STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

ORIGINAL

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

CASE NO. 14773

APPLICATION OF AMENDED APPLICATION OF CONOCO PHILLIPS TO TERMINATE THE LAJARA CANYON-GALLUP POOL AND FOR AN EXCEPTION TO RULE 19.15.12.9 NMAC TO PERMIT DOWNHOLE COMMINGLING OF PRODUCTION FROM GALLUP FORMATION, NOW MANCOS, WITH DAKOTA PRODUCTION, RIO ARRIBA, COUNTY, NEW MEXICO,

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

DOCKET NO. 36-11

BEFORE: TERRY G. WARNELL, Hearing Examiner
DAVID K. BROOKS, Legal Examiner

DECEMBER 15, 2011

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, TERRY G. WARNELL, Hearing Examiner, and DAVID K. BROOKS, Legal Examiner, on THURSDAY, DECEMBER 15, 2011, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South Street Francis Drive, Room 102, Santa Fe, New Mexico.

REPORTED BY: Lisa Reinicke
PAUL BACA PROFESSIONAL COURT REPORTERS
500 Fourth Street, NW, Suite 105
Albuquerque, NM 87102

A P P E A R A N C E S

For the Applicant:

KELLAHIN AND KELLAHIN
706 Gonzales Road
Santa Fe, New Mexico 87501
(505) 982-4285
By: W. Thomas Kellahin

I N D E X

EXAMINER WARNELL: We'll go ahead and just take the cases in order as they are on the docket. We'll call case number 14773, amend application of Conoco Phillips to terminate the LaJara Canyon Gallup Pool and to expand the Basin Mancos Gas Pool to include all acreage included in the LaJara Canyon Gas Pool and for the exception to Rule 19.15.12.9 NMAC to permit downhole commingling and production from Gallup Formation, now Mancos, with Dakota production, Rio Arriba, New Mexico.

Call for appearances.

MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin with the Santa Fe Law Firm of Kellahin & Kellahin appearing this morning on behalf of the applicant, and I have three witnesses to be sworn.

EXAMINER WARNELL: No other appearances? Would the witnesses please stand?

[Whereupon the witnesses were duly sworn.]

MR. KELLAHIN: Mr. Warnell, Conoco Phillips and I and the three witnesses are here before you this morning to terminate the LaJara Canyon Gallup Pool and to merge that acreage into the Basin Mancos Pool and to accomplish some commingling approvals for the wells involved. While the concept is simple, the details are a little complicated and so you'll have a landman to

orient you as to the specifics of the two pools, the LaJara and the Basin Mancos.

The dilemma that they're faced with is how to develop what was called then the Gallup and which we're going to present to you as a redesignation or a nomenclature change so that when we talk about the Gallup we're in fact talking about all the members of the Mancos. The geologic witness will take you through that analogy so that you'll see how he has handled the stratographic nomenclature for the Mancos and historically how that area has been misdescribed as the Gallup.

We will then have an engineering witness that will go through the details of why it's no longer possible to develop the Dakota as a standalone wellbore so that you'll see the necessity to continue the process of commingling. It's a tri-commingling with the Mancos, the Mesa Verde, and the Dakota. And in doing that exercise then he'll run through the various components on the division form C107A and hit all the pegs that we believe necessary for you to give us approval for commingling within the context of this well.

Our first witness is Mr. Richard Corcoran. Mr. Corcoran is a landman with Conoco Phillips.

EXAMINER WARNELL: Okay.

RICHARD CORCORAN

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

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

A. My name is Richard Corcoran, and I am a landman with Conoco Phillips. And what we have before us and have put in your hand is an exhibit book. If you would turn to the first --

Q. Well, let me ask you a few questions.

A. Sure.

Q. Did you assume the responsibility for the group to compile all the land regulatory geologic and engineering exhibits into one book?

A. I did.

Q. And on prior occasions have you testified as a petroleum landman and had those qualifications accepted by the division?

A. I have.

Q. And as part of your responsibilities for this application, are you the principal landman with Conoco Phillips involved in the LaJara Canyon Gallup Pool?

A. That's correct. I am.

Q. And you have made yourself familiar about the ownership involved?

A. I am familiar with the ownership involved.

Q. And you're knowledgeable about the unit involved, and this is a federal numbered unit?

A. Yes, it is, a 35.

Q. And you're knowledgeable about the basic components of the Basin Mancos orders and the LaJara Canyon Gallup Pool rules?

A. I am familiar with them, yes.

Q. And it was your responsibility to assimilate the parties to be notified and execute the notice?

A. I did oversee that.

MR. KELLAHIN: We tender Mr. Corcoran as an expert petroleum landman.

EXAMINER WARNELL: So recognized.

MR. KELLAHIN: Thank you.

Q. (By Mr. Kellahin) Mr. Corcoran, in order to orient the Examiner and Mr. Brooks, if you'll turn to tab number 1 with me.

A. Yes. What this is, is a plat depicting where --

Q. We'll have to turn past the cover page. So you're looking at Exhibit 1B?

A. Correct, page 1B. And what we're looking at is a plat that depicts a number of the pools in the

northeastern quarter of the basin. This, in a red outline circle, is the LaJara Canyon Gallup Pool. It's located approximately 15 miles south of the state line border with Colorado, about six or seven miles west of the Jicarilla Nation and maybe 15 miles east of the Navajo Dam. It sits out there pretty much all by itself, as you can see.

Q. Before we go into the specific details, Mr. Corcoran, let's explain to the Examiner some of the basic components of what you're seeing as problems and what you perceive as solutions. Let's start first with current status. Do you have Dakota wells in the pool, in the LaJara Canyon Pool?

A. In the LaJara Pool itself, yes. There are Dakota and Mesa Verde Wells.

Q. For those Dakota wells that currently exist, what is the spacing pattern associated with those wells?

A. It's the Blanco Mesa Verde and the Basin Dakota. Both are on 320 acres allowing up to four wells per 320 acres.

Q. When we look specifically at the LaJara Canyon Gallup, what is the spacing associated with the Gallup portion?

A. The Gallup portion is spaced in this particular pool at one well per 160 acres.

Q. Therein lies the dilemma, right?

A. Correct. Therein lies -- we're left with a situation where we cannot maximize the number of wells that would be able to draw from this pool, this particular formation, with it being one well per 160 rather than four wells per 320.

Q. With the aid of the geologist and an engineer, have you come to a conclusion about a proposed solution for the Gallup in this area?

A. Yes. The solution we think is the most beneficial to all parties involved would be for us to be allowed to develop this on the same basis as the Mesa Verde and the Dakota, that being four wells per 320 acres.

Q. Would that be consistent with the current Basin Mancos Gas Pools?

A. It would be exactly as are allowed under the terms of the Basin Mancos Pool.

Q. To establish that, what do we need to do with the LaJara Canyon Gallup Pool?

A. What I believe is the best thing to do here is to vacate this pool in its entirety and add it to the Basin Mancos Pool.

Q. And analyzing that potential solution, have you examined the situation of ownership of all categories of

owners --

A. I have.

Q. -- operators, working interests, royalty, and overrides?

A. Yes, I have.

Q. And is there any problem if we reorient these spacing units and change them from 160s to 320s in the Gallup?

A. No. As it turns out Conoco Phillips owns presently 100 percent of both of the existing wells within this pool. And we'd also own 100 percent of the changed spacing unit to 320. So in both cases our interests would remain exactly the same, that is 100 percent of the working interest and the royalties and override royalties would remain exactly the same, so it's very convenient.

Q. Let me ask you this about vertical separation of ownership, when we deal with the entire Mancos interval from the base of the point lookout, which is the base of the Mesa Verde to the top of the Greenhorn?

A. Correct.

Q. Which is slightly above the Dakota, that entire interval of Mancos, collectively, can we deal with that as a single ownership?

A. Yes, we can. Yes, and that is owned 100 percent

by Conoco Phillips, the applicant here.

Q. The fact that the Gallup member of the Mancos has been associated with this pool name for LaJara Canyon Gallup is of no consequence when we look at the entire ownership spectrum for what we're calling the Mancos intervals?

A. No. Actually, as it turns out, we own from the surface through the base of the Dakota in all of these -- in both of these wells both in the present 160-acre spacing and in the spacing that would result if you saw fit to allow us to develop it on 320 acres.

Q. Let's turn now, Mr. Corcoran, to exhibit tab number 2. Look past the cover page, which is 2A, and look at what is marked as 2B as a more specific locator map. Before we start talking about that let me ask you some basic questions.

A. Okay.

Q. How do we look at this map and determine where the San Juan 30 and 5 unit is?

A. The 30 and 5 unit is depicted by the green outline, and it's a township and range unit that basically covers the entire township 30 north, 5 west.

Q. Am I correct in understanding this display that the LaJara Canyon Gallup Pool is entirely encompassed within the San Juan 30 and 5 unit?

A. That is correct.

Q. How have you outlined the current configuration of acreage associated with the LaJara Canyon Gallup?

A. I tried to depict that in green, also, covering the southwest quarter section 25 the present spacing unit for that well, the number 30-5 unit, number 91, the southwest quarter of section 25, and it is depicted in green. Likewise, in the southwest quarter section 34 there is another 160-acre spacing unit depicted in green indicating the present day spacing units for the two existing Gallup wells.

Q. Now, have you shown us the outline of the current configuration of the LaJara Canyon Gallup Pool?

A. That, on this plat, is depicted in red and it covers the southwest quarter section 25, the south half of section 26, the south half of 27, and the west half of 34. And it is outlined in red and it encompasses 1100 acres.

Q. Within the display you have identified an area cross hatched in black or dark blue, and it's captioned BP America?

A. Yes.

Q. What's the purpose of that?

A. That's depicting the only acreage that we don't own 100 percent in the pool that's owned by another

company, and that being BP America.

Q. BP America would be affected only with regards to future wells drilled in section 27 or 26?

A. That is correct.

Q. So the reorientation or rededication of acreage for the two existing Gallup wells doesn't impact anybody?

A. That's exactly right, yeah.

Q. Now, have you notified all the royalty and overriding royalty interest owners involved in the existing wells?

A. Yes, we have. We've notified all of those folks by return receipt requested, which is in a later exhibit.

Q. In fact, did you notify everybody within the pool?

A. That's correct. I notified everybody within the pool.

Q. And you've received no objection?

A. No objections.

Q. Before we leave this display, Mr. Corcoran, would you show the Examiner what you proposed to do for acreage rededications starting first of all with the number 91M well, section 25?

A. Yes. On this plat that should be indicated by a

proposed spacing unit block. It indicates covering the south half of section 25 and is depicted with a dashed line. The same is true for the other existing Gallup well, which is the 102 located in the southwest quarter section 34. We would ask that the new spacing unit be the south half of section 34, again, depicted with a dashed line.

Q. And, again, the rededication of this to larger spacing units affects no other working interest owners other than Conoco Phillips?

A. That's right. We are the only operator within the pool and we own 100 percent of the proposed spacing units.

Q. As part of your preparation you have reviewed a series of division orders. You have looked at the Basin Mancos order and the LaJara Canyon Gallup order?

A. Yes, I have.

Q. Are those orders contained within the exhibit book?

A. They are contained under Exhibit 4.

Q. Let's turn to exhibit tab 4.

A. There are two orders in there for ready reference, and they are the LaJara Canyon order, which is our 10600.

Q. Without reading the specifics of the LaJara

Canyon, can you describe for us the type of pool this is? Is this an oil pool or a gas pool?

A. No. It is definitely a gas pool. And it was set up in 1996, and it encompassed all of 160 acres, being the southwest quarter, section 25, 30 north, 5 west.

Q. And your research indicates that the division's district office in Aztec has always carried these two wells associated with the LaJara Canyon Gallup Pool as gas wells in that pool?

A. That's correct.

Q. And the association has been on spacing units of 160 acres?

A. Its entire life.

Q. As best your research indicates, this was accomplished through a nomenclature change by the division?

A. Of their volition, that's correct.

Q. It was not taken by direct action of Conoco Phillips or Burlington?

A. No, sir. It was the commission that brought the case.

Q. Let's turn now to the next order that's associated with Exhibit Tab Number 4, and if you'll turn to page 4E, what have you placed in the exhibit book at this point?

A. That is order number R12984, and it is the Basin Mancos Pool, which was brought by your Aztec office in the year 2008 in an effort to try and make sense out of the Mancos pool.

Q. Have you reviewed this matter?

A. I have.

Q. Who is the principal witness for the division that sponsored this application?

A. That was Steve.

Q. Haden?

A. Haden. I'm sorry. Steve Haden.

Q. Did Mr. Haden, in processing this order, ask the division to do something with regards to the LaJara Canyon Gallup Pool?

A. Yes, he did. At the time he formed -- or this Basin Mancos was formed he contracted certain pools and he extended other pools in order to honor the existing wells that were out there. The existing Gallup wells that were out there, he did not want this pool to interfere with. So some of those pools were expanded and some were contracted.

Q. And when he got to the LaJara Canyon Gallup Pool, what did he do in order to link the two existing Gallup well spacing units into a single pool?

A. When the pool, the LaJara Canyon Gallup Pool, was

originally formed it was formed on the 160 acres, and that was the entire pool. At this time, in 2008, when the Basin Mancos pool was formed, he expanded the LaJara Canyon Pool to cover the south half of section 26, the south half of 27, and the west half of 34, which was that previous plat under Exhibit 2. He went from the southwest of 25 and connected it all the way down to the southwest of 34.

Q. So when you go back and look at tab 2 in Exhibit B, the area that's not squared off in the green, that connecting orange or reddish colored line is the area that Mr. Haden added to the pools to link the acreage together?

A. That is correct.

Q. There was no additional Gallup wells to be associated with?

A. None.

Q. As part of the division Mancos order, did the division go ahead and act on Mr. Haden's application portion that asked for a referent case for downhole commingling of the Mancos?

A. No, they did not. There was not enough data provided.

Q. As part of entering that order, did the division and Mr. Haden testify to the vertical limits associated

with the Basin Mancos Pool?

A. Yes, he did. And he made that from the base of the point lookout, which is commonly referred to as the base of the Mesa Verde to the top of the Greenhorn formation.

Q. And is that consistent with how we're defining the current vertical limits for the LaJara Canyon Gallup Pool?

A. It is. It's the same.

Q. So the merger of the acreage associated with the LaJara Canyon Gallup into the Basin Mancos is not going to create a change in the nomenclature?

A. That's correct.

Q. And let's turn to tab number 5, Mr. Corcoran. If you turn past the cover sheet, tab 5A, and start with 5B, what have you put in the exhibit book at this point?

A. This is an affidavit that in fact the application was mailed by me on a given date, on that date.

Q. And as we turn past the certification on 5B then you've attached the application, the notice letter, and all the appendages to the application. And you finally get down to what is marked as 5L?

A. Correct.

Q. And when we turn to exhibit page 5L, it's a tabulation of names and addresses.

A. Of all the parties involved.

Q. Are you satisfied that this is a reliable list?

A. Well, on the next page there was one party added to this list, and that was BP.

Q. So you supplemented this list and notified all the parties?

A. That's correct. And page 6B depicts all the parties that were contacted and the results of those contacts.

Q. And as we turn to tab 6 and look through all the attachments here, can you summarize the end results of your efforts to obtain notification of all the parties that might be affected?

A. I can. If you'll go to page 6B, the last column on the right depicts all of the parties that received notification. And everyone was notified, with one exception, Pine Cone Properties, who was an overriding royalty owner, refused to pick up their mailing. There is also an E. Tate Maldrem that did in fact pick up their mailing and the green card was returned but it was returned too late to get it in there, so I just actually put an X there later.

BP did receive this information both verbally and through the mail but did not return the green card.

Q. Have you had verbal conversations with

representatives of BP?

A. I have. I have contacted them verbally and advised them of what our plans were, and there were no objections at that point.

Q. Your final exhibit, Mr. Corcoran, I don't want you to read this, but could you turn to tab 9 and turn past 9A and look at 9B. What have you tabulated here for us?

A. Just some of the high points in a list of events that took place to prepare for this.

Q. In your opinion, Mr. Corcoran, if the division and the Examiners approve this application will it afford an opportunity for Conoco Phillips to streamline the regulatory process associated with the production of additional wells in the Gallup formation?

A. It will, and it will alleviate unnecessary work on both the commission's part and the applicant's part.

Q. From your perspective as a landman and an individual involved in the regulatory process, are you satisfied that the approval for the downhole commingling, the tri-mingling of these three zones, the Mancos interval, the Mesa Verde, and the Dakota, can be accomplished from your point of view?

A. Absolutely.

MR. KELLAHIN: Mr. Examiner, that concludes

my examination of Mr. Corcoran. We move the introduction of Exhibits 1, 2, 4, 5, 6, and 9.

EXAMINER WARNELL: Exhibits 1, 2, 4, 5, 6, and 9 are admitted.

Mr. Brooks, any questions?

[Exhibits 1, 2, 4, 5, 6, and 9 admitted.]

EXAMINER BROOKS: Well, I sometimes disagree with people about colors, but the line that I take it on Exhibit 2 outlines the LaJara Canyon Gas pool looks orange to me --

MR. CORCORAN: It is.

EXAMINER BROOKS: -- rather than red.

MR. CORCORAN: It may have printed that way, yes.

EXAMINER BROOKS: Okay. There are three well symbols within the acreage shown as BP. Are those wells flooded and abandoned?

MR. CORCORAN: No. They're Mesa Verde Dakota.

EXAMINER BROOKS: None of those wells is completed in the Mancos?

MR. CORCORAN: No, sir.

EXAMINER BROOKS: And is the same thing true of the wells shown over in the southwest quarter of section 27?

MR. CORCORAN: That is correct. There's no Mancos or Gallup in those wells.

EXAMINER BROOKS: And, likewise, the well in the northwest quarter of 34?

MR. CORCORAN: Correct.

EXAMINER BROOKS: The only wells that are producing from the LaJara Canyon Pool are the number 102 and the number 91?

MR. CORCORAN: That is correct, Mr. Brooks.

EXAMINER BROOKS: Okay. And have you heard anything from BP about this?

MR. CORCORAN: I did talk to their landman and advised him what we were doing, but it was on a verbal -- it was in a phone conversation. And he said he thought that they would be in support of it but he wasn't prepared to do that at that point in time.

EXAMINER BROOKS: Okay. I think those are my only questions.

EXAMINER WARNELL: All right. Well, on that tab 2 that we're looking at, down in section 34, the northeast quarter.

MR. CORCORAN: Yes.

EXAMINER WARNELL: Can you tell me about those two wells there?

MR. CORCORAN: Those two wells are Mesa

Verde-Dakota wells. They're at least Dakota wells. They may not be Mesa Verde wells. Let me look at the -- yeah, they're just Dakota wells. And they have no Mancos or Gallup production from them. And you can see they're on 80-acre spacing.

EXAMINER WARNELL: And are those Conoco Phillips wells?

MR. CORCORAN: They are. We are the operator of the entire unit, which is basically the entire township. So we operate basically everything you see here in the 30 and 5 area. Now, that's not true to the south or to the east. But that's outside of the one-mile area.

EXAMINER WARNELL: Okay. I have no further questions. You can call your next witness.

MR. CORCORAN: Thank you.

MR. KELLAHIN: Mr. Examiner, at this time we'll call Mr. Zack Swaney. Mr. Swaney is a petroleum geologist and resides in Farmington, and is a geologist with Conoco Phillips.

ZACK SWANEY

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Swaney, sir, would you please state your name and occupation?

A. My name is Zack Swaney. I'm a geologist with Conoco Phillips.

Q. On prior occasions, Mr. Swaney, have you testified and been qualified as an expert geologist before the division?

A. I have not.

Q. Summarize for us your education.

A. I received my Bachelor's from the University of Arkansas.

Q. In what year?

A. 2003.

Q. Do you have other degrees?

A. Yes. In 2005 I received my Master's from Northern Arizona University in Flagstaff.

Q. And subsequent to graduation and obtaining your degrees, have you been employed as a petroleum geologist?

A. Yes. Directly upon receiving my Master's I went to work for Conoco Phillips.

Q. When we look at this application and your work, what have you focused on?

A. I have been the geologist over the Mancos

since -- well, for about a year and a half now, a little over a year and a half.

Q. Would your responsibilities include the Gallup wells in what we call the LaJara Canyon Gallup Pool?

A. They do.

Q. Is your knowledge with regards to that area inclusive of Mesa Verde and Dakota production as well?

A. Yes.

Q. So when we look at the stratographic cross section for the entire intervals from the surface to the base of the Dakota that's something for which you have knowledge?

A. I do.

Q. For your presentation today, have you compiled certain exhibits to illustrate the relationship of the Gallup member of the Mancos for the Examiner?

A. Yes.

Q. In addition, are you able to summarize for him how the Gallup and the LaJara Canyon compares to or is different from other Gallup producing areas in the basin?

A. Yes.

Q. Have you prepared a cross section that will link your database down to the specifics of the LaJara Canyon Pool?

A. I have.

Q. Well, let's start with that presentation then.

A. Okay.

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

EXAMINER WARNELL: Mr. Swaney is so recognized.

Q. (By Mr. Kellahin) Mr. Swaney, if you'll turn to tab 3. Turn past the cover sheet, which is marked 3A. And before we talk about each of these displays set up the proposition for us. I want you to explain to the Examiner and to me how you've approved analyzing the Mancos and its relationship with the Dakota.

A. Okay. Through well log correlation is the main method, so I'm looking for certain log signatures that are present from well to well to well to define the stratigraphy within the Mancos. That is the main method that applies here.

Q. As you complete that work, can you come back to the LaJara Canyon Gallup Pool and show us where those wells fit within your stratographic nomenclature tabulation? Where would that fit, the Gallup wells in the LaJara Canyon?

A. Yes. The perforations in those wells are made within the El Vado interval slightly above that and

slightly below that. So in the very bottom of the upper Mancos and in the very top of the Basal Nibrera. And that's specific to the well number 102, I believe.

Q. When the division and operators have characterized the Gallup in this area, what are they really doing? Is that true Gallup or is it some other portion of the Mancos?

A. Okay. The term Gallup is often misapplied more often than not, in fact, to mean basically the Nibrera interval, the El Vado, as well as the Basal Nibrera.

Q. In a basin-wide sense, walk us through how we would find something as unique as specific Gallup oil production. How do you do that?

A. How do you find --

Q. Where is it?

A. Largely to the south. There is a progression from north to south in the basin to dry gas to wet gas to oil. And in the oil rim there are many Gallup, historically called Gallup-producing intervals. Most of those are the Tocito sands, which are within the Basal Nibrera section. And there are also pools that are within the El Vado that are dominated by natural fracturing allowing that production to occur.

Q. When you move into the LaJara Canyon Gallup Pool in that area, are you dealing with an oil pool or a gas

pool?

A. Gas.

Q. Is it dry gas?

A. It is dry gas.

Q. Do you see any problems geologically in commingling Mesa Verde, Mancos, and Dakota production?

A. No, I do not.

Q. And in this area what do you target as Mancos' potential in this area?

A. Largely it's the El Vado. There are no Tocito sands within the Basal Nibrera and this portion of the basin, so you would not be looking for those. And the El Vado is what we have had success completing.

Q. Have you recently shared this Mancos stratographic nomenclature information with technical people with BP America?

A. Yesterday morning, in fact.

Q. Have you had any disagreement with how you have defined the Mancos here?

A. No. No. The words we use to call the different intervals tend to differ, but in terms of our stratographic understanding in the sequent stratographic sense, we are completely aligned.

Q. Let's turn past exhibit page 3B and have you identify and describe for us 3C. What is this?

A. 3C is a type log from the Lindrith unit.

Q. And why are we looking at it?

A. The point here is to show the presentation of the Mancos stratigraphy in different parts of the basin. So we'll talk about what it looks like in Lindrith to the southeast. The next log will be from Juerfeno due west of that. And then we'll go up to the north in the dry gas area and look at a type log from Allison.

Q. Again, now where's the Lindrith area?

A. The Lindrith unit is at 23 and 2 and 24 and 2. No, I apologize. 24 and 2 and 3. That's what it is.

Q. So when we move past the log for Lindrith we look at a Juerfeno-type log?

A. Yes.

Q. Where are we in relation to the LaJara Canyon Gallup at this point?

A. We are to the southwest.

Q. And what do you find when you examine the Mancos portion of the well logs in the Juerfeno area?

A. In the Juerfeno we find that a key point for understanding the difference between true Gallup and the Nibrera, essentially the boundary between the Carlisle and the Nibrera, is the location of the Basal Nibrera on conformity, here shown as a purple wavy line across the log.

At Lindrith -- we back up one. At Lindrith the unconformity is quite high in this section relative to where it normally occurs in the basin. It's just below the base of the El Vado, so there is little to no Basal Nibrera section here. And here what we would normally target is the El Vado A, B, and C highlighted in green.

When we go to Juerfeno the unconformity is now a little bit lower stratographically in the section. We have a Basal Nibrera section and a Gallup equivalent both occurring. Within the Basal Nibrera there is a Tocito sand, and historically that has been what dominates production from what's been called the Gallup interval that I am calling the Basal Nibrera here.

Above that is the El Vado. And here, again, the El Vado A, B, and C would normally be our targets. If we go one more page to 3E, this is moving to the north and the Allison unit, which is directly to the west of the San Juan arm of the Navajo Lake. Here the unconformity has eroded completely down through the Gallup equivalent section. And this is the way it occurs through most of the basin and it occurs very similarly to the LaJara Canyon.

The Basal Nibrera here is a good bit thicker but it contains no Tocito sands, similar again to LaJara. In this section the pay occurs a little differently.

What's labeled El Vado at the very top there with the gray crossover between the red bulk density line and the blue deep induction curve, that gray is sort of what we key on to show peg. And here it would be the upper El Vado and the El Vado C; A and B not really being something we'd be all that interested in.

Q. Is it appropriate in all these examples to use the base marker for the base of the Mancos as being the base of the Greenhorn?

A. The top of the Greenhorn.

Q. The top of the Greenhorn.

A. Yes.

Q. That is the marker point that will give us the bottom set for our Mancos?

A. Yes. And it is an excellent marker. It's one that you cannot miss when you are correlating.

Q. Let's turn now to Exhibit 3F. What have you shown here?

A. This is a set of bullet points generally describing the way I look at the Mancos. Basically all of our targets currently are within the El Vado, which describes the siltier section with resistivity, with higher resistivity generally in the middle of the Mancos and explicitly excludes the Tocito sands within the Basal Nibrera.

There are other possible pay zones in the upper Mancos. These are not continuous, so they are looked at as a secondary target. The El Vado is correlable generally across the basin. Other future targets, possibly the Juan Lopez and lower Carlisle, we know those to be hydrocarbon bearing. But at this point we have significant difficulties in completing them and so we haven't been successful in consistently being able to make wells in those lower Mancos sections.

But if we unlock that technology, if we can figure that out, that is a future target.

Q. Let's take the information you've now provided us in your explanations under exhibit tab 3 and have you relate this to the cross section so we can link it directly back to the wells associated with the LaJara Canyon Pool. What tab is that?

A. That would be 10B, tab 10, Exhibit 10B.

Q. Give us a moment to get there. Before you describe the cross section, Mr. Swaney, would you show us why -- on the lower right portion is a locator --

A. Yes.

Q. -- for your cross section?

A. That's correct.

Q. Explain to us why you've chosen this particular linking for the cross section.

A. I wanted to include wells that were completed, so the two LaJara Gallup wells. And I also wanted to show nearby wells to show the consistency of the interpretation.

Q. Walk us through what we should understand about the cross section.

A. Well, the first thing to understand, I would think, is that the stratigraphy here is no different than I described largely in the other portions of the basin. In detail there are differences, but you can carry these surfaces over great distances and they are essentially equivalent.

Another point I would make is that the unconformity here is quite low, it is just about the top of the Juan Lopez. And that basically means that we have little to absolutely no Gallup equivalent section, that the elevated resistivity is essentially all within the Nibrera section.

A third point I would make is that there are no Tocito sands here to aid in production. One of the classic drivers of Gallup production, and Gallup as its historically been defined was the Tocito sand. Here we do not have that. We also do not have the extensive amount of fracturing that exists. For example, the west Lindrith Gallup Dakota pool, there we don't have Tocito

sands but we do have extensive fracturing within the El Vado section that allows hydrocarbons to flow into the wellbore. Here we don't have that same permeability system as we do down there. So we're lacking both of the historical drivers for production is the bottom line of what I'm trying to say.

Q. From a geologic perspective do you see any reason that should preclude the division from terminating the LaJara Canyon Gallup Pool and assimilating that acreage into the Basin Mancos Pool?

A. None whatsoever.

Q. No problem?

A. No problem at all.

MR. KELLAHIN: That concludes my examination of Mr. Swaney. We move the introduction of his Exhibits 3 and 10.

EXAMINER WARNELL: Exhibits 3 and 10 are admitted.

Mr. Brooks, any questions?

[Exhibits 3 and 10 admitted.]

EXAMINER BROOKS: Where you've identified what you call the Gallup equivalent, that is below this unconformity that you mentioned, right?

THE WITNESS: That is correct.

EXAMINER BROOKS: Is that the level where

Gallup comes -- production comes from where there is Gallup production? I'm a little confused by you saying the Gallup is considered equivalent to the Nibrera and the El Vado.

THE WITNESS: Correct. The misapplication of the term Gallup comes from early correlations in the basin. That essentially was what was done, cross sections were drawn from where the Gallup is truly Gallup, say Gallup, New Mexico, all the way into the basin. And when you look at the well logs and their signature, if you don't recognize that there's an unconformity there it's very easy to try to draw the Gallup, the true Gallup as the top of the El Vado or the top of the Nibrera, same surface. And so that was before the recognition of the unconformity. And also before the recognition of the unconformity were the formations of a lot of the old Gallup pools.

And so at the time it was understood that was Gallup. But then the reinterpretation was made recognizing the unconformity that then caused complications in terms of trying to understand true Gallup versus what industry has called Gallup through the history of the San Juan Basin.

EXAMINER BROOKS: Well, the El Vado and the Nibrera, those are the areas you're concerned with,

right?

MR. SWANEY: That is correct.

EXAMINER BROOKS: And are they productive of oil in some places?

MR. SWANEY: They are.

EXAMINER BROOKS: But not, of course, in the area where you're concerned with here?

MR. SWANEY: Not in the LaJara, no.

EXAMINER BROOKS: And in the LaJara, the only thing you have there is gas, right?

MR. SWANEY: That's right.

EXAMINER BROOKS: Do you consider them not to be stratographically equivalent where the Gallup is productive; is that correct?

MR. SWANEY: I would have to say yes and no. Most, if not all -- well, with the exception of one pool, which would be the top of the Tocito pool, all of the rest of those pools are either Basal Nibrera or El Vado. So there is only one area I can point to that my interpretation would have as a truly Gallup productive sand. All of the rest of the production in the San Juan Basin from this interval is Nibrera.

EXAMINER BROOKS: And how far away are we from areas where Gallup oil production -- where what's called Gallup oil production is occurring?

MR. SWANEY: What's called Gallup production or what I interpret it as?

EXAMINER BROOKS: Well, I'm asking now about what's called Gallup production.

MR. SWANEY: Okay, what's called Gallup. Quite a distance. I'd hesitate to offer a mileage.

EXAMINER BROOKS: Well, you have a plat of the entire -- of a large area of the basin here, do you not, on Exhibit 1?

EXAMINER WARNELL: Which tab are we looking at?

EXAMINER BROOKS: The nearest pool you show going to the south. And you said the oil production was to the south, right?

MR. SWANEY: That is correct.

EXAMINER BROOKS: The nearest Gallup pool you show to the south looks like it's the Munoz Canyon Pool?

MR. SWANEY: Yes.

EXAMINER BROOKS: And then over to the southeast you show the Chosa Mesa Gallup Pool.

MR. SWANEY: Uh-huh.

EXAMINER BROOKS: Well, no. I guess the nearest Gallup pool is the Campo Gallup.

MR. SWANEY: Yes.

EXAMINER BROOKS: But that's a gas pool, right?

MR. SWANEY: Yes.

EXAMINER BROOKS: And the Chosa Mesa is a gas pool?

MR. SWANEY: Yes.

EXAMINER BROOKS: What about that Munoz Canyon, is that an oil-bearing area?

MR. SWANEY: I don't know exactly where the line is. It would be a richer gas but not an oil.

EXAMINER BROOKS: Okay. And then down where you've got the South Blanco Tocito oil pool, would that be in the oil zone, the oil area?

MR. SWANEY: That's getting very close to where we interpret the boundary between the wet gas systems and a true oil system, so it's on that boundary.

EXAMINER BROOKS: And the farther north you go the less likely you are to find oil; is that accurate?

MR. SWANEY: Yes, at least to the New Mexico line, the New Mexico/Colorado line.

EXAMINER BROOKS: Okay. Thank you.

EXAMINER WARNELL: Let's go to the cross section there in tab 10. On the first log and the last log on that cross section, I guess those are

perforations there?

MR. SWANEY: Yes, the pink in the middle track.

EXAMINER WARNELL: Okay. And the other two wells in the middle of the cross section, they're not perforated at all or producing?

MR. SWANEY: That is correct. They are not.

EXAMINER WARNELL: And then we have your gamma ray and deep induction, I guess, huh?

MR. SWANEY: That is correct.

EXAMINER WARNELL: I have no further questions. Thank you.

MR. SWANEY: Thank you.

MR. KELLAHIN: Mr. Examiner, we'll now call Mr. Dryonis Pertuso. Mr. Pertuso is a petroleum engineer with Conoco Phillips in Farmington.

DRYONIS PERTUSO

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

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

A. Dryonis Pertuso, senior reservoir engineer.

Q. Mr. Pertuso, have you testified before the

division on prior occasions?

A. I haven't.

Q. Would you summarize for the Examiner your education?

A. Sure. I received my degree in petroleum engineering from the Central University of Venezuela in 2004. I also got my Master's from New Mexico Highlands University in 2011. I have been working with Conoco Phillips since 2006. Industry experience is seven years.

Q. As part of your responsibilities for Conoco Phillips, have you been involved with the team in providing the reservoir engineering and production engineering aspects of the LaJara Canyon application?

A. I have.

Q. And you're familiar with these wellbores?

A. I am.

Q. Have you reviewed the procedures involved with the technical portions of the down commingling procedures?

A. Yes.

Q. Are you familiar with the spinner method of gas allocation that you're proposing?

A. Yes.

Q. And that work product is presented by you in this

exhibit book?

A. It is.

MR. KELLAHIN: We tender Mr. Pertuso as an expert reservoir petroleum engineer.

EXAMINER WARNELL: So recognized. I'm smiling because the experts get younger and younger. Welcome. I'm glad both of you are here, and I hope your first experience with OCD is somewhat favorable.

MR. PERTUSO: Thank you.

Q. (By Mr. Kellahin) Mr. Pertuso, let's to turn to Mr. Swaney's structural components here under tab 3. He has gone through these type logs and he has come up with a nomenclature definition with the various members of the Mancos.

A. Yes.

Q. Do you agree with Mr. Swaney as to the nomenclature involved in what we're doing?

A. Yes, I do.

Q. And it's consistent with your understanding of how you've applied the geologic information to your engineering work?

A. Yes.

Q. Let's go to the back of the book now and start with tab 11. If you'll turn past 11A, 11B is a cover sheet, and if you go past 11B we're going to start with

11C. Before we talk about the specifics of the exhibit, from an engineering perspective, what are you trying to accomplish with this application?

A. With dissolution of the LaJara pool it will allow us to enhance an increment, the recovery from the Mancos in this area. What we have seen is that the recovery from these existing wells in Gallup is very small. The actual area that these wells are draining is actually less than 10 acres.

Q. So when you get to your conclusion are you able to conclude that it's economically appropriate to drill more stand-alone Gallup wells?

A. It is not.

Q. And how would you have to do this?

A. If we are to recover these resources economically, we're going to have to combine that with Mesa Verde and Dakota doing tri-mingle wells. Otherwise it won't be economic to drill Mancos wells based on current gas prices and the cost of drilling a well.

Q. Based upon your analysis, do you find any engineering reason not to tri-mingle production in this area from the Mancos, the Mesa Verde, and the Dakota?

A. No, I don't.

Q. You see no limitations?

A. No limitation.

Q. Once you've done your drainage calculation, what then did that allow you to do? How did you take that information to derive at any kind of conclusion about the feasibility of stand-alone wellbores?

A. Well, after doing the -- well, what I estimated is --

Q. Don't get too far ahead of me. Let's tell them where we're going first.

A. Basically we estimated wells in that pool to perform similarly to the existing wells. When you use that profile and run the economics, it's not economic to do that.

Q. Let's come back then and show us specifically now on this drainage plat, you've selected the San Juan 30 and 5 unit well 102.

A. Yes.

Q. And you've selected certain parameters to use for your drainage calculation?

A. Yes.

Q. Describe for us the values you've used and how they're displayed on the exhibit.

A. Sure. The petrophysical inputs that I used in our reservoir model were derived from geology interpretation from well logs that we have observed in the basin. We have seen the growth intervals of El Vado

to be around 400 feet. A net thickness or net pay will be around 85 to 20 percent of that. And I used 238 feet as the net pay for this well. Porosity is around 7 to 8 percent in this area. And with that we derive permeability to be very, very small, smaller than the Mesa Verde and the Dakota.

Q. Did you do this similar analysis with the unit well 91?

A. Same type of analysis.

Q. If you'll turn the page then to Exhibit 11D, again, describe for us what you have done here.

A. The same thing I did on the 102. In order to match the current production of that well using petrophysical inputs we had to use an area of less than 10 acres drainage area.

Q. The next portion of your analysis was to determine if it was feasible to drill a stand-alone Gallup well?

A. Correct.

Q. Let's turn to Exhibit 11E and have you set up what you've done for us here.

A. Sure. What you see here is what we expect a stand-alone Mancos to perform in this area. Basically this profile is based on the production we have observed in the 102 and the 901. When we use that profile and

run the economics, the MPB we obtain are very negative. Basically we won't be able economically to drill a stand-alone Mancos well in this area.

Q. Are your selection of parameters and cost components and run of the economics within the accepted range of choosing numbers for this calculation?

A. Yes.

Q. And the end conclusion is that you cannot drill stand-alone wells?

A. No, I cannot.

Q. Let's turn now past the economic summary and look at Exhibit 11F. Again, we're looking at a cross section. Why have you chosen to put this in the exhibit book?

A. I chose to show that so you can see that the net thickness that I use for my reservoir model is consistent with the geology. We see it to be about 3 to 400 feet.

Q. And you and Mr. Swaney are in agreement about how to run the thickness calculations to come up with the net numbers you've used in your calculation?

A. Yes.

Q. And going forward then, is it your engineering conclusion that the most economic opportunity for developing what remains in the Gallup is to produce that

in association with a tri-mingled wellbore or at least a dual completion with the Mesa Verde?

A. Yes, it is.

Q. Well, let's turn to the components of how you as an engineer have analyzed the different pieces for downhole commingling.

A. Okay.

Q. I'm going to take these a little bit out of order, but I'm going to start with exhibit tab number 7 and let's talk about the spinner allocation method. If you'll take a moment, let me find exhibit tab 7, turn past the cover sheet. We're now looking at a colored display here. Show us how you do this. Explain verbally the process of how you're proposing to achieve an appropriate allocation of reservoir share among the three reservoirs using a spinner method.

A. Yeah. The way we do this is basically by measuring the contribution from each formation individually. What we do is we're proposing an accepted method, which is using a spinner tool. So what we do is we put the well on production simulating line pressure. We run the spinner across all three formations. By doing so you can estimate how much each of the formation is contributing to the total production of the well.

Q. Start with the illustration here, we've got the

spinner set up in the wellbore.

A. Yes.

Q. You're at a point that is below the tubing, right?

A. Yes.

Q. And you start the spinner and it starts taking measurements.

A. Yes.

Q. It starts above the top of the Mesa Verde, which would be the top zone?

A. Yes.

Q. And then it progressively goes deeper. As it goes deeper, what happens to the data set?

A. What you do, as you said, is you start measuring the whole wellbore, the entire production. As you keep going down then your only measurement of the formations are underneath the tool. By differentiation then when you compare the total production versus the current the production of ones you left above the tool is what that formation is contributing.

Q. So when the spinner tool gets below the base of the Mesa Verde, you know that you're taking a measurement of the Mancos and the Dakota?

A. That's correct.

Q. And as you get below the top of the Greenhorn

then you know the tool is only measuring Dakota?

A. That's correct.

Q. And by subtracting then you can do the --

A. By subtraction you calculate the difference.

Q. Are you satisfied that this system is fair and reasonable and will provide the owners with their share of production for each of these pools?

A. Yes, it will.

Q. Let's turn to tab 8. In tab 8 you've got a number of examples of division form C107As that have been filed by your company?

A. Yes.

Q. From this population of examples in Exhibit 8, can you direct our attention to one that we can walk through to show how you propose to apply this to the wells in what was formerly the LaJara Canyon Gallup Pool?

A. Sure. If you please go to Exhibit 8N, as in Nancy.

Q. Give us a minute to get there.

A. This is a recent tri-mingle we drilled and completed.

Q. What are the first things you do in filling out the data for this information?

A. The first thing you do, if I can direct your

attention to the first chart, you can see all the information. The first thing is basically name the pools. They have been tri-mingling. In this example there's the Blanco, Mesa Verde, Basin Mancos, and Mesa Dakota, then the pool code and then the top of the bottom of each of the formations being tri-mingled. Then we enter a pressure if we need it.

Q. Let's stop there. When we're dealing with the pressure component of the form we're dealing with the issue of the pressure criteria?

A. Yes.

Q. And when you fill in the form and it says 150 percent rule.

A. Uh-huh.

Q. What does that mean?

A. Basically if the bottom curve is 150, basically that's the depth calculation from your lower perforations, you don't have to provide any pressure to the division. In other words, let's say the top of the Mesa Verde is at 5400 and the top of the Dakota is at 7500, when you multiply 5400 times 1.5 that is around 8100, then that satisfies that 150 percent rule. We don't have to provide any pressure.

Q. The 150 is a percentage?

A. It's a percentage.

Q. And we've got the Mancos sandwiched between the Dakota and the Mesa Verde?

A. Yes.

Q. And so the 150 percent percentage is triggered because of the relationship to the Dakota and the Mesa Verde?

A. Yeah. The code and the deeper, yeah.

Q. When you go through the process there is no problem with pressures and cross flows if you tri-mingle, is there?

A. No.

Q. These wells don't sustain substantial shut-in times where you have cross flows?

A. No.

Q. In obtaining prior approvals have you had to supply any more details other than what you've reported on Exhibit 8 and for this process?

A. No.

Q. Let me ask you another question with regards to this form, is there any type of compatibility problems with the fluids or the gases produced from the three intervals?

A. No.

Q. In all instances you're dealing with dry gas?

A. Dry gas in all three formations.

Q. Is there kind of water component to any of these reservoirs that's a problem for you?

A. No. There's very small water production essentially from Mesa Verde and Dakota.

Q. So there's no fluid sensitivity issues?

A. No.

Q. As a result of commingling, do you find any reduced value in the hydrocarbons that are ultimately sold from the wellbore?

A. No.

Q. And, again, then the last part of this is to provide an allocation method for the tri-mingles?

A. Uh-huh.

Q. And one of the options that can be used is your proposed spinner method?

A. Yes.

Q. Is there anything in that sequence that you need to elaborate on that we have forgotten to talk about?

A. No.

Q. Should the Examiner choose to do so and look through the rest of the C107As in Exhibit 8, generally what is he looking at? What have you given him a range of things to look at here?

A. What you get is basic information of the well and the formations to be completed. Also, as part of the

C107As there is the plat for each formation, the dedicated acreage. The C102s is part of the C107As. And if there is any differences on ownership we also need to include the notification to owners that we want to tri-mingle these three formations. And also as part of the C107As we provide what we expect these formations to produce.

Q. Is it fair to characterize these two Gallup wells in the LaJara Canyon Gallup as marginal productions?

A. Yes.

Q. What kind of rates do you currently achieve from these wells?

A. Let me go back to my Exhibit 11, if you will. Initial production, no more than 90 NCF a day, 100 in your best case if we perform as these wells have performed.

Q. You see no data, from your perspective as an engineer, that would cause you to believe that this is other than marginal production?

A. No. It's marginal production.

MR. KELLAHIN: That concludes my of examination of Mr. Pertuso. We move the introduction of his Exhibits 11, 7, and 8.

EXAMINER WARNELL: Exhibits 7, 8, and 11 are admitted.

Questions, Mr. Brooks?

[Exhibits 7, 8, and 11 admitted.]

EXAMINER BROOKS: I have no questions.

EXAMINER WARNELL: I had a question in there someplace. Let me see if I can figure out where it was. Let's go to the very last one, it's 11F, your cross section there.

Now, when I go back to your drainage area plots, just before this last slide, I guess that would be 11D and 11E on those two plots, have you just taken the data points from the top of the El Vado down or are you including those upper Mancos perfs on the 102 well? I guess I don't really understand what you've used there for your interval or your points top to bottom.

MR. PERTUSO: My thickness?

EXAMINER WARNELL: Yes.

MR. PERTUSO: Yeah, it's El Vado. If I use more thickness your area is going to look even smaller.

EXAMINER WARNELL: Yeah, even smaller.

MR. PERTUSO: Uh-huh.

EXAMINER WARNELL: So you just went to the top of the El Vado?

MR. PERTUSO: Yeah.

EXAMINER WARNELL: Okay. I don't have any other questions. Thank you.

MR. PERTUSO: Thank you.

MR. KELLAHIN: I did have one follow up, Mr. Examiner.

Q. (By Mr. Kellahin) I forgot to ask the witness, when you run the spinner test, what is the status of the wellbore? Have you achieved some kind of the stabilized wellbore condition for the wellbore?

A. Yes.

Q. And how do you know you have a stabilized wellbore?

A. Pressure.

Q. Once the pressure reaches a certain point it stabilizes?

A. It stabilizes.

Q. Then you do the allocation?

A. Yes.

EXAMINER WARNELL: Okay. That brings up another point I was thinking about. On the completion itself, do you go in there and perforate all three zones and then do you treat them, do you frac them?

MR. PERTUSO: Yes, sir. The Dakota frac plug, Mancos frac plug, Mesa Verde, drain them all, clean out, put in the line.

EXAMINER WARNELL: And then you run your spinner survey?

MR. PERTUSO: Yes. After clean out and after water, sand has reached acceptable amounts.

EXAMINER WARNELL: What kind of frac are you using on that?

MR. PERTUSO: Slick water.

EXAMINER WARNELL: Slick water frac, big frac.

MR. PERTUSO: What would you call a big frac?

EXAMINER WARNELL: In other words, what kind of sands are you putting away or fluid?

MR. PERTUSO: I don't have the answer to that. I would have to ask our completion engineers to give you more details in that regards.

EXAMINER WARNELL: Okay. Thank you very much.

MR. PERTUSO: Thank you.

MR. KELLAHIN: That concludes our presentation.

EXAMINER WARNELL: So with that case number 14773 will be taken under advisement.

[Case 14773 taken under advisement.]

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

REPORTER'S CERTIFICATE

I, Lisa Reinicke, New Mexico Provisional Reporter, License #P-405, working under the direction and direct supervision of Paul Baca, New Mexico CCR License #112, Official Court Reporter for the US District Court, District of New Mexico, 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 and was reduced to printed form under my direct supervision.

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 whatsoever in the final disposition of this case in any court.

Lisa Reinicke

Lisa R. Reinicke,
Provisional License P-405
License expires: 8/21/2012

Ex count: