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:

APPLICATION OF WILLIAMS PRODUCTION COMPANY, LLC FOR EXCEPTIONS TO THE SPECIAL RULES AND REGULATIONS FOR THE BLANCO-MESAVERDE GAS POOL FOR A PILOT PROJECT TO DETERMINE THE PROPER WELL DENSITY REQUIREMENTS FOR MESAVERDE FORMATION WELLS, SAN JUAN AND RIO ARRIBA COUNTIES, NEW MEXICO

CASE NO. 14291

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID K. BROOKS, Legal Examiner
RICHARD EZEANYIM, Technical Examiner
TERRY G. WARNELL, Technical Examiner

March 19, 2009

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID K. BROOKS, Legal Examiner, RICHARD EZEANYIM, Technical Examiner, and TERRY G. WARNELL, Technical Examiner, on Thursday, March 19, 2009, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South Saint Francis Drive, Room 102, Santa Fe, New Mexico.

REPORTED BY: JOYCE D. CALVERT, P-03
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Examiner Hearing
CASE NO. 14291

A P P E A R A N C E S

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FOR DEVON ENERGY PRODUCTION, LP:

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MR. EZEANYIM: At this time, we call Case No. 14291. This is the Application of Williams Production Company, LLC for Exceptions to the Special Rules and Regulations for the Blanco-Mesaverde Gas Pool for a Pilot Project to Determine the Proper Well Density Requirements for Mesaverde Formation Wells, San Juan and Rio Arriba Counties, New Mexico.

Call for appearances.

MS. MUNDS-DRY: Good morning, Mr. Examiner. Ocean Munds-Dry with the law firm of Holland & Hart, here representing Williams Production Company, LLC this morning, and I have three witnesses.

MR. EZEANYIM: Any other appearances?

MR. BRUCE: Mr. Examiner, Jim Bruce of Santa Fe, representing Devon Energy Production Company, LP. I have no witnesses.

MR. EZEANYIM: Any other appearances? Okay.

May the witnesses stand up, state your name and be sworn.

[Witnesses sworn.]

MR. EZEANYIM: Okay. You may proceed.

MS. MUNDS-DRY: Thank you. I would like to call my first witness.

MORGAN VERNE HANSON

after having been first duly sworn under oath,

was questioned and testified as follows:

DIRECT EXAMINATION

BY MS. MUNDS-DRY:

Q. Would you please state your full name for the record.

A. Morgan Verne Hanson.

Q. And where do you reside?

A. Tulsa, Oklahoma.

Q. And by whom are you employed?

A. Williams Exploration and Production Company.

Q. And in what capacity are you employed with Williams?

A. I am senior staff landman.

Q. And have you previously testified before the Division, and were your credentials accepted and made a matter of record?

A. Yes.

Q. Are you familiar with the application that's been filed in this matter?

A. Yes, I am.

Q. Are you familiar with the status of the lands in this area that are the subject of the application?

A. Yes, I am.

MS. MUNDS-DRY: At this time, Mr. Ezeanyim, we would tender Mr. Hanson as an expert witness in petroleum land matters.

MR. EZEANYIM: Mr. Hanson is so qualified.

Before we proceed here, I don't know what the nature of your appearance is, Jim Bruce. Do we have a contester?

MR. BRUCE: No, sir. No, sir. Devon Energy owns acreage offsetting this project area and is an interested party.

MR. EZEANYIM: Okay. Go ahead.

MS. MUNDS-DRY: Thank you.

Q. (By Ms. Munds-Dry): Mr. Hanson, would you briefly summarize what Williams seeks with this application?

A. We seek approval of a pilot project for the purpose of determining the proper well density requirements for wells in the Blanco-Mesaverde gas pool within the Rosa Unit area in the San Juan and Rio Arriba Counties in New Mexico pursuant to Division Rules 19.15.15.11(C) NMAC.

Q. And can you tell me the boundaries that Williams proposes for the pilot project area?

A. Boundaries of the pilot project area will be in Township 31 North, 6 West, Sections 1 through 5, all; Sections 8 through 17, all; Sections 21 through 26, all; in Township 32 North, 6 West, Sections 32 through 36, all.

Q. And what is the purpose of this pilot project?

A. It's to study the feasibility of increased density for all of the Mesaverde formation wells within the Rosa Unit area and permit the drilling of one additional well

in each of the three existing 320-acre gas proration units.

Q. Mr. Hanson, what rules currently govern the development of this pool?

A. The special pool rules and regulations for the Blanco-Mesaverde gas pool, which currently provide for a 320-acre gas proration unit, up to four wells per gas proration unit under Rule 1(B)1, and then wells may be drilled no closer than 660 feet to the outer boundary of the unit on uncommitted lands and no closer then ten feet to any interior 4/4 line or subdivision to inner boundary within the participating area.

Q. Thank you. Would you please turn to what's been marked as Williams Exhibit No. 1, and review this for Mr. Ezeanyim.

A. This is a map showing the Rosa Unit area with the various types of interest shown. The Bureau of Land Management, federal lands, are shown in gray, and most of the other colors are hatched over. But in the brown, you can see the State lands, and in white you can see the fee lands. And then there is one uncommitted tract lying in between Sections -- in Sections 34 -- or I'm sorry -- 33 and 34 and in between Sections 3 and 4. That's in Township 31 and 32 North, 6 East.

MR. EZEANYIM: Excuse me. If I may ask, you are talking about those Rules 1(A)1, 1(B)1 -- which order?

THE WITNESS: The Blanco-Mesaverde.

MR. EZEANYIM: Do you know the order number?

THE WITNESS: I do not have that with me, no.

MS. MUNDS-DRY: I can look that up for you, Mr. Ezeanyim.

MR. EZEANYIM: Is it Order No. R-10987 and 081?

MS. MUNDS-DRY: That sounds right.

MR. EZEANYIM: I would really appreciate if -- you know, in the application it says 1(B)1 in the regulations.

THE WITNESS: Right.

MR. EZEANYIM: I think it's important for us if you mention which order number you're talking about.

THE WITNESS: I'll make sure we do that the next time.

MR. EZEANYIM: Okay. Thank you.

Q. (By Ms. Munds-Dry): Mr. Hanson, before we turn to -- I just want the Examiners to get an idea on the larger map on Exhibit 1 where we're proposing the pilot project you previously gave the description.

If you could turn back to Exhibit 1 for just a minute, and indicate for the Examiners where you're proposing the pilot project.

A. The pilot project is all within the boundaries of the existing Mesaverde participating area in the Rosa Unit, and it comprises basically the western portion of the participating area.

Q. Thank you. Now, if you could please turn to Exhibit No. 2, and review this for the Examiners.

A. This exhibit shows the pilot area, and it indicates the wells that we plan in the pilot, and you can see them. They're in triangles. We have a larger version of this map, but they're in red, green, and blue triangles on this map.

Q. And this, according to the legend, shows the drilling plan for the future?

A. Yes, it does. This also shows existing Mesaverde wells. And if you'll notice, there is the green and the white. And I'll have -- Ken McQueen will explain this in a little bit more detail. But the white areas of this map indicates areas where there is no Mesaverde location on a 40-acre tract.

Q. So it appears that the proposed wells are in 4/4 sections that are not already occupied by a Mesaverde well?

A. That's correct.

Q. If you could please review for the Examiners what Williams' interest is in this area.

A. Williams owns -- Williams is the operator of the Rosa Unit, Williams Production Company, LLC. And Williams Production Company is the working interest owner with just a little over 58 percent working interest in the Mesaverde participating area.

Q. And what is the character of the lands under the proposed pilot project area?

A. Mostly federal. And as indicated on Exhibit 1, there are some State lands and some fee tracts within that also.

Q. And is Exhibit No. 3 a copy of the Notice of Affidavit, Exhibit A, which lists all parties that were notified, the notice letter, the Affidavit of Publication, and then the green cards and the return receipts?

A. Yes, it is.

Q. To whom was notice provided?

A. Notice was provided to all working interest owners within the Rosa -- all interest owners -- excuse me -- within the Rosa Unit. It was provided to the Commissioner of Public Lands and the Bureau of Land Management.

It was also provided to the offsetting operators, which is Devon, ConocoPhillips, and Energen.

Q. And has Williams met with representatives of the Bureau of Land Management concerning this application?

A. Yes, we have.

Q. And what was their response?

A. The Bureau of Land Management is in support of this application.

Q. And, Mr. Hanson, I'm going to hand you what we've marked as Exhibit No. 10.

MS. MUNDS-DRY: Mr. Examiner, I hope Mr. Lovato doesn't mind, but I just wanted to recognize that Mr. Lovato of

the Bureau of Land Management is here today. And he delivered to us this morning a copy of what we would like to submit as Exhibit No. 10.

MR. EZEANYIM: Okay.

MS. MUNDS-DRY: And I'll get more copies. I apologize. I just have a limited number of copies, so I will get that to the court reporter.

Q. (By Ms. Munds-Dry): Mr. Hanson, what is Exhibit No. 10?

A. Exhibit No. 10 is a letter to Commissioner Fesmire from the Bureau of Land Management signed by Mr. Steve Henke, in support of the application.

Q. And I believe that the letter states a couple of conditions that the BLM would request be made mart part of any order that resulted from this hearing?

A. Yes, it does.

Q. And has Williams had a chance to review those conditions?

A. I have not had a chance to review those conditions.

Q. Do you know if anyone else from Williams has had a chance to review those conditions?

A. I think Mr. McQueen may have had an opportunity this morning, but he may not have had. I'm not sure.

Q. Okay. Has Williams discussed this application

with the OCD Aztec office?

A. Yes, we have. They were in the meeting with the Bureau of Land Management on March 16, 2009.

Q. And do you know what their response was to this application?

A. They were favorable to this application.

Q. And has Williams received any objections to the proposed pilot project?

A. No, we have not.

Q. And were Williams Exhibits 1 through 3 prepared by you or compiled under your direct supervision?

A. Yes, they were.

MS. MUNDS-DRY: At this time, Mr. Examiner, we would move the admission of Exhibits 1 through 3 and No. 10 into evidence.

MR. EZEANYIM: Exhibits 1 through 3 and No. 10 will be admitted.

[Applicant's Exhibits 1 through 3 and No. 10 admitted into evidence.]

MS. MUNDS-DRY: And that concludes my direct examination of Mr. Hanson.

MR. EZEANYIM: Okay. Any questions?

MR. BROOKS: Did you state what percentage of working interest that Williams owns?

THE WITNESS: I kind of had that in my pile from the

last testimony, and I got it buried here.

But it's 58.19 for 7.19 percent working interest is what we have.

MR. BROOKS: That's all I have.

MR. EZEANYIM: Mr. Warnell?

MR. WARNELL: No questions.

EXAMINATION

BY MR. EZEANYIM:

Q. How many actual MCF are you seeking?

A. I believe in this project there will be 20. Ken will --

Q. I mean per spacing unit now.

A. Within the unit?

MS. MUNDS-DRY: Oh, per spacing unit?

THE WITNESS: Oh, one per spacing unit. Under this pilot project, we will not be placing one in each spacing unit. We have selected specific spacing units within the pilot project area.

Q. (By Mr. Ezeanyim): Yeah. I don't know what he's talking about in this letter. I just got it.

But why is it necessary for you to do five wells per spacing unit instead of four to be able to do that study? Why is that necessary to add that additional well?

A. I believe that Mr. McQueen will provide engineering testimony to that effect.

Q. So what I'm understanding is that four wells will not be enough to get at that?

A. We wish to make the proper determination of what the correct density within the Rosa Unit will be, and by drilling these wells, we hope to gain the data necessary to make that determination.

Q. Okay. Maybe when we hear from Mr. McQueen. Okay. Thank you very much.

MS. MUNDS-DRY: Thank you. I'd like to call my next witness.

MR. EZEANYIM: You may. Go ahead.

MARGARET ANN LESSENGER

after having been first duly sworn under oath,

was questioned and testified as follows:

DIRECT EXAMINATION

BY MS. MUNDS-DRY:

Q. Would you please state your full name for the record.

A. Margaret Ann Lessenger.

Q. And where do you reside?

A. In Golden, Colorado.

Q. And by whom are you employed?

A. Williams Exploration and Production Company.

Q. And in what capacity?

A. I'm a staff geoscientist.

Q. Have you previously testified before the Oil Conservation Division?

A. I have not.

Q. Would you briefly summarize for the Examiners your educational background?

A. Okay. I have a B.S. in geophysical engineering from the Colorado School of Mines, 1981. I have an M.S. in geophysics from the Colorado School of Mines, 1988. And I have a Ph.D. in geology from the Colorado School of Mines with emphasis on stratigraphy and sedimentology in 1993.

Q. Dr. Lessenger, would you please also summarize your work experience for the Examiner?

A. Yes. I have nine years of oil and gas exploration experience with petroleum exploration companies. I also have ten years of research in petroleum geology for both the Colorado School of Mines and a private company. And I've been with Williams for two-and-a-half years.

Q. Are you familiar with the application that's been filed by Williams in this case?

A. Yes, I am.

Q. And have you made a geological study of the Mesaverde Formation in the San Juan Basin?

A. Yes, I have.

MS. MUNDS-DRY: And at this time, Mr. Examiner, we would tender Ms. Lessenger as an expert witness in petroleum

geology.

MR. EZEANYIM: Are you a member of any professional organizations like professional geologist, engineering, or whatever?

THE WITNESS: Am I a member of professional organizations?

MR. EZEANYIM: Yeah, registered, not member.

THE WITNESS: I'm not a registered member, but I'm a member of professional organizations.

MR. EZEANYIM: Okay. So qualified.

Q. (By Ms. Munds-Dry): Dr. Lessenger, I'd ask you to turn to what's been marked as Exhibit No. 4 and review this packet for the Examiners.

A. Okay. Are we going to do the PowerPoint?

Q. I guess we've elected, since we have the packets here, just to do it that way.

A. Okay. I thought we were going to do PowerPoint, but that's okay.

The first page of this packet shows the general stratigraphy of the San Juan Basin, and, in particular, it shows the position of the Mesaverde group which has the arrows to it.

This is a typical depositional wedge with the Point Lookout marine sandstone at the base that's contemporaneous with the Menefee Formation following behind as the Point

Lookout progrades into the ocean, which is to the east.

The Menefee Formation is non-marine. It's composed of fine grains, silica-like sediments and sandstones that are alluvial in nature.

Above the Point Lookout is the Cliffhouse Sandstone, which is also a marine sandstone, which is stepping more landward. So the three -- these three units complete the sedimentary wedge of the Mesaverde group.

If you turn the page, you look at a typical stratigraphic column of the San Juan Basin. You have the Mancos shale followed by -- successively followed by the marine seaward-stepping Point Lookout Sandstone, then followed by the seaward- and landward-stepping non-marine Menefee Formation, and then followed by the Cliffhouse landward-stepping marine.

So that's just the vertical expression of the development of the sedimentary wedge in the basin.

Turn the page. Okay. This just shows a general schematic of what the depositional model might be in this case with the green area showing the non-marine Menefee Formation, the black showing positions of possible coals, and the yellow showing the marine sands in the case of when the system was stepping more seaward, the Point Lookout, and in the case when the system was stepping more landward, the Cliffhouse Sandstone.

Okay. The next page shows a log cross section from

west to east on the W/2 of the Rosa Unit with the Mesaverde section. There are -- it shows the three units in the bottom. It shows the Point Lookout in the middle of the Menefee and at the top the Cliffhouse. The logs that are displayed here on the gamma ray, which is color-coded by API value, it shows the neutron curve in pink, the density curve in blue, and the resistivity curve in a lighter blue with some orange shading.

To left of the gamma ray shows where I've calculated to be the pay sand in each of these units. In the Cliffhouse it's colored green. In the Menefee it's colored blue. In the Point Lookout, the Point Lookout is divided into an upper sand and a lower sand with the upper sand having a purple color and the lower sand an orange color.

I calculated this pay by using some log cutoffs. For the Cliffhouse Sandstone, I colored pay sand in those positions that had less than 80 API. In the Menefee Formation, I called pay sand at less than 110 API, but also a density greater than two grams per CC to eliminate the coals.

In upper Point Lookout, I use a cutoff of 80 API, and in the lower Point Lookout, which is a little shalier, I used a cutoff of 100 API.

What I want to point out on these log cross sections is that the log character is actually correlatable to the depositional style of these sandstones, and that, in turn, is related to their potential connectivity and heterogeneity.

If you turn the page, this shows one of these log cross sections, and it highlights the Cliffhouse Formation. It also shows an outcrop photograph of the Cliffhouse Sandstone, which is located in Mancos Canyon in Colorado. If you note on the outcrop, this is a fairly homogeneous sandstone.

Similarly, if you look at the log character of the open-hole logs, you'll see that relative to the other units, they are also rather homogeneous. My prediction is that the Cliffhouse sandstone would have lateral continuity of sandstone.

If you turn the page again, this shows more outcrop photos of the Cliffhouse Sandstone. And what you can see is, even over a distance, at least in the scale of the photograph, the sandstone is relatively continuous.

If you turn the page, we've now gone down to the Point Lookout Sandstone. And, again, I show an outcrop photo of the Point Lookout. I want you to note the heterogenous nature of the sandstone. It's not only composed of sands, but finely interbedded siltstones and claystones and mudstones.

We can also see the same character in the log with the serrated nature of the gamma ray and also a more serrated nature in the other open-hole logs. What I would predict is that the lateral continuity of the Point Lookout Sandstone is less likely than in the Cliffhouse Sandstone.

And if you turn the page, you see another outcrop

photo of the Point Lookout Sandstone, again, stepping back and looking at it in a larger scale, and you can see these thinner sandstone units. Some of them are more continuous. Others are more discontinuous than they actually shale out laterally.

So what I would conclude, would predict, is that the Point Lookout Sandstone would be less homogenous or more heterogenous than the Cliffhouse Sandstone. Even though they are both marine sandstones, they have a very different character.

If you turn the page, here's an outcrop photo and log plot of the Menefee Formation. In the Menefee Formation, I want you to note the very discontinuous nature of the sandstones. These sandstones are composed of channel belt fill and crevasse plays which generally do not extend laterally great distances.

You can similarly see this same heterogeneous character in the open-hole log responses with thicker units of fine grain mudstones and more variability in the sands themselves and the character of the sands.

If you turn the page, I've highlighted these sand bodies in this outcrop photo showing that the sand bodies, even in this scale of the outcrop, are laterally discontinuous. And the point being is that at this scale they are very discontinuous. So we can conclude that most likely they will lead discontinuous at the scale of the increased spacing

density as well.

Q. Thank you, Dr. Lessenger. Would you then, from a geologic perspective, explain why Williams has decided to propose and undertake this pilot project?

A. We believe that the Mesaverde wells in the Rosa are not effectively draining the reservoir because they are not accessing all of the sand bodies, and we want to determine if there are any undrained reservoirs and, subsequently, any additional reserves to be recovered with the development under current rules.

And we will evaluate the reservoir for both an economic as well as a reservoir prospective.

Q. And will the information you see apply throughout the Rosa Unit?

A. This pilot will provide data that will reflect the reservoir characteristics of only a portion of the reservoir in the Rosa Unit, and as we've shown you previously, the Mesaverde is really not prospective in the eastern portion, so it will not apply there.

Q. How will this information help, if at all, and apply to the rest of the San Juan Basin?

A. There are other pilots in the San Juan Basin, and this will be supplementary information to those pilot projects.

Q. Dr. Lessenger, would you please turn to what's been marked as Exhibit No. 5, and review this for the

Examiners.

A. Okay. Exhibit No. 5 is an isopach of net pay multiplied by porosity in the Cliffhouse Sandstone.

Q. Okay. And Exhibit No. 6?

A. Exhibit No. 6 is a similar map. It's net pay times porosity in the Menefee Formation.

Q. And Exhibit No. 7?

A. Number 7 is a similar map. It shows the net pay times porosity in the upper Point Lookout.

Q. And finally Exhibit No. 8.

A. Number 8 is a map of the lower Point Lookout showing the net pay isopach multiplied by porosity. The reason why we're showing you this right now is that this is data that I've compiled and mapped that is input into the original gas-in-place calculations that Mr. McQueen will address later.

Q. And based on your study of the Mesaverde Formation and the maps that you have assembled for us here today, could you please summarize your geological conclusions for the Examiners.

A. Yeah. My conclusions are there are effectively three separate reservoir units within the Mesaverde. There's the Cliffhouse Sandstone, which I would predict would be more laterally continuous. It has lower BDH, so it's a prospective reservoir unit and should not be contributing as much to the pay.

The two other units -- the Point Lookout Sandstone is likely to heterogenous, but it's more homogeneous than the Menefee. The Menefee almost -- I would predict -- is almost probable that it is discontinuous, and that is where, according to the geologic calculations, the bulk of the reserves would lie.

So what this does is that with additional wells, it's likely that we will encounter new untapped reservoirs within the spacing unit. And, again, I've provided maps showing the data input that will be addressed later by Mr. McQueen on the original gas-in-place calculations.

Q. Thank you. Were Williams Exhibits No. 4 through 8 prepared by you or compiled under your direct supervision?

A. They were.

MS. MUNDS-DRY: Mr. Ezeanyim, we move the admission of Exhibits 4 through 8 into evidence.

MR. EZEANYIM: Exhibits 4 through 8 will be admitted.

[Applicant's Exhibits 4 through 8 admitted into evidence.]

MS. MUNDS-DRY: And that concludes my direct examination of Dr. Lessenger.

MR. EZEANYIM: Mr. Bruce, do you have anything to say?

MR. BRUCE: I have no questions.

MR. BROOKS: No questions.

MR. EZEANYIM: Okay. Mr. Warnell?

EXAMINATION

BY MR. WARNELL:

Q. I have a question or two, Dr. Lessenger.

A. Sure.

Q. I spent 25 years with Schlumberger, so I like to look at logs.

Just a couple of questions to kind of help orientate me with the scale of it all. What's the scale on the density neutron? Is that 0 to 30, or do you know?

A. Density neutron? No, it's not a standard scale. I don't recall the specific scale, but I tried to scale it in order to see the character, rather than looking at a new cross over, a density cross over. It's not scaled for that.

Q. It looks like you've got a cutoff on the resistivity where you're shading it away or --

A. It's probably -- it's either 15 or 20 ohms, yeah, and I don't recall which for this particular plot.

Q. I have no further questions.

EXAMINATION

BY MR. EZEANYIM:

Q. Is this unit in a high or low productivity area?

A. I'm not familiar with the designation of high and low productivity area for the Mesaverde.

Q. Maybe Ms. Munds-Dry can help you with that.

MR. EZEANYIM: Do you know which area it is? The low or high productivity area?

MS. MUNDS-DRY: I don't know, Mr. Ezeanyim. I don't know if Mr. McQueen knows the answer to that question.

MR. HANSON: I believe that's a Fruitland Coal reference. It doesn't apply to the Mesaverde.

MR. EZEANYIM: Okay. Okay. I have no further questions.

MS. MUNDS-DRY: Thank you. I'd like to call my next witness.

KENLEY HAYWOOD MCQUEEN, JR.

after having been first duly sworn under oath,

was questioned and testified as follows:

DIRECT EXAMINATION

BY MS. MUNDS-DRY:

Q. Would you please state your full name for the record.

A. My full name is Kenley Haywood McQueen, Jr.

Q. And where do you reside?

A. I reside in Tulsa, Oklahoma.

Q. And by whom are you employed and in what capacity?

A. I'm employed by Williams Exploration and Production, and I serve as the director of San Juan Region.

Q. And by background, what is your training?

A. I'm a degreed petroleum engineer.

Q. And have you previously testified before the Division, and were your credentials accepted and made a matter of record?

A. I have previously testified, and they have been accepted.

Q. And are you familiar with the application that's been filed by Williams in this case?

A. I am.

Q. And have you made an engineering study of the proposed pilot project area?

A. I have.

MS. MUNDS-DRY: We would tender Mr. McQueen as an expert in petroleum engineering.

MR. EZEANYIM: He is so qualified.

MS. MUNDS-DRY: Thank you.

Q. (By Ms. Munds-Dry): Mr. McQueen, as we did with the last case, would you please start off by explaining to the Examiners why this application is important to Williams and what we hope to achieve here.

A. We have drilled 176 locations, Mesaverde locations, in the prospective pilot area within the Rosa Unit. We are rapidly nearing the completion of the drilling of all the viable 80-acre spaced locations in the Rosa.

The map that Mr. Hanson introduced into testimony was

designed to indicate by shading all of the 4/4 sections that are currently occupied by Mesaverde location or will be drilled by a Mesaverde location shortly.

Q. Mr. McQueen, was that Exhibit No. 2?

A. That's correct. Our interest in further developing the Mesaverde has been peaked by some of our San Juan competitor's applications to the Commission for additional infill drilling. And ConocoPhillips, in particular, has been down and has asked for several pilot areas going from 80-acre to 40-acre spacing.

We've elected to take a bit of a different approach here in that we have an ongoing exploitation program in our deep potential reservoirs in the Rosa; this would be the Dakota wells. And we realize that a number of these Dakota wells that we'll be drilling during the course of the next two years will be located on 40/40, or 4/4s, 40 acres that are not currently occupied by a Mesaverde completion.

That, coupled with the fact that in calculating the original gas in place, we see a significant amount of gas remaining, we would like to take on this pilot project of selecting specific well bores that are on open Mesaverde locations and gather data to ascertain and determine what might be the optimal spacing in the Mesaverde in the Rosa Unit.

Q. Mr. McQueen, would you then, with that, turn to what's been marked as Exhibit No. 9, and review this for the

Examiners.

A. Yes. I took Dr. Lessenger's PHID-H maps that she had provided to us, and we calculated gas in place for each of the four zones that she described in her presentations. Those four zones would be the Cliffhouse, the Menefee, and we divided the Point Lookout into the upper Point Lookout and the lower Point Lookout.

And based on her PHID-H maps and other considerations, which include the water saturation of 40 percent and initial pressure of 1400 PSI and an initial reservoir temperature of 150-degree Farenheit and an initial gas compressibility factor of 0.852, we determined these gas-in-place numbers for each of the zones that Dr. Lessenger described geologically earlier.

And our determination for gas in place showed 90.2 BCF in the Cliffhouse; 261.8 BCF in the Menefee; 76.4 BCF in the upper Point Lookout; and 208.7 BCF in the lower Point Lookout, for a total gas in place within this two-township Rosa study area of 637 BCF.

We compared that against what we expect to be recovered; that is, the estimate, the ultimate -- excuse me -- the estimated ultimate recovery in the existing wells and the wells that we plan to drill. And to date, out of this two-township area, we have cumed 76.4 million cubic feet. And based on our just completed internal and SEC-compliant reserve

study, we estimate the remaining Mesaverde reserves in this area at 37.1 BCF.

So our estimated ultimate recovery for the study area is 113 BCF, which is only approximately 18 percent of the total gas in place for this study area. And based on the fact that the bulk of the gas is located originally in the Menefee zone, and as Dr. Lessenger testified that's the most heterogenous of the group, we think there is merit here for gathering data in the fifth well in the selected proration units.

Q. Based on the data that you have assembled here, what kind of recovery do you think Williams can achieve in this unit?

A. Well, we think that a 40 to 50 percent of recovery of gas in place is not unreasonable in this particular unit. And that may require more than the one well per proration unit. But we do have some experience in some of our other operations.

In the Piceance Basin of western Colorado, we are currently exploiting the Williams Fork Formation there, which is a fluvial depositional environment, and that reservoir has been down-spaced to ten acres. And our internal representation of recovery there is estimated at 85 percent of the gas in place due to that down-spacing.

In the Green River Basin, we also have ownership in both the Jonah and the Pinedale fields, which are very large

gas resource plays. And the bulk of those fields have been down-spaced to 10-acre spacings with a number of active five-acre pilots active there as well.

So our belief is that there is significant additional gas that can achieved through additional or down-spacing.

Q. And, Mr. McQueen, what kind of data do you plan to acquire during the pilot project if it's approved?

A. Specifically, there's two data points that I'm interested in acquiring in these new Mesaverde well bores, which are undrilled 4/4s. The problem I have with the pressure data that we are currently able to acquire is that each of these Mesaverde intervals are typically stimulated with large hydraulic fractures. And as a consequence of that, basically all four of these zones are combined, from a production standpoint.

And my interest is to obtain specific reservoir pressure in each of the intervals. So in these test wells, we would propose conducting de-fits on each of the subintervals to look for pressure differences that exist in those intervals.

Again, we believe that because of the nature of the depositional environment in the Menefee that we would see probably a larger pressure difference in that zone than what we might measure in an existing well bore where all four of the zones are effectively commingled and produced together.

The second point that we hope to obtain -- we'll

obtain from this infill project is the initial potential, the deliverability of the well, collect -- individually and collectively in the four zones. Obviously, that's a very important piece of information and gives us an indication from an economic viewpoint whether or not this is a viable project to pursue further down-spacing.

Q. Mr. McQueen, earlier through Mr. Hanson we submitted Exhibit No. 10, which is a letter from the BLM. Did you have a chance to review that letter?

A. I have reviewed the letter from the BLM, and we can accept the conditions that are provided there. We do have -- the study area in the two townships consists of 26 sections. We have identified as many as 20 potential wells in which additional data can be gathered because of our ongoing deep drilling program.

And certainly, we would prioritize those wells that the BLM have asked us to do and meet those requirements first. And based on data that we gather from the first group of wells, then make a determination whether it's warranted to continue or not.

Q. And for the Examiners, one of the conditions -- I mentioned this after you reviewed what kind of data you were going to collect -- is to essentially collect that kind of data that they would need to further evaluate this project. And that's acceptable to Williams?

A. That's completely acceptable to us. Our plan would be to collect the data and report back our findings to the BLM.

Q. You also spoke earlier of the challenges with gathering pressure data. At this time, does Williams have any pressure data it can provide to the Division?

A. I would characterize our pressure data as spotty at this point. With the advent of using P-tos to report initial potential and not using the AOF test like we did in years past, we don't have a lot of what I would say current pressure data there to hang our hats on.

And also, because of the nature that I described, that the pressures that we would measure would be an average pressure over all of the zones, is the reason that we want to go forward with this test and identify pressures in each of the individual zones that compose the Mesaverde formation.

Q. So if I understand you correctly, any pressure data that you could have would really not be meaningful when you're really looking at the area as a whole?

A. I think the best data -- I think the data that we need to ascertain how to better recover the gas in place is the zonal data, the pressure data in each of the individual components of the Mesaverde interval. And we really don't have a way to obtain the individual zones after these wells have been massively hydraulically stimulated.

Q. So as you say, this would be one of the main purposes for the pilot project?

A. That's correct.

Q. And based on your review of Dr. Lessenger's study and the compilation of the data you submitted here today, would you please summarize your conclusions?

A. The gas-in-place calculation numbers indicate that there's significant gas remaining in the reservoir after we produce the reserves that we have with the existing well bore configuration. And with our ongoing effort to develop the deep reserves in the Rosa Unit, we believe it provides us an opportunity to gather additional data and better assess whether or not there's opportunity for further down-spacing in the Rosa Unit.

Q. How soon does Williams hope to commence these operations?

A. We are prepared to commence operations as soon as the Commission approves the application.

Q. And keeping in mind the BLM's request for reporting, how soon do you believe that Williams can be prepared to report back the results of its work to the Commission?

A. Certainly we'll be able to report to the Commission in November of this year following this summer's drilling activity. Of course, Rosa has seasonal restrictions,

so any data-gathering activity that would be conducted this year would be complete by November 1st, and then upon a complete analysis of that data, we would ask the BLM for an opportunity to present our findings at that point and discuss what's the best way to move forward.

Q. And how long does Williams request that the pilot project be allowed for in order to gain a sufficient amount of data?

A. We're requesting two years to complete the pilot project.

Q. And, again, will you be prepared to report back with all your data at that time to the Division and the BLM?

A. Yes, we will.

Q. And, Mr. McQueen, will approval of this application and the implementation of the proposed pilot project be in the best interests of conservation, the prevention of waste, and the protection of correlative rights?

A. We believe it will.

Q. Was Williams Exhibit No. 1 prepared by your or compiled under your direct supervision?

A. Exhibit --

Q. Exhibit No. 9?

A. Yes, it was.

MS. MUNDS-DRY: Mr. Ezeanyim, we move the admission of Exhibit No. 9 into evidence.

MR. EZEANYIM: Exhibit No. 9 will be admitted.

[Applicant's Exhibit 9 admitted into evidence.]

MS. MUNDS-DRY: And that concludes my direct examination of Mr. McQueen.

MR. BRUCE: No questions.

MR. BROOKS: No questions.

MR. WARNELL: No questions. But if you could give me the porosity sale on this.

MS. MUNDS-DRY: We'll be glad to provide that.

EXAMINATION

BY MR. EZEANYIM:

Q. In the Rosa Unit, how many acres are in the Rosa Unit, do you know? How many acres do you have in the Rosa Unit?

MS. MUNDS-DRY: Almost 54,000.

MR. HANSON: Almost 54,000.

THE WITNESS: There's slightly more than 14,000 acres in the study area.

Q. (By Mr. Ezeanyim): Okay. I'm coming to that. I'm talking about the whole. Is there 54,210, I think?

MS. MUNDS-DRY: I believe that's correct. It might be in your application.

Q. (By Mr. Ezeanyim): Okay. Out of that, 14,000 acres in the study?

A. There's 14,764.85 acres in the application area.

Q. Okay. I thought -- in that Rosa Unit, how many of them are federal lands?

A. Most are federal lands.

Q. They are federal lands?

MR. HANSON: 91 percent of the lands are federal.

MR. EZEANYIM: 91 percent is federal. Then the rest is what?

MR. HANSON: Fee and state.

THE WITNESS: State and fee.

Q. (By Mr. Ezeanyim): Okay. Mr. McQueen, in the 14,700 acres, is it fully developed with all the exceptions that are required?

A. It is not fully developed at this point, but we expect it to be fully developed by 2011.

Q. Okay.

A. We have 176 existing wells, and it will be fully developed when we have 188 wells. So there are 12 remaining locations that are on our drilling schedule for the 80-acre spacing.

Q. Okay. Why I'm asking this question is because, you know, we are talking about pressure in these wells.

A. Yes.

Q. So out of those, you couldn't do them if you drilled them new. Because if you want us to give you one additional optional infill.

A. Correct.

Q. Now -- but the ones that are already drilled, you can't find the information from them when you drilled them -- pardon me -- out of the 12 wells that have been drilled in that area? And then I think you could get pressures. You can get anything you want.

A. The fifth well gives you an additional draw point per proration unit.

Q. A what?

A. An additional point of production. And while your point is correct that some of this data could be gathered from existing wells, we believe that -- and, again, based on what we're seeing from other operators -- that two, perhaps four more wells per proration unit is really justified in light of so little of our gas in place being recovered.

Q. What are you seeing from other places? What do you say you are seeing from other places?

A. We're seeing Conoco aggressively pursue 40-acre pilots. That's an additional four wells per proration unit, and I believe five or six different units that they operate.

Q. Have we given them permission to do that?

A. I believe you did. I hope you did, because they've been drilling on a 40-acre spacing.

Q. Okay. I hope so too. I don't know. But --

A. I think so.

Q. You need two years to complete the drilling of those additional two wells? Plus, if we approve this application to give you the authority to drill additional -- maybe in those -- I don't know how many of them, but spacing units, are we talking about 320s?

A. Yes. It's currently 320 acres with four wells per proration unit.

Q. Okay. I see what you mean. Okay. So what you intend to do after two years, are you going to come back and say, "Well, we need to make it permanent now and develop it on -- downgrade it to five wells"?

A. That would be -- our intent is, based on the data that we would acquire, we would come back to the Commission and ask for what we believe would be the appropriate down-spacing at that point in time.

That's why we are not asking for down-spacing to 40s at this point in time. We simply want to use the opportunity of the wells that are being drilled to other formations to collect this data and ascertain what we think the optimum spacing is and then come back to the Commission, present the data request, and request the appropriate down-spacing at that point in time.

Q. And your Exhibit 9, I would like to get clarity. It's not going to be more than approximately 18 percent. This is currently what you are doing?

A. Yes, sir.

Q. But since you already drilled the wells, I don't know what you're going to do, can't project.

A. Correct.

Q. The assumption what -- maybe I will just ask you that question: What recovery factor are you expecting if we approve it?

A. Well, that's part of what we hope to ascertain in our data gathering, but certainly 40 to 50 percent recovery factor is not out of the question for reservoir, a fluvial reservoir of which the Mesaverde is -- at least in the Menefee is a fluvial reservoir. That's why I noted some of our other work in a fluvial reservoir.

At the Piceance where the down-spacing has gone to ten acres per well -- and they're anticipating as high as 80 percent recovery factor there, which I find quite remarkable for a fluvial-type reservoir. Typically, you expect 85 percent recoveries in Gulf Coast reservoirs where you have higher permeability.

Q. So you might even come in to ask for eight wells per unit to get at that 50 percent?

A. It's within the realm of consideration. I think it's a bit premature on my part to speculate, but certainly the trend in fluvial reservoirs has been to drill more wells than fewer wells. And that's because the sand lenses in the fluvial

depositional environment are essentially isolated from other sand lenses, and you don't see a good continuity of sand bodies across a lateral extent. So that's why it's important to have more well bores and then massively hydraulically fracture those well bones so that you can essentially contact as many of these sand bodies as possible.

Q. When you contacted BLM, did you give them some engineering data to try to convince them what you are trying to do? Or did you just tell them you want to do this, and they say, yes, go ahead. What did you do?

A. We provided them, basically, all the information that we have shown you this morning --

Q. Okay.

A. -- including our calculations of gas in place and how much gas remains.

Q. Okay.

MR. EZEANYIM: Anything further?

MS. MUNDS-DRY: Nothing further.

MR. EZEANYIM: Nobody has any more comments? Good.

You may step down.

At this point, Case No. 14291 will be taken under advisement.

And this concludes the hearing for today.

* * *

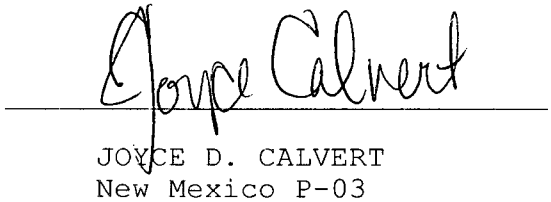
I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 14291 heard by me on 3/19/09, Examiner, Oil Conservation Division

REPORTER'S CERTIFICATE

I, JOYCE D. CALVERT, Provisional Court Reporter for the State 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 in the final disposition of this proceeding.

DATED this 19th day of March, 2009.



JOYCE D. CALVERT
New Mexico P-03
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STATE OF NEW MEXICO)
)
COUNTY OF BERNALILLO)

I, JOYCE D. CALVERT, a New Mexico Provisional Reporter, working under the direction and direct supervision of Paul Baca, New Mexico CCR License Number 112, hereby certify that I reported the attached proceedings; that pages numbered 1-40 inclusive, are a true and correct transcript of my stenographic notes. On the date I reported these proceedings, I was the holder of Provisional License Number P-03.

Dated at Albuquerque, New Mexico, 19th day of March, 2009.

Joyce D. Calvert
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