STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

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

ORIGINAL

CASE NO. 14149

APPLICATION OF EL PASO E&P COMPANY, LP, TO ABOLISH THE VAN BREMMER CANYON-VERMEJO GAS POOL, EXPAND THE CASTLE ROCK PARK-VERMEJO GAS POOL, AND TO ESTABLISH SPECIAL RULES AND REGULATIONS FOR THE CASTLE ROCK PARK-VERMEJO GAS POOL, COLFAX COUNTY, NEW MEXICO

AND

APPLICATION OF EL PASO E&P COMPANY, LP, TO EXPAND THE STUBBLEFIELD CANYON RATON-VERMEJO GAS POOL, AND TO ESTABLISH SPECIAL POOL RULES AND REGULATIONS FOR THE POOL, COLFAX COUNTY, NEW MEXICO

CASE NO. 14150

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

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

July 10, 2008
Santa Fe, New Mexico

This matter came for hearing before the New Mexico Oil Conservation Division, DAVID K. BROOKS, Legal Examiner, TERRY WARNELL, Technical Examiner, and RICHARD EZEANYIM, Technical Examiner, on July 10, 2008, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South St. Francis Drive, Room 102, Santa Fe, New Mexico.

REPORTED BY: JOYCE D. CALVERT, P-03
Paul Baca Court Reporters
500 Fourth Street, NW, Suite 105
Albuquerque, New Mexico 87102

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Examiner Hearing
CASE NO. 14149

APPEARANCES

FOR THE APPLICANT:

James G. Bruce, Esq.
ATTORNEY AT LAW
P.O. Box 1056
Santa Fe, New Mexico 87504

MR. WARNELL: Okay. Let's go back on the record in Docket No. 23-08, and we're going to combine Case No. 14149 and Case No. 14150 for hearing purposes.

Case 14149 is the Application of El Paso E&P Company, LP, to Abolish the Van Bremmer Canyon-Vermejo Gas Pool, Expand the Castle Rock Park-Vermejo Gas Pool, and to Establish Special Rules and Regulations for the Castle Rock Park-Vermejo Gas Pool, Colfax County, New Mexico.

Case No. 14150 is the Application of El Paso E&P Company, LP, to Expand the Stubblefield Canyon Raton-Vermejo Gas Pool, and to Establish Special Rules and Regulations for the Pool, Colfax County, New Mexico.

Call for appearances.

MR. BRUCE: Mr. Examiner, Jim Bruce of Santa Fe, representing the Applicant. I have three witnesses.

MR. WARNELL: Will the witnesses please stand and remain standing to be sworn in?

MR. REEVES: Gregory Reeves.

MR. MARK: Frederick Earle Mark.

MR. MUSGROVE: Howard Wayne Musgrove.

[Witnesses sworn.]

GREGORY REEVES

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

DIRECT EXAMINATION

BY MR. BRUCE:

Q. Would you please state your name and city of residence for the record, please?

A. Greg Reeves, Littleton, Colorado.

Q. Who do you work for and in what capacity?

A. El Paso Exploration and Production Company, Inc., as a senior staff landman.

Q. Have you previously testified before the Division?

A. I have not.

Q. Would you please summarize your educational and employment background for the Examiner?

A. I have a Bachelor's degree from Louisiana State University, 27 years of experience as an oil and gas landman. I've worked for a number of companies including Texaco, Phillips Petroleum and Marathon Oil.

Q. Does your area of responsibility at El Paso include this part of Northeast New Mexico?

A. Yes, it does.

Q. And are you familiar with the land matters involved in these two applications?

A. Yes.

MR. BRUCE: Mr. Examiner, I tender Mr. Reeves as an expert petroleum landman.

MR. WARNELL: We'll accept Mr. Reeves as an expert petroleum landman.

MR. BRUCE: Mr. Examiner, Exhibit 1 is the one that's on the bottom, standing up on the bottom. We did that so you don't have to fold out your own copy.

Q. (By Mr. Bruce): Mr. Reeves, what is Exhibit 1?

A. Well, Exhibit 1 is a land plat which highlights, in a kind of reddish-brown, El Paso's mineral ownership. It also highlights the Colorado border with a light gold line that is pretty hard to see. I'll point that out in a minute. It also identifies wells drilled in the Stubblefield Canyon Pool and in the Van Brimmer Pool and Castle Rock Park Pool. And that is down in this area in the southwestern portion. Stubblefield is right here. The state boundary is right there. So these lands up here are in Colorado.

Q. And will we discuss the ownership of the area shaded in reddish-brown in more detail a little bit later?

A. Yes.

Q. Briefly, what does El Paso seek in these two cases?

A. In Case No. 14149, El Paso seeks to abolish the Van Bremmer Canyon-Vermejo Gas Pool and include its acreage in the Castle Rock Park-Vermejo Gas Pool, expand the horizontal limits of the Castle Rock Park Pool and establish special rules for Castle Rock Park Pool. And again, these are -- I believe

the Van Bremmer area is down here and the Castle Rock is up here. We're wanting to combine those.

Q. And in Case 14150?

A. In Case 14150, El Paso seeks to expand the horizontal limits of the Stubblefield Canyon Raton-Vermejo Gas Pool and establish special rules for the Stubblefield Canyon Pool.

Q. Let's start with expanding the pools. When were these -- currently three pools created?

A. They were created on May 1st, 2001, by order No. R-11561.

Q. And what acreage is currently officially within the three pools?

A. The three pools currently contain the acreage listed in Exhibit 2, which is a copy of that order.

Q. Additional wells have been drilled in these pools since 2001; have they not?

A. Yes. Approximately 600 wells have been drilled in the three pools. However, the Division has never expanded the pools with its nomenclature orders.

Q. Why does El Paso request that the Van Bremmer Canyon Pool be abolished?

A. Well, as you can see on the exhibit, in the southwestern portion of the plat that the two pools have now adjoined, so there's no reason to have two pools.

Q. And they produce from the same zones; do they not?

MR. EZEANYIM: When you say the two pools are adjoined, what do you mean? I heard what you said about why you wanted to abolish that area. Did you say something else?

THE WITNESS: Well, the initial Van Bremmer area was -- and there's no outline of it in this map -- but was down in this area. And then the Castle Rock outline was up in this area. And at that time -- I don't know how many wells were drilled at that time -- you have these two separate areas, and now you've got wells encompassing those two areas and in between them. So we just want to combine them into one area.

MR. EZEANYIM: Okay. You want to abolish the other name and then combine the two?

THE WITNESS: Yes, sir.

MR. EZEANYIM: Okay. I see what you mean.

MR. WARNELL: Combine and expand.

THE WITNESS: Right. Right.

Q. (By Mr. Bruce): And what acreage does El Paso request be included in the Castle Rock Park Pool, the combined Castle Rock-Van Bremmer Canyon Pool?

A. Exhibit 3 lists all the acreage we request be included in the Castle Rock Park Pool.

MR. BRUCE: And, Mr. Examiner, I meant to put a heading on there, but Exhibit 3 would pertain to Case 14149.

MR. WARNELL: Okay. Exhibit 3 is pertaining to Case 14149.

MR. BRUCE: Yes.

Q. (By Mr. Bruce): And which acreage does El Paso request be included in the Stubblefield Canyon Pool?

A. Exhibit 4 lists the acreage we request be included in the Stubblefield Canyon Pool.

Q. That's Case 14150, correct?

A. Correct.

Q. Do Exhibits 3 and 4 include all acreage on which wells have been drilled to date?

A. Yes.

Q. These are both gas pools, correct?

A. Yes.

Q. And what spacing rules apply to wells in both of the pools in both applications?

A. The pools are subject to the Division's statewide spacing rules which provide for 160-acre well units comprised of a single governmental quarter section, wells to be located no closer than 660 feet to a quarter section line nor closer than 10 feet to an interior quarter/quarter section line, and one well per 160 acres.

Q. And what are the special rules and regulations which El Paso is here requesting today?

A. We request 160-acre well units comprised of a

single governmental quarter section; two wells per 160 acres, whether they're vertical or horizontal which may be located on any quarter/quarter section line in the well unit; wells to be located no closer than 10 feet to a quarter section line or an interior quarter/quater section line, subject to the directional drilling provisions of Division Rule 111; a buffer zone where wells must be located in accordance with statewide rules; and, an administrative procedure for the exception to the well density provisions of the special pool rules.

Q. Does El Paso have geologic and engineering witnesses to discuss the technical aspects of the rule changes?

A. Yes.

Q. Now, you are requesting a setback requirement of 10 feet from a quarter section line and that is substantially different than what the Division usually approves. Why are setbacks unimportant in this case -- and I refer you back to Exhibit 1.

MR. EZEANYIM: Before you answer that question, nobody will require you to do it 10 feet from a quarter/quarter section. But you're not doing it from a quarter section. That's very unusual. So that's why I want to -- let me see why you want to do it in a quarter section. We allow you do to it in a quarter/quarter, but not a quarter section.

THE WITNESS: Well, that entire brownish-red area is 100-percent mineral fee.

MR. EZEANYIM: Which one?

THE WITNESS: This big one right here. All of this is our mineral fee, the whole thing. Of course, the wells are drilled right here and right here. This is also mineral fee down here, too.

MR. EZEANYIM: Okay.

THE WITNESS: The only other owner that is out in this area owns some rights under a road out here. This is the road. It runs right through here, and this is some detail on that road. And we have that party under lease. So we control everything out there through the one lease and the mineral fee.

Q. (By Mr. Bruce): Now, on that plat -- and I can't see it -- there are a couple of white areas on the extreme eastern end of the El Paso mineral fee?

A. They're around the corner from you.

Q. And what are those open white areas?

A. Those are areas that we do not own an interest. This is a dairy farm up here, and this is an NRA facility here. We have no interest in those.

MR. EZEANYIM: So 10 feet from a quarter section, there will be no correlative rights issues then because it's owned by El Paso. There are no correlative rights issues? Because that's what I'm worried about.

THE WITNESS: Correct, correct.

MR. EZEANYIM: Okay. Is that the point you're

making?

THE WITNESS: Yes, sir.

MR. EZEANYIM: Okay.

Q. (By Mr. Bruce): And how many acres are highlighted in New Mexico in the one single block?

A. There's approximately 637,000 acres in New Mexico.

MR. EZEANYIM: How much?

THE WITNESS: 637,000.

MR. EZEANYIM: And what portion is in Durango? That portion we're not really concerned about because it's not on our land. But the one in New Mexico is 6,000-what?

THE WITNESS: 637,000.

MR. EZEANYIM: 637,000?

Q. (By Mr. Bruce): And is Exhibit 5 simply a smaller land plat more or less showing the same thing as the larger Exhibit 1?

A. It is -- with a little different coloring.

Q. Okay. Is El Paso the sole operator in the entire shaded red area?

A. Yes, sir.

Q. Now, you did mention to the south there are two separated pink or reddish-brown blocks. Are those tracks being included in this application?

A. No. We own the minerals there, but there are no

wells drilled on that acreage. Those are these two blocks of acreage here.

Q. So you are just seeking pool rules for the contiguous acreage in the northern part of the plat?

A. Correct.

Q. Now, you mentioned one area where there is an additional mineral owner leased to El Paso. Could you please refer to Exhibit 6, which is the plat on top, and discuss the contents of that plat for the Examiner.

A. That plat represents Highway 55 which runs through the Stubblefield area. And the yellow acreage are the rights that are owned by the County of Colfax who we have under lease. It's approximately 141 acres.

Q. So out of the 637,000, there's only 141 acres, approximately, owned by the County?

A. That's correct.

Q. Now, why do you think the County will not be harmed by the 10-foot setback requirement El Paso is requesting 10 feet from the quarter section line?

A. Well, as you can see, most of the quarter sections -- actually, the County of Colfax has an interest in about 33 160s out here, and 30 of those have a well on them. There's only three that don't. I don't know if they ever will at any point, but they are already sharing in the production on 30 wells out here.

Q. And the plans are -- those well units are also being -- are within El Paso's plan to develop them into wells, are they not?

A. Yes.

Q. Now, are there also -- with respect to the setback requirements, are there topographic issues in locating well sites?

A. Yes, there are.

Q. And will the next witness discuss that in a little more detail?

A. Yes.

Q. Now, El Paso also requests a buffer zone. What do you request -- and again, I refer you to Exhibit 1.

A. We request that the well units on the exterior of the reddish-brown area remain under statewide rules.

Q. So that would be every quarter section on the exterior boundary of the main reddish-brown area?

A. Correct.

Q. And the buffer zone would also apply to the dairy farm and the National Rifle Association acreage on the east side of the plat?

A. Yes, it would.

MR. EZEANYIM: Why are you making that request? Why are you making the request? You want to be under statewide rule. Are you saying that if any operator comes now to change

some of those location requirements, don't do it? Is that what you are requesting? Because when you ask for us to put it under statewide rule -- to eliminate the statewide rule. Unless you are saying that if any operator comes back on that buffer zone and says, well, we want the setback to be different than the statewide rule, don't do it. Is that what you're saying?

THE WITNESS: Well, we're just saying that we will stay under statewide rules on the perimeter of this acreage. Not in the interior, but on the perimeter.

MR. EZEANYIM: On the perimeter?

THE WITNESS: On the perimeter and around these -- like this dairy farm here and this NRA facility, we will stay 660 feet away from those areas.

MR. EZEANYIM: But -- what are you saying for it to be under statewide rules? Why would we change it unless somebody asks us to?

MR. BRUCE: And Mr. Reeves could answer, but I don't think those NRA or dairy acreage is leased to anyone at this point.

THE WITNESS: Not that I know of.

MR. BRUCE: And so our thought is that if somebody leases it and develops it in the future, maybe they'll want the same type of rules, which would be okay. But at this point, we don't want to seem to adversely affect them in any way if

that -- you know, like we said, in the interior, it's not an issue because of the common ownership.

MR. EZEANYIM: Let me hear from my legal examiner. What do you think on that request?

MR. BROOKS: Well, it's rather similar to what we have done in the Basin Fruitland Coal and so forth where we've not provided that in your drilling in a participating area, you can drill anywhere you want to. But you have to be at least 660 setback from the outer boundary of the participating area. So it's a very similar concept.

MR. EZEANYIM: Okay.

Q. (By Mr. Bruce): Now, that's one buffer zone. Is there a second buffer zone you'd like to highlight, Mr. Reeves?

A. Yes. On the southwest side of the plat, there are well units which include El Paso minerals and unleased federal minerals. These well units are listed on Exhibit 7. We have agreements with the federal government to develop these well units with one well each, under which the government receives a compensatory royalty. We request that the special pool rules not apply to the lands listed on Exhibit 7, and essentially those lands are right along in here.

Q. For purposes of giving notice, the only potentially -- we don't think they are affected -- but potentially affected counties are Colfax County and the United States, correct?

A. Correct.

Q. And our Exhibits 8A -- well, let's take a step back. The county road right-of-way, the minerals are in the Stubblefield Canyon Pool, correct?

A. They are.

Q. And the federal minerals adjoin the Castle Rock part of the pool?

A. Correct.

Q. Okay. And so was notice of those two hearings given to the proper interest owner?

A. Yes.

Q. And is that reflected in my Affidavit of Notice submitted as Exhibits 8A and 8B?

A. Yes.

Q. And were Exhibits 1 through 8B prepared by you or under your supervision or compiled from company business records?

A. Yes.

Q. And in your opinion, is the granting of this application in the interest of conservation and the prevention of waste?

A. Yes.

MR. BRUCE: Mr. Examiner, I move the admission of El Paso Exhibits 1 through 8-B?

MR. WARNELL: We'll accept El Paso Exhibits 1

through 8-B.

[Applicant's Exhibits 1 through 8-B admitted into evidence.]

MR. BRUCE: And I have no further questions of the witness.

MR. WARNELL: Questions, Mr. Brooks?

MR. BROOKS: I don't believe I have any questions, no.

MR. EZEANYIM: I don't have any, but I think when your engineer comes up here, we're going to hear more about your 160 vertical -- or you are going to tell us how you're going to accomplish that under the special pool rules, right?

THE WITNESS: Yes.

MR. EZEANYIM: Testimony is coming. Because you mention what you need is 160 too?

THE WITNESS: Correct.

MR. EZEANYIM: The testimony is coming?

THE WITNESS: Correct. Right.

MR. WARNELL: I have a question, Mr. Reeves. On Exhibit No. 5 --

THE WITNESS: Yes.

MR. WARNELL: There's some blue up here which is in Colorado, and then there's the blue down here kind of in the southwest.

THE WITNESS: Yes.

MR. WARNELL: What is that?

THE WITNESS: That blue that you pointed to is this tract right here.

MR. WARNELL: Okay.

THE WITNESS: And for some reason, that tract didn't show up on that smaller plat.

MR. EZEANYIM: Is that part of the pool?

THE WITNESS: No, sir.

MR. WARNELL: No, it's not. All right.

MR. BRUCE: The blue to the north just designates the Colorado acreage.

MR. EZEANYIM: Okay. We're not interested in Colorado.

MR. WARNELL: Okay.

THE WITNESS: Thank you.

MR. BRUCE: If you folks notice anything -- I don't know if a couple of exhibits slipped out. But also, our next witness is the geologist. His exhibits are lettered A through G. So they don't go quite in order.

FREDERICK EARLE MARK

after having been first duly sworn under oath,

was questioned and testified as follows:

DIRECT EXAMINATION

BY MR. BRUCE:

Q. Would you please state your name and city of

residence.

A. Fred Mark. I live in Evergreen, Colorado.

MR. EZEANYIM: Fred Mark?

THE WITNESS: Mark, M-a-r-k.

Q. (By Mr. Bruce): And who do you work for and in what capacity?

A. I'm employed by El Paso Exploration and Production as a geological advisor.

Q. And have you previously testified before the Division?

A. No, I have not.

Q. Would you please summarize your educational and employment background?

A. I hold a BS degree in geology from the University of Idaho, and I've been employed in the energy and petroleum business for 34 years. I've been employed by El Paso, Sun Oil Company, GHD Resources, Double Eagle, Petroleum, TRC.

Q. And how long have you been with El Paso?

A. I've been with El Paso cumulatively six years. I worked for them when I first came out of school, and I worked for them two-and-a-half years.

Q. Does your area of responsibility at El Paso include this portion of Northeast New Mexico?

A. Yes, it does.

Q. And are you familiar the with geologic matters

involved in these applications?

A. Yes, I am.

MR. BRUCE: Mr. Examiner, I tender Mr. Mark as an expert petroleum geologist.

MR. WARNELL: We accept Mr. Mark as an expert petroleum geologist. And when did you graduate, 1974?

THE WITNESS: 1974.

MR. WARNELL: That was a good year.

Q. (By Mr. Bruce): Could you identify Exhibit A for the Examiner and discuss the zones of interest in these two pools?

A. This is a shaded triple combo log. It is a representative log of the Raton Basin. And it shows the two coal productive units in the basin, the Vermejo Formation and the Raton Formation. The zones are highlighted. The coals are highlighted in black, and I think the Vermejo Formation ranges from 250 to 300 feet thick in the basin. Coals within the Vermejo range from 12 feet to less than one foot thick. There are up to 12 coals that will be penetrated in an individual well.

Coals are very lenticular. Maximum thickness is 10 feet. Minimum thickness is about a foot. Arial extent of Vermejo coals range from a maximum of about 15 square miles to about one square mile. Any given well -- total thicknesses of coal in the Vermejo range from less than five feet to 35 feet.

What I want to emphasize is that the coals are very thin, very lenticular. A typical Vermejo coal is about three feet thick and extends over about three square miles.

The base of the Vermejo is Trinidad sandstone. Atomic Vermejo is a Raton conglomerate which is also the basin of another coal-bearing conglomerate, the Raton Formation. The Raton Formation is about 1800 feet throughout the basin, maximum. Coals occur in the upper half of the Raton Formation. Raton coals are more lenticular and less continuous than the Vermejo coals. Typically they range up to 15 feet thick down to less than one foot thick. Cumulatively, they can be from a minimum of five feet thick to a maximum of 75 feet thick. Typically, even the thickest coals extend over no more than three square miles.

MR. EZEANYIM: What is the depth of this coal?

THE WITNESS: The deepest wells are about 3,000 feet.

MR. EZEANYIM: 3,000 feet?

THE WITNESS: Typically, they are 2,300 feet.

MR. EZEANYIM: But you have drilled some to 3,000?

THE WITNESS: We have drilled some to 3,000.

MR. EZEANYIM: Okay.

THE WITNESS: Any questions?

MR. EZEANYIM: Just that the Raton is 1,800.

THE WITNESS: The Raton Formation is 1,800 feet thick, and it is shallower than the Vermejo. We will typically

see it from a depth of about 1,800 feet up.

MR. EZEANYIM: Okay.

Q. (By Mr. Bruce): Mr. Mark, what is your Exhibit B?

A. Exhibit B is a structured contour map on top of the Trinidad Formation or the base of the Vermejo coal, the Vermejo Formation. Contour intervals are 200 feet and illustrate the morphology of the basin. It's made from approximately 1,400 data points. The dark dots are producing El Paso wells. On the right, the yellow outline -- sinuous yellow outline on the right -- is the outcrop of the Trinidad and Vermejo Formations, undivided. That forms the eastern boundary of the basin. The same yellow line on the left is outcrop of the Trinidad and Vermejo Formation. That forms the western boundary. The Trinidad and Vermejo Formations also rain dome in the central part of the basin, which is colored white on the interior.

The basin is -- the long axis of the basin is northwest/southeast. The dips on the east side of the basin are very low, from 100 to 300 feet per mile. The western side of the basin is characterized by very steep dips, from 1,500 feet to 2,000 feet per mile. The axis of the basin is divided into two sub-basins by a dome in the center. The dome has about 500 feet of relief.

Q. And what is Exhibit C?

A. Exhibit C is an isopach of total coal, in the Vermejo Formation. And remember, this is total coal so that the thicks are really stacks of multiple thin coal seams. And this shows the distribution of coal. Coal thins to the east. The thicker coals are in the south and in the north area.

Q. And likewise, what is Exhibit D?

A. Exhibit D is once again an isopach of the Raton Formation. And it illustrates total thickness of coal in the Raton Formation. And I remind the Examiners again, that this total coal thickness is made up, maybe, up to 15 thin seams that are stacked. The red lines are the location of two cross sections that will illustrate the stratigraphy across the basin.

Q. Okay. Why don't we move onto those cross section. What is the first one?

A. The first cross section is A to A Prime, and it is from east to west across Stubblefield Pool. It's a shaded gamma ray track. Yellows are sandstones. Grays are shales and silt stones. Black are coals.

And what I want to illustrate with this is the lateral discontinuity and thin nature of both the Vermejo and the Raton coals. The formations are marked on the right.

Q. And does Exhibit B reflect the same?

A. Exhibit B reflects the same. Everything that is reflected on Exhibit A -- Exhibit E.

Q. Okay.

A. It basically shows the two formations, Vermejo and Raton, and also illustrates the thin and discontinuous nature of the coals in both formations.

Q. In looking at your isopach, the wells on your cross sections are, say, a half a mile to a mile apart, for the most part?

A. They are approximately a mile apart on the cross sections. Those cross sections are about 12 miles long.

Q. Looking at these geologic exhibits from a geologic standpoint, are additional wells necessary in the two pools to adequately produce reserves?

A. In my opinion, because of the lenticular nature of the coals, in order to adequately produce the methane resource in the basin, we do need to down-space in order to contact more of the coals.

Q. And although we really haven't gotten into it, your plats do show that there are -- you do have wells up in Colorado; do you not?

A. Yes, we do. We do operate in Colorado. We have approximately 80-plus wells in Colorado.

Q. What is the spacing of the coal wells in Colorado?

A. As I recall, the spacing, statewide spacing order, is 40 acres in Colorado?

MR. EZEANYIM: For gas?

THE WITNESS: Yes, for coal-bed methane.

MR. EZEANYIM: In Colorado?

THE WITNESS: Yes, sir.

MR. EZEANYIM: And what are you doing? Are you doing 40 acres?

THE WITNESS: We are not. We will be down-spacing there in the future.

MR. EZEANYIM: Okay.

THE WITNESS: But we have not yet.

MR. EZEANYIM: But the statewide rules for Colorado says 40 -- the unit 40 for that, right? The gas -- the well unit is 40 acres, right? I don't know what the Colorado --

THE WITNESS: I don't know that we would go -- Mr. Musgrove might be better to address that. But we have no plans at this time to go to 40 acres in Colorado. We are looking at going to 80.

MR. EZEANYIM: I don't know if we can do that here. Maybe we will, but, you know, I just wanted to -- I'm curious what they do there. They might do 20 for gas. I don't know.

MR. MUSGROVE: Actually the statewide Colorado rules is 40 acres, if your TD is less than 2,300.

MR. EZEANYIM: So it's based on TD?

MR. MUSGROVE: Deeper than that, they go to 160. So it's dependent on depth.

MR. EZEANYIM: Interesting.

THE WITNESS: But our wells in Colorado are less than 2,500 feet deep.

MR. EZEANYIM: So it's on 40, then.

Q. (By Mr. Bruce): Then one final issue, Mr. Mark, you've put on the board your large Exhibit G. What is reflected in that exhibit?

A. Exhibit G is just intended to show the rugged topography in the area and to point out locations that can be built are at a premium. And that's why we want to go to 10 acres -- excuse me, 10-foot offset -- from quarter sections, because we have great difficulty locating wells. This area is bisected by canyons that are up to 750 feet deep. In order to locate the wells, if we went by the standard down-spacing, we would have to file numerous exceptions, and it would be a paperwork burden for both us and the State to file those exceptions. Whereas, if we have the flexibility to locate them within the section with 10-foot offsets, we wouldn't have to file the paperwork.

MR. EZEANYIM: On the 10-foot offsets -- now, I go back. There was something in my head when you say that, because the ownership is common in that area?

THE WITNESS: Yes, sir.

MR. EZEANYIM: Okay.

Q. (By Mr. Bruce): One item just of interest, on

the left side of your plat, the white area circled by yellow, what is that?

A. This is Vermejo Park Dome. The yellow is the outcrop. And I should point out this is the outcrop of the Trinidad and Vermejo Formations.

Q. Is that where the headquarters of the ranch is located?

A. Yes. This is where the headquarters of the Vermejo Ranch is located.

MR. WARNELL: And the Colorado state line, it's not --

THE WITNESS: It's not marked separately.

MR. WARNELL: So that's Colorado.

THE WITNESS: And this area is Colorado.

Q. (By Mr. Bruce): Were Exhibits A through G prepared by you or under your supervision?

A. They were prepared by me.

Q. And in your opinion, is the granting of this application in the interest of conservation and the prevention of waste?

A. Yes, it is.

MR. BRUCE: Mr. Examiner, I tender the admission of El Paso's Exhibits A through G.

MR. WARNELL: A through G are admitted.

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[Applicant's Exhibits A through G admitted into evidence.]

MR. BRUCE: And I have no further questions of this witness.

MR. WARNELL: Mr. Brooks?

MR. BROOKS: I don't have any questions.

MR. EZEANYIM: I have no questions. I think I asked all my questions.

MR. WARNELL: No questions.

HOWARD WAYNE MUSGROVE

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

DIRECT EXAMINATION

BY MR. BRUCE:

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

A. Howard Wayne Musgrove.

Q. Where do you reside?

A. Parker, Colorado.

Q. Who do you work for and in which capacity?

A. I work for El Paso Exploration and Production Company. I'm a senior reservoir engineer.

Q. Have you previously testified before the Division?

A. Yes.

Q. And were your credentials as an expert reservoir

engineer accepted as a matter of record?

A. Yes.

Q. And are you familiar with the engineering matters related to these two applications?

A. Yes.

MR. BRUCE: Mr. Examiner, I tender Mr. Musgrove as an expert reservoir engineer.

MR. WARNELL: So accepted.

Q. (By Mr. Bruce): Mr. Musgrove, could you identify Exhibit 9 for the Examiner?

A. Exhibit 9 is a locator plat. Outlined in red is the Vermejo Park Ranch boundaries, which have been talked about before. Highlighted in red are type example wells which I'll be discussing shortly, three of which the A-17, A-29 and E-8 are in Stubblefield Canyon Fool area, and the remaining five are in the expanded Castle Rock Park Pool.

Q. Could you -- let's first discuss the Stubblefield Canyon. What does Exhibit 10 reflect?

A. Exhibit 10 are three examples of decline curve analysis. This is a similar log plot, time versus rate, which shows the monthly gas rate. Also highlighted in red is the daily gas rate and MCF, the water rate. In light blue is gas/water ratio on each of these. And it just is a way to represent what we have produced to date. And the dotted lines are projections of future production. When we add the two

together, we get estimated recovery from each well.

Q. What does Exhibit 11 reflect?

A. I've highlighted on Exhibit 11 the three example wells that are there. This is a table that I prepared which -- basically, we can take a look at the thickness of the Vermejo coals that are perforated. The gas content is calculated from our prism logs. We then calculate a gas-in-place in the Vermejo marked BM and, using the absorption curves, we can also calculate the estimated ultimate for an 80-acre drainage.

Likewise, in wells which are commingled with the Raton coals, we have highlighted the feet of coal, the gas content, its gas-in-place, and an 80-acres EUR based on the absorption. I then added the gas-in-place the Vermejo and the gas-in-place for the Raton to give us total gas-in-place for an 80-acre drainage area. And then from each of the decline curves, I get an estimated ultimate recovery of gas, because about 70 percent of our wells in the Vermejo Park CBM project are commingled with Raton and Vermejo coals. And at varying depths with varying gas content, I chose 316 standard cubic feet per ton as a standardized feet gas content and then made an equivalent feet of coal from the Vermejo and the Raton, added the two together, to give us the equivalent feet of coal perforated in each well.

MR. EZEANYIM: How do you calculate the drainage area?

THE WITNESS: What I did, then, is I took the EUR and I took the perforated -- excuse me -- the gas-in-place for the perforated 80 acres and divided that by 80. That gave me a gas-in-place per one acre. Also, based on the total field, our average recovery on the total field basis is about 52.8 percent. I then took that, multiplied it by 52.8, and that gives you your drainage area. This is basically EUR divided by whatever your recovery per acre would be.

MR. EZEANYIM: Is that what you call the absorption method? The method you used to calculate the drainage areas?

THE WITNESS: That is what I used to calculate drainage areas. And then, of course, I just converted drainage area into radius, feet of radius.

MR. EZEANYIM: Yes. Okay, on Exhibit 11, you did not mark the column where you have the drainage area. That column there on Exhibit 11.

THE WITNESS: I'm sorry. I don't understand your question.

MR. EZEANYIM: The second to the last column --

THE WITNESS: Yes.

MR. EZEANYIM: Is where your drainage area is, right?

THE WITNESS: That is correct.

MR. EZEANYIM: Now, if you look at those -- and these are for each well?

THE WITNESS: That is correct.

MR. EZEANYIM: And some of them can drain up to 302, 260 --

THE WITNESS: Correct.

MR. EZEANYIM: 247, 250, 200 --

THE WITNESS: Correct.

MR. EZEANYIM: Some of them can even drain.

THE WITNESS: Correct.

MR. EZEANYIM: Okay. Then why did you highlight those two?

THE WITNESS: I tried to find wells that you have about six to seven years of history on the decline curve and on a terminal decline so that you can get a reliable or fairly confident level of estimated ultimate recovery. If you take some of the wells that are very short term, where they're still inclining, the question then becomes at what rate do they stop incline.

MR. EZEANYIM: Okay.

THE WITNESS: I believe I'm about to answer your question on the next exhibit.

Q. (By Mr. Bruce): Why don't you go on to the next exhibit.

A. Exhibit 12 is cumulative frequency plot of the drainage areas for the 370 wells located in Stubblefield Canyon. And as you can see, the plot says that our P-50, or our average drainage radius here, is only 74 acres. As a

matter of fact, if you take and go up the 160 lines, only 10 percent of our wells are draining 160 acre or greater. So basically, 90 percent of our wells are not draining at 160. We have one well per one 160-acre block. We're leaving a lot of reserves behind.

Q. Let me ask you one thing: You mentioned you were recovering approximately 53 percent of the gas?

A. Approximately, on the overall average.

Q. Isn't that low for a gas recovery in a typical gas pool? Aren't recoveries --

A. Well, CBM you would expect somewhere between 60 and 70 percent being average. An exceptional dry gas CBM pool, you'd be in the 85 to 90 percent range. This is a low recovery for a CBM project.

Q. So in order to increase those recoveries, infill drilling is necessary?

A. Increased density, yes, sir.

Q. Okay. Move on to your Exhibit 13, briefly, Mr. Musgrove.

A. Thirteen is the same locator plat, and it just identified the location of the five example decline curves that I've given you for the expanded Castle Rock Park Pool, which are shown on Exhibit 14.

Q. Okay. Go ahead.

A. And again, this is just very similar to what we

saw in the Stubblefield Canyon. I tried to pick wells which have significant history and are on terminal decline so we may reasonably project our estimated ultimate recoveries.

Q. And then exhibit -- your Exhibit 15?

A. Exhibit 15 is very similar to the other one, where I list by wells the sample wells; the feet of Vermejo coal, the gas content; if they are producing from the Raton; the Raton coals and their gas content; the total 80-acre gas-in-place; the EUR from the decline curves converting to 316 standard cubic feet per ton equivalent coal. This allows me then to calculate the drainage area.

Q. And Exhibit 16?

A. Similar to Stubblefield Canyon, this is a cumulative frequency plot of drainage area. And 343 wells that are in Castle Rock Park, 50 percent or median is 55 acres. Here, however, we do see we have about 20 percent of our wells are greater than 160, still leaving 80 percent of our wells not recovering if we only have one well per 160 --

MR. EZEANYIM: On that Exhibit 16, you have P-50. What is the P-50?

THE WITNESS: P-50 is your arithmetic average of all your --

MR. EZEANYIM: Yeah. And you said how many acres, 55?

THE WITNESS: It's about 55 acres.

Q. (By Mr. Bruce): And does the -- do the wells in the Castle Rock, the southwestern pool, do they generally produce a little bit more than in Stubblefield Canyon?

A. Their variation is greater. They produce anywhere from 15 MCF a day to -- some of our stellar wells up in the former Castle Rock ares were three million a day from about 2,200 feet.

Q. But still there are many instances where one well is not draining 160 acres?

A. Approximately 80 percent of our wells in Castle Rock Park do not drain 160 acres.

Q. Were Exhibits 9 through 16 prepared by you?

A. Yes, they were.

Q. And from an engineering or reservoir engineering standpoint, is infill drilling necessary to adequately recover all of the reserves in the well units in both pools?

A. In my opinion, yes.

Q. And in your opinion, is the granting of both applications in the interest of conservation and the prevention of waste?

A. Yes.

MR. BRUCE: Mr. Examiner, I move the admission of El Paso Exhibits 9 through 16.

MR. WARNELL: Nine through 16 are admitted.

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[Applicant's Exhibits 9 through 16 admitted into evidence.]

MR. BRUCE: And I have no further questions of the witness.

MR. WARNELL: Mr. Brooks, questions?

MR. BROOKS: No questions.

EXAMINATION

BY MR. EZEANYIM:

Q. I have a couple. I think you have your deepest well here about 2,200 to 3,000 feet. Do you intend to drill these wells, and if you do, how do you intend to accomplish those shallow wells? Do you have horizontal wells right now?

A. We do have some horizontal wells in Castle Rock Park and in the Stubblefield area.

Q. That's what --

A. They are on the average of about 2,200 feet. And they're -- for the most part, we have 24 sidetracks which are producing from the Vermejo Formation, all but three, and we have seven grassroots horizontal wells. Again, the bulk of those are producing from the Basin Mesaverde coal.

Q. Okay. And 80 percent of your wells drilled less than -- is that 60 acres, you said?

A. 160 acres.

Q. Okay. Eighty percent are drilled less than 160, okay. And that's why you are asking to down-space?

A. Well, actually we're asking for increased density. We don't want to change the 160-acre.

Q. Okay.

A. All we're asking for is the opportunity to drill a second well where warranted to increase the recovery out of that 160. So obviously, the wells are producing very large drainage areas. We have no plans to drill an infill well.

Q. And I didn't look at the application and what you are asking about the pool rules -- what you are asking in the pool rules. Because now I said, increased density.

MR. BRUCE: That's correct.

MR. EZEANYIM: Will you supply a draft to show what you are asking?

MR. BRUCE: Oh, absolutely.

MR. EZEANYIM: Okay. And then including that write up, how you're going to include it in vertical wells, if you do the shallow wells.

THE WITNESS: For the most part, we're planning to drill vertical wells on the infills. We may try to drill from the existing pads to limit our impact on the ranch.

MR. EZEANYIM: Okay.

THE WITNESS: It would depend on how far out we can get with the directional and at what cost.

MR. WARNELL: But you haven't done that yet?

THE WITNESS: No.

MR. EZEANYIM: No further questions.

MR. WARNELL: When you say you've got some horizontal wells, are they true horizontal wells? I mean, laterals that --

THE WITNESS: They are laterals that are approximately 90 degrees.

MR. WARNELL: And they extend how far out?

THE WITNESS: From anywhere from about 1,000 foot to -- we have one, I believe, about 2,800 feet and contains about 2,200 feet of coal in that lateral.

MR. WARNELL: Is that a pretty good producer?

THE WITNESS: Yes, sir.

MR. WARNELL: I have no further questions, Mr. Bruce.

MR. BRUCE: I have nothing further in this matter, Mr. Examiner.

MR. WARNELL: Okay. Case No. 14149 and Case No. 14150 will be taken under advisement.

If there's nothing else, we'll go ahead and conclude Docket No. 23-08.

[Hearing concluded.]

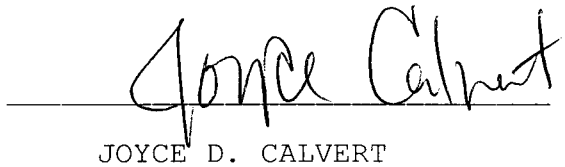
* * *

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 10th day of July, 2008.



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 1-38 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, 10th day of July, 2008.

Joyce D. Calvert
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