that an affidavit saying that I have notified all offset operators and parties?

A. Yes, sir.

Q. On the second page, does that identify the parties who are offset operators and nonconsent?

A. Yes, sir.

Q. So in this case, number four, Chevron would be both the offset operator and a nonconsent person --

A. Yes, sir.

Q. -- party?

Let me ask you -- there is some -- before we move on, I neglected to ask you. Chevron has ConocoPhillips as owning an interest in the south half of Section 18. What's your information in regards to ConocoPhillips? What is ConocoPhillips' interest?

A. We did not reflect ConocoPhillips to own any interest in the south half of Section 18. Just to give you a little -- where we are. On the timeline, if you go to number five, I received a takeoff on the south half of Section 18 on that date. And a few days later we made contact with BTA, because they own 100 percent in the south half of Section 18, to work out some type

of term assignment. And they told us they weren't interested in that but would like to participate in the well.

Q. And that's a Bone Spring well?

A. Yes, sir. Correct.

Q. Do you know whether ConocoPhillips owns some -- well, is there a depth limitation of the BTA ownership?

A. Yes, sir. BTA owns to 43,580 feet. And below that, I don't know, because we don't care because it's nothing to do with what we're doing.

Q. Your compulsory pooling case only includes to the base of the Bone Spring; is that right?

A. Yes, sir, that's correct.

And, also, if you go to Exhibit 3, BTA says, on the first line, that they own 100 percent working interest in the south half.

Q. And that applies to the Bone Spring?

A. Yes, sir.

Q. Did Chevron ever offer you a term assignment?

A. No, sir. The only thing received from Chevron was an election letter, and at that time, they had us reflecting that we owned a two percent interest. And there was no -- there was no offer at all of a term assignment. It was: Do you want to participate at all or not? That was it.

Q. So let's go on to Exhibit 14. That's merely your application for a permit to drill, that you filed with regard to the BLM, to drill your proposed well, right?

A. Yes, sir, that is correct.

Q. I won't go into that, other than that tells us what the footage is and that sort of thing, right?

A. Yes, sir. We proposed the well 330 from the north and 660 from the east.

MR. PADILLA: Mr. Examiner, we offer Exhibits 1, 1A, 2, 3, 13 and 14.

EXAMINER EZEANYIM: All right. Let me write them down. Which ones? 1, 1A?

MR. PADILLA: 1, 1A, 2, 3, 13 and 14.

EXAMINER EZEANYIM: Any objection?

MR. FELDEWERT: No objection.

MR. PADILLA: And we'll pass the witness.

EXAMINER EZEANYIM: Exhibits 1, 1A, 2, 3, 13 and 14 will be admitted.

(Endurance Resources, LLC Exhibit Numbers 1, 1A, 2, 3, 13 and 14 were offered and admitted into evidence.)

EXAMINER EZEANYIM: Mr. Feldewert, your witness now.

CROSS-EXAMINATION

BY MR. FELDEWERT:

Q. Mr. South, when you met with Chevron on November 20th, they had proposed formally to all the working interests in the north half to drill an east-west well, correct?

A. Yes, sir.

Q. And at that time, as I understand it, at that meeting, Endurance tried to convince Chevron to drill a north-south well, right?

A. Yes, sir. We brought forth that we thought the best orientation was north-south.

Q. And you were asking Chevron to drill a north-south well?

A. No, sir.

Q. You were not?

A. No, sir. That was part of the -- we introduced ourselves, in our introduction that I was talking about, and we were showing our expertise in the area, why we thought we would be the best operator to do that.

Q. And you believe it should be a north-south well?

A. Yes, sir. I'm not a geologist or anything.

Q. But the company's remained adamant throughout the entire process that it should be a north-south well,

right?

A. Yes.

Q. Go to our notebook with Exhibit Number 4. And I just want to talk a little bit about the AFE that you referenced. If I look at the third page of Exhibit Number 4 --

A. Yes, sir.

Q. -- I see that the AFE is dated November 19th, 2013. Is that the one you said you eventually e-mailed to Chevron?

A. I believe that's correct. It's attached to --

Q. Yeah. It was cut off, and I couldn't --

A. Oh, yeah. It's the same.

Q. I saw that the date's the same.

A. Yes, sir. It should be the exact same.

Q. Okay. This is all -- you sent this by e-mail to Chevron, correct?

A. This letter?

Q. No, this AFE.

A. Yes, sir. I sent that in an e-mail to Mr. Schwartz and Mr. Levine.

Q. Sometime in November?

A. The 27th, I believe.

Q. And if I look at this AFE, it's not -- stay there for me, Exhibit 4.

A. Sorry.
Q. Just go to the AFE.
A. Okay.
Q. It wasn't signed, correct? There is no signature at the bottom; is that right?
A. No, sir.
Q. It doesn't show any -- it doesn't identify the well orientation?
A. I mean, it's --
Q. On the AFE?
A. No, sir. It's addressed in the letter, which is attached.
Q. But one could surmise that it looked like a draft, since it wasn't actually signed? Would that be fair?
A. I don't know. I just --
Q. And it wasn't until December 31st, then, that the company then formally proposed, not only to Chevron but all the other interest owners, to actually go out and drill a north-south well, right?
A. Yes, sir.
Q. That's shown on Exhibit 4?
A. Yes, sir.
Q. Keep that in front of you, please. As I look at this well proposal, it's for a well that you describe

in the RE line as the east half of the east half of Section 18. Do you see that?

A. Yes, sir.

Q. And the proposal of the well is going to be a stand-up, 660 from the east line.

A. Okay.

Q. So that would be the east half of the east half?

A. Yes, sir.

Q. And are you aware that the Bone Spring spacing in this area is 40 acres?

A. Yes, sir.

Q. That's statewide spacing; is it not?

A. Yes, sir.

Q. And the well you've proposed is only going to penetrate the 40-acre tracts that comprise the east half of the east half?

A. Yes.

Q. That's right?

A. (Indicating.)

Q. That well is not going to penetrate the west half of the east half?

A. No, sir.

Q. And so that well that you have proposed here is not going to develop the entire east half of Section 18,

is it?

A. No, sir.

Q. Can you explain, then, why you're pooling application that you filed with the Division seeks to dedicate this well to an east-half spacing unit something Mr. Ezeanyim brought up at the beginning of this hearing?

A. Well, I didn't prepare it, but we wanted to drill two wells in the east half of Section 18.

Q. But your pooling application that you filed with the Division is not to first create an east-half spacing unit in an east-half spacing unit, then pool. Your pooling application asks the Division to create an east-half spacing unit and then pool the entire east half, correct?

A. Yes, sir.

Q. And that's something they cannot do under their rules. Are you aware of that?

A. No, sir.

Q. In fact, the advertisement that came out for this hearing here today only advertised a request to pool the east-half spacing unit. It did not request to pool an east half-east half spacing unit.

A. Is that a question?

Q. Yeah. Is that correct?

A. Sorry. Could you repeat that?

Q. The advertisement for this hearing here today for Endurance's application is not to pool an east half-east half spacing unit. It is to pool an east-half spacing unit?

A. Yes, sir, that's correct.

Q. For a well that's going to develop the east half of the east half?

A. Okay.

Q. Now, you mentioned that you don't believe ConocoPhillips has an interest in the south half of Section 18?

A. No, sir, not at all.

Q. Do you have a title opinion?

A. I have takeoffs that were done, and I have BTA saying they own 100 percent.

Q. Those takeoffs that you received, I guess you didn't have sufficient trust in them, because didn't you ask for a title opinion?

A. Yes, sir. We were trying to get a title opinion because we want to drill a well.

Q. If I look at Exhibit Number 1, paragraph nine, it says: "I sent a title opinion request to David Smith with Stubbeman Law Firm on November 13th, 2013."

A. Yes, sir.

Q. Have you received that yet?
A. No, sir.
Q. So you still don't have a title opinion for the south half of Section 18?
A. No, sir.
Q. Were you here when Mr. Levine testified the company has a title opinion for Section 18?
A. For the north half.
Q. And for the south half?
A. He didn't say they had a title opinion for the south half. He said he had a takeoff.
Q. Are you aware that David [sic] testified that ConocoPhillips does hold an interest in the south half of Section 18?
A. I heard that, but, you know --
Q. Were you aware that they contacted ConocoPhillips and discussed their well proposal with ConocoPhillips?
A. That was mentioned yesterday.
Q. But ConocoPhillips did not receive notice of your hearing here today, did they?
A. We do not have any evidence that Conoco owns anything.

Now, I would like to speculate on that.

You said that Conoco is the record title owner, correct?

Q. They are.
A. Okay.
Q. Is that correct? Is that what your takeoffs show?
A. Yes.
Q. Okay. So you know we're leasing record title?
A. Yes, sir. So my guess would be that BTA drills Morrow wells. Correct? BTA owns the south half.
Q. That's your -- that's what your records reflect, your takeoffs?
A. Our takeoff reflects that BTA owns --
Q. My question is: Do you have a title -- you asked for a title opinion to confirm the takeoffs, but you have not received that?
A. I ordered a title opinion so we could be ready to drill the well.
Q. Have you received that title opinion?
A. No, sir.
Q. And that title opinion will confirm, will it not, whether ConocoPhillips has an interest in the Bone Spring in the south half of Section 18?
A. It will, yeah, whenever we get it. But Chevron does not have a title opinion either, correct? They have a takeoff by a broker, which is the same thing we have, correct?

Q. And they show ConocoPhillips having an interest in the south half of Section 18.

A. What depths do they show?

Q. You'd have to ask Mr. Levine, but he testified at the hearing today. You were here.

A. Okay.

Q. He said ConocoPhillips has an interest in the Bone Spring in the south half of Section 18.

A. Oh. You know, my guess would be they do own an interest below the 14,800 area. My guess would be that there was a farm-out agreement between Conoco and BTA. BTA went out and drilled a Morrow well. They earned all the depths they've drilled, and Conoco retained the deep rights.

Q. That's your guess? That's your guess?

A. Well, y'all are guessing, too. It's the same -- we have a takeoff. BTA, they may own 100 percent.

Q. Have you looked at the farm-out agreement?

A. No. I'm just -- I'm just --

Q. So you don't know?

A. No. Y'all are throwing stuff on the wall, so I'm going to throw stuff, too.

(Laughter.)

THE WITNESS: I apologize. Sorry.

Q. (BY MR. FELDEWERT) Now, I want you to take a look at Exhibit Number -- Chevron Exhibit Number 2.

Actually, you know, let's look at a map. That might be better. Do you have your Exhibit Number 6 in front of you?

A. My Exhibit Number 6?

Q. Endurance's Exhibit Number 6.

A. Yes, sir.

Q. Now, we have this big debate over how Section 18 could be developed.

A. Yes, sir.

Q. And one option you're aware of could be that you could develop the federal acreage in the south half of Section 18 with the federal acreage in Section 19, correct?

A. That's what you talked about earlier, yes, sir.

Q. And you wouldn't need a comm agreement, communitization agreement, to develop that federal acreage in the south half of 18 with the federal acreage in Section 19.

A. Okay.

Q. Correct? You're aware of that?

A. I was under the impression that you force -- that federal leases do not allow approval.

Q. So we've got two different concepts here. Let

me ask it this way. To drill your stand-up well, you're going to have to a federal permit.

A. Yes, sir.

Q. And you've applied for that?

A. Yes, sir.

Q. Have you received it?

A. No, sir.

Q. You're going to also have a comm agreement for your well; are you not?

A. Yes, sir.

Q. Did you apply for that?

A. No. That can occur after production of the well.

Q. How many times have you sought a communitization agreement from the BLM?

A. That I have?

Q. Uh-huh.

A. I have not.

Q. You've never done it?

A. No, sir.

Q. Are you familiar with the BLM's manual on communitization?

A. I've seen it, yes, sir.

Q. Have you reviewed it?

A. I've read pages, yes, sir.

MR. FELDEWERT: May I approach the witness?

EXAMINER EZEANYIM: Sure.

Q. (BY MR. FELDEWERT) Have you had a chance, Mr. South, to look at what I've marked as Chevron Exhibit 36?

A. I'm looking at it now, yes, sir.

Q. It's the 3160-9 communitization manual, I guess, from the Bureau of Land Management.

A. Yes, sir.

Q. Have you previously looked at this?

A. I've looked at a lot of this stuff. I am no expert by any stretch.

Q. Here's what I want you to do for me. Would you read out loud -- go to the second page of this. You're there?

A. Yes, sir.

Q. Read paragraph -- you see A1 there? It says: "Conforming to an Acceptable State Spacing Pattern."

A. Okay. Yes, sir.

Q. Would you read that out loud for us, please?

A. The whole paragraph?

Q. Yeah.

A. Okay. "Communitization is required in order to form a drilling unit that conforms to an acceptable nonoptional spacing pattern established by State order."

The whole paragraph?

Q. Keep going.

A. "As a general guideline, communitization will not be authorized when a single Federal lease or unleased Federal acreage can be fully developed and still conform to an optional (North-South or East-West spacing) pattern established by State order."

Q. Okay. You can stop right there.

Would you agree with me there that they say that communitization will not be authorized when a single federal lease can be fully developed and still conform to a State spacing pattern?

A. Yes, sir.

Q. Let's go to the second page.

A. Is this referring to the trade proposal that you were bringing us? Is that where we're at?

Q. Go to the second page.

EXAMINER EZEANYIM: Second or third?

MR. FELDEWERT: I'm sorry. The third page of this exhibit, yes.

Q. (BY MR. FELDEWERT) Now, I'm going to have you read to yourself paragraph G2 down there towards the bottom. Do you see "Optional State Spacing"?

A. Yes.

Q. Just read it to yourself.

A. (Witness complies.)
Q. Have you finished?
A. Oh, yeah.
Q. Now, the federal acreage in the south half of Section 18 can be independently developed under the state spacing rules; can it not?
A. South half of 18?
Q. Uh-huh.
A. Are you referring to an east-west well?
Q. Yeah. That's one option, right? You can do an east-west well and independently develop that federal acreage?
A. Yes, sir, which the person with 100 percent said they do not want to do.
Q. You own interest down there, don't you?
A. In the south half?
Q. Oh, you don't. You don't.
A. No.
Q. You'd have to pool.
It could also be developed -- that south half of Section 18 could be developed with a mile-and-a-half stand-up well coming out of Section 19, correct?
A. It could.
Q. That's also federal acreage?

A. Yes, sir.

Q. And would you agree with me that this manual at least indicates a strong preference by the BLM to have their federal acreage developed independently of fee acreage whenever it's possible?

A. That's what it appears. I'm not an expert.

Q. Finally, I want to look -- I didn't quite understand something with Exhibit Number 1.

A. Yes, sir.

Q. I'm looking at your paragraph 30 on the second page of that exhibit.

A. Okay. Yes, sir.

Q. Don e-mailed Todd Kratz, land manager at Chevron, on January 16th, 2014 and offered several trade options.

A. Yes, sir.

Q. The first trade option: "Chevron participate as a non-op working interest owner in the north-half well."

A. Yes, sir.

Q. What is the north-half well?

A. I think it's just a typo, but it was to participate in the well we proposed. We have the e-mail as evidence if you'd like to look at it.

Q. That's a typo? Is that what you said, the

north-half well? I'm just trying to figure out what the north-half well is.

A. I believe that's a typo.

Q. That's not Chevron's north-half well, lay-down north-half well?

A. Oh, no, sir.

Q. That's all the questions I have.

EXAMINER EZEANYIM: Okay. Thank you.

MR. PADILLA: I have a couple of follow-up questions real quick.

REDIRECT EXAMINATION

BY MR. PADILLA:

Q. Mr. South, looking at this manual of --

EXAMINER EZEANYIM: Wait a minute. Wait a minute. Mr. Feldewert, do we have to admit this, because we need to do it right?

MR. FELDEWERT: Can I move the admission of Exhibit 36?

EXAMINER EZEANYIM: Any objection?

MR. PADILLA: No.

EXAMINER EZEANYIM: Exhibit 36 will be admitted.

(Chevron USA, Inc. Exhibit Number 36 was offered and admitted into evidence.)

EXAMINER EZEANYIM: Okay. Go ahead,

Mr. Padilla.

Q. (BY MR. PADILLA) Mr. South, Mr. Feldewert asked you to read a portion of paragraph A1 of the second page of this exhibit.

A. Which exhibit, please? Sorry.

Q. The last one.

A. Yes, sir.

Q. Can you read the last sentence of that paragraph? He had you stop at the word "order."

A. Okay. And you want me to read that?

Q. Yes.

A. Okay. "If the Federal tract cannot be independently developed and there are a number of spacing options, the authorized officer should require the one that is in the best interest of the Federal Government, i.e., the one that provides the largest Federal participation."

Q. In your opinion, can that be interpreted to justify an east-half proration unit in this section?

A. Yes, sir.

Q. And based on the testimony here that the east-west orientation of this pattern, as far as Endurance's case is concerned, the federal government interest -- the north-south would be more favorable to the government?

A. Oh, yes, sir.

MR. FELDEWERT: Object to the form of the question. He doesn't have the background to answer that question, and he's never applied for a comm agreement.

MR. PADILLA: I asked him in terms of the evidence presented here.

A. Yes, sir, a north-south --

EXAMINER EZEANYIM: You can't answer the question until I rule.

THE WITNESS: I'm sorry. Sorry, sorry.

EXAMINER EZEANYIM: The objection is overruled.

Ask that question in a different way. Otherwise, it's sustained, because I know what's going on here. Ask that question in a different way, so I can be -- you know, not be partial to somebody. I know what is going on.

So that concludes your cross-examination, right?

MR. PADILLA: Let me ask this real quick.

Q. (BY MR. PADILLA) Do you have an opinion as to whether it would be in the best interest of the federal government to form east-half proration unit?

A. Oh, yes, sir. It would bring in the south half of the section. And while I'm not a geologist or

anything like that, 100 percent of something is better than 100 percent of nothing.

MR. PADILLA: That's all I have.

MR. FELDEWERT: May I ask one more question?

EXAMINER EZEANYIM: Okay. I give everybody a chance.

RECROSS EXAMINATION

BY MR. FELDEWERT:

Q. Mr. South, if you proposed a stand-up well, what would be the proposed participation by the federal government?

A. The federal government?

Q. Uh-huh.

A. They would own 6.25.

Q. It would be half of your royalty, 50 percent?

A. Yeah. They would have to --

Q. Half?

A. Yes, half.

Q. To do a lay-down in the south half, they get their full royalty?

A. Yes, sir. But the problem on that is BTA has said they do not want to drill an east-west well, which would orphan that acreage.

Q. So the one that provides the largest federal

participation would be the lay-down, number one, correct?

A. Yes, it would, but --

Q. And if you did a stand-up well from Section 19 that was a mile and a half, the federal government would also get their full royalty. It would not be diluted by any fee acreage; is that right?

A. Yes, sir. But the problem on that is the working interest owner in the south half says they do not want to be in an east-west well, so this is potentially orphaning that.

Q. I agree with you. And so if you did a mile-and-a-half stand-up well in Section 19, in the south half of 18, you would accomplish two things. We would meet the objective of BTA, who wants a stand-up well, and the federal government interest is not diluted.

A. But the problem on that is you're not addressing the north-half interest. We are the dominant interest in the north half, and you have not proposed anything on that. That asset is worth millions to us.

Q. We have proposed a lay-down well, correct?

A. Yes. And your only option was for us to go nonconsent.

Q. You don't have to go nonconsent.

A. We don't want to drill the well.

MR. FELDEWERT: That's all the questions I have.

EXAMINER EZEANYIM: Interesting.

Are you done?

MR. FELDEWERT: I'm finished.

MR. PADILLA: I'm done.

EXAMINER EZEANYIM: Okay. Good. I hope you don't have any more witnesses --

MR. PADILLA: No.

EXAMINER EZEANYIM: -- because I know I have enough information.

CROSS-EXAMINATION

BY EXAMINER EZEANYIM:

Q. Okay. Would the orientation of the well make any difference in the overhead rates?

A. No, sir. And we had talked about that. We don't -- we will do any -- what Chevron, their overhead rates that they proposed, we hadn't seen those numbers beforehand. We had just offered those numbers because Chevron had agreed to that in another section.

Q. I thought -- I thought you arrived at that using COPAS. If I'm wrong, correct me, because it could be important if you're drilling a 160-acre. I think the overhead rates should be approximate, but what I have in

my notes is that they are not.

So my question is the orientation going to be a factor in how much overhead rates are charged by the operator?

A. Well, where those numbers came up -- Caza had done a study of how much the wells cost, and that was how they came up with those numbers, in a joint operating agreement.

Q. Okay. Why I'm asking that -- it's not your fault. Let me show you why I'm asking that question. If Chevron's application is approved, the overhead rate is 6,500 and 650. If yours is approved, it's 9,400. Why such a difference for similar wells? I know what the wells are. So why is that different? It's not for you to answer the question. So maybe I'll call the attorneys to tell me that, because I don't want you to be -- because, you know, we can go back to --

EXAMINER EZEANYIM: Okay. Now, for you, there are no questions. You may step down.

I said this yesterday when we started, about the project area. So after I talked about it, when we started this case. You brought it up now, about pooling the east half, and I said you can't pool a vacuum. And you can only pool a project area. And the only way you can pool a project area is when that

project area is formed.

And in the rules, there are -- wells form project areas. I never realized how were we developing that rule, and then finally the thing that was adopted was: A project area is an area that can be developed by a well. However, in that project area, you can even drill more wells. You can drill infills. I put that in the rules. But when you are trying to compose a new pool in a project area, you have to pool a project area that can be developed alone [sic].

So I think because Endurance didn't understand this, they wanted to pool the east half. But I don't think they can pool the east half. They can pool the east half-east half. So, I mean, if they were to be the operator, the east -- the west half of the east half will not be included even though they were asking for the east half. So it's going to be the east half-east half.

MR. PADILLA: That's acceptable to us.

EXAMINER EZEANYIM: That's what I was trying to say yesterday.

MR. RITTER: We understand.

EXAMINER EZEANYIM: I think people have not understood our Horizontal Well Rule, and I'm trying to use this opportunity to explain it. And you can start

with the docket if you want to pool -- in the east half-east half, there is nothing to pool. The OCD will say, Yeah, you can form it before you pool. If you start with the center, like -- it doesn't work that way. I said it yesterday, but I didn't recall until I read it again.

I wanted to make those points, that that would not make us continue this case because I know anybody can make that mistake.

So let's go on with this case. Because you know what, that might be a possibility in this case, because you guys can reach an agreement, unless you guys want to go to district court. From your compartment, you don't want to go.

So if you have any objection to that east half -- you mentioned it, but I think it's an honest mistake. The new rules have some implication. And so I'm going to take it as east half-east half. I wrote it down as east half-east half. That's where the well is located, and you want the compulsory pooling.

MR. FELDEWERT: Mr. Examiner, it has not been advertised for the east half-east half. The application is not filed for the east half-east half.

EXAMINER EZEANYIM: So what do you suggest, then?

MR. FELDEWERT: I think you ought to check with your Legal Department. I don't think this is legal. I don't think their application is approvable.

EXAMINER EZEANYIM: What?

MR. FELDEWERT: Their application is not approvable.

EXAMINER EZEANYIM: Well, I'm not an attorney, but I will check with them, as you said.

MR. PADILLA: Mr. Examiner, let me respond to that. All parties of interest have already been notified. There's been no one who has complained of an east-half proration unit. They've had notice of this hearing, and they could have raised this objection. This is a technical objection. We're willing to amend our application to include just the east half-east half. But all parties were notified of this application.

EXAMINER EZEANYIM: It's a legal issue. I thought it was a typographical error. I didn't think there was a technical issue involved. That's why I said that. But that's okay. I will check and then let you guys know.

Okay. Now, when we come to Endurance, the only person you want to pool is Chevron, right?

MR. PADILLA: That's it.

EXAMINER EZEANYIM: And vice versa? You're

only pooling Endurance?

MR. FELDEWERT: We are pooling the parties.

EXAMINER EZEANYIM: I mean in terms of working interest.

MR. FELDEWERT: Yes, the parties they represent.

MR. RITTER: There is another. Ray Westall.

EXAMINER EZEANYIM: Okay. It doesn't matter. But for you, only Chevron?

MR. PADILLA: Just Chevron.

MR. FELDEWERT: I will say, Mr. Examiner, Endurance doesn't have ownership. It's apparently Tritex and others, but we've identified who we need to pool.

EXAMINER EZEANYIM: But in my mind, Tritex is Endurance.

MR. FELDEWERT: As I understand it, yes.

EXAMINER EZEANYIM: I mean, that's why I assured that. Tritex is -- and I said that yesterday, that Tritex was Endurance, because if you look at that, you will see Endurance and Tritex are one and the same. Right?

MR. RITTER: Yes.

EXAMINER EZEANYIM: I'm going to take these

two cases under advisement.

Is there anything that would prevent me, Mr. Padilla and Mr. Feldewert, from doing so? I want to take them under advisement because it was two full days. Anything that would prevent me, apart from my checking with my legal people about the east half-east half? For me, I want to proceed, but you are disagreed. This is a contested case.

MR. FELDEWERT: No. I think that's part of the analysis when you take it under advisement, Mr. Examiner.

EXAMINER EZEANYIM: Is that what you implied? Okay. I'm going to take it under advisement.

Anybody have anything else to say, because I want to give everybody an opportunity to say something?

MR. PADILLA: Mr. Examiner, do you want a proposed order?

EXAMINER EZEANYIM: Yeah, I will. Yeah, because as you know, I'm very, very swamped from both of you, for one person. Tell me why it should be in Section 18. I think that would be very, very -- so I can -- as I'm looking at the engineering portion of it, you know, the geology portion. Actually, this case is brought out on geology mainly, because geology is how

you drill to assess most of the -- that's my point. There are two key factors: Permeability and the fracture orientation in Section 18, right?

So at this point -- where is my docket? At this point, Case Numbers 15074 and 15084 will be taken under advisement, and finally we are done.

(Case Numbers 15074 and 15084 conclude, 3:25 p.m.)

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

_____, Examiner
Oil Conservation Division

STATE OF NEW MEXICO

COUNTY OF BERNALILLO

CERTIFICATE OF COURT REPORTER

I, MARY C. HANKINS, New Mexico Certified Court Reporter No. 20, and Registered Professional Reporter, do hereby certify that I reported the foregoing proceedings in stenographic shorthand and that the foregoing pages are a true and correct transcript of those proceedings that were reduced to printed form by me to the best of my ability.

I FURTHER CERTIFY that the Reporter's Record of the proceedings truly and accurately reflects the exhibits, if any, offered by the respective parties.

I FURTHER CERTIFY that I am neither employed by nor related to any of the parties or attorneys in this case and that I have no interest in the final disposition of this case.

Mary C. Hankins

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