

1 NEW MEXICO OIL CONSERVATION DIVISION

2 STATE LAND OFFICE BUILDING

3 STATE OF NEW MEXICO

4 CASE NO. 10496

5
6 IN THE MATTER OF:

7
8 The Application of Southland Royalty
9 Company for an unorthodox gas well
10 location, downhole commingling, and
11 to amend Division Administrative Order
12 No. NWU-80, San Juan County,
13 New Mexico.

14
15 BEFORE:

16
17 DAVID R. CATANACH

18 Hearing Examiner

19 State Land Office Building

20 JUNE 25, 1992

21
22
23 REPORTED BY:

24 DEBBIE VESTAL

25 Certified Shorthand Reporter
for the State of New Mexico

ORIGINAL

A P P E A R A N C E S

FOR THE NEW MEXICO OIL CONSERVATION DIVISION:

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Santa Fe, New Mexico 87504

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BY: W. THOMAS KELLAHIN, ESQ.

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Appearances

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WITNESSES FOR THE APPLICANT:

1. ALAN ALEXANDER

Examination by Mr. Kellahin

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Examination by Examiner Catanach

15

2. SCOTT DAVES

Examination by Mr. Kellahin

19

Examination by Examiner Catanach

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3. KAY STEWART-HICKS

Examination by Mr. Kellahin

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1 EXAMINER CATANACH: Call the hearing
2 back to order. At this time we'll call Case
3 10496, Application of Southland Royalty Company
4 for an unorthodox gas well location, downhole
5 commingling, and to amend Division Administrative
6 Order No. NWU-80, San Juan County, New Mexico.

7 Are there appearances in this case?

8 MR. KELLAHIN: Mr. Examiner, Tom
9 Kellahin of the Santa Fe law firm of Kellahin,
10 Kellahin & Aubrey, appearing on behalf of the
11 applicant, and I have three witnesses to be
12 sworn.

13 EXAMINER CATANACH: Any other
14 appearances?

15 Will the three witnesses, please, stand
16 and be sworn in.

17 [The witnesses were duly sworn.]

18 MR. KELLAHIN: Mr. Examiner, here's our
19 package of proposed exhibits. The case number is
20 wrong, but it is the Aztec 700 well.

21 MR. KELLAHIN: I would like to call Mr.
22 Alan Alexander.

23 ALAN ALEXANDER

24 Having been duly sworn upon his oath, was
25 examined and testified as follows:

EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Alexander, would you, please, state your name and occupation.

A. My name is Alan Alexander. I'm employed as a senior staff landman with Meridian Oil Company in Farmington, New Mexico.

Q. Have you testified in that capacity before the Oil Conservation Division on prior occasions for your company?

A. I have.

Q. And pursuant to your employment as a landman, have you made a study of the land issues involved in this particular application on the Aztec 700 well?

A. I have.

MR. KELLAHIN: We tender Mr. Alexander as an expert landman.

EXAMINER CATANACH: He is so qualified.

Q. (BY MR. KELLAHIN) Let me have you turn, Mr. Alexander, turn to the Meridian exhibit book. Behind tab "Exhibit 1" is the application, but let's turn to Exhibit 2. I'd like you to help summarize for the Examiner the different

1 requests that Meridian is making on behalf of
2 Southland Royalty Company with regards to what we
3 call the Aztec 700 well.

4 So that we don't confuse each other,
5 let's start with the Fruitland Coal spacing for
6 the Aztec 700 and look at the first display
7 behind Exhibit No. 2.

8 A. Yes. The first display behind Exhibit
9 No. 2 is the offset operator plat for the Aztec
10 No. 700 well, which shows the spacing unit for
11 the Fruitland Coal portion of the commingled and
12 the offset operators therefor.

13 Q. A coal well at this proposed location
14 in the south half of Section 14, will that be at
15 a standard or at an unorthodox location?

16 A. It will be unorthodox.

17 Q. Why is it unorthodox?

18 A. It is too close to the northern
19 boundary of the south half spacing unit.

20 Q. And it should be a 790-foot setback and
21 it is not?

22 A. That's correct.

23 Q. Did Meridian attempt to locate that at
24 a standard coal-gas location?

25 A. Yes, we did.

1 Q. Were you successful?

2 A. No, we were not with regards to the
3 present application. We did on a previous
4 occasion look at this project strictly from the
5 Fruitland Coal Formation, and we had a location
6 only for the Fruitland Coal that would have been
7 standard.

8 Q. Why were you not able to obtain a
9 standard location?

10 A. Because we changed the scope of the
11 project to include the commingled of the Pictured
12 Cliffs Formation to capture those remaining
13 reserves. And that necessitated a move to the
14 north, up in the northeast of the southwest
15 quarter, in order to get into the Pictured Cliffs
16 fairway.

17 Q. Within the -- I'm sorry. Is this
18 federal or state or fee acreage?

19 A. This is federal acreage.

20 Q. Were you able to obtain the Bureau of
21 Land Management's approval for a standard
22 coal-gas location in the south half of 14?

23 A. No, we were not.

24 Q. Have they approved, at least
25 preliminarily, the drilling at the unorthodox

1 location?

2 A. Yes, they have.

3 Q. So part of the application is the
4 unorthodox location for the coal-gas; right?

5 A. That's correct.

6 Q. We'll have a south half dedication;
7 plus you want to commingle the Fruitland Coal
8 with the Pictured Cliffs?

9 A. That's correct.

10 Q. And this is a new drill?

11 A. That's correct.

12 Q. Let's turn now to the next display
13 following, still within Exhibit No. 2, and have
14 you identify for us the Pictured Cliffs proposed
15 nonstandard proration unit.

16 A. The exhibit following the first exhibit
17 under Exhibit No. 2 is again an off-set operator
18 plat, but it depicts the Pictured Cliffs spacing
19 unit in this area. It's an historical spacing
20 unit that was established many years ago,
21 consisting of the west half of the northwest
22 quarter and the north half of the southwest
23 quarter.

24 Q. Where is the existing well to which the
25 nonstandard PC spacing unit is currently

1 dedicated?

2 A. That would be the Aztec No. 3 well, and
3 it's located in the southwest quarter of the
4 northwest quarter.

5 Q. As part of this application, do you
6 seek then to replace that well with the Aztec 700
7 and maintain and continue on then the existing
8 nonstandard proration unit in the Pictured
9 Cliffs?

10 A. Yes, sir, that's correct.

11 Q. Will this location be standard or
12 unorthodox for Pictured Cliffs production?

13 A. It will again be unorthodox for
14 Pictured Cliffs production because again it is
15 too close to the lease boundary line.

16 Q. You're seeking then to amend the
17 administrative order that approved the PC
18 nonstandard proration unit to substitute a new
19 well which will be at an unorthodox location?

20 A. That's correct.

21 Q. And then to dedicate that well in that
22 production with the Fruitland Coal in a
23 commingled wellbore?

24 A. That is correct.

25 Q. Let's turn to Exhibit 3 and look

1 further at the Pictured Cliffs and how the
2 spacing units within Section 14 have been
3 developed. That display is a little
4 complicated. If you'll take a minute and help us
5 identify the current nonstandard proration units
6 that now exist within that section for the PC
7 wells.

8 A. Yes. If you will focus on Section 14
9 of 28 North, 11 West, you will see the L-shaped
10 tract that we just described in the offset
11 operator plat being the west half of the
12 northwest quarter and the north half of the
13 southwest quarter.

14 You'll see an identical L-shaped tract
15 that covers acreage over in the eastern half of
16 the unit. You'll also notice that the south half
17 of the south half is dedicated to the Pictured
18 Cliffs well being the Aztec No. 6 well. And
19 there's an 80-acre, being the west half of the
20 northeast quarter that is dedicated to the No. 5
21 well.

22 And then if you look, offsetting
23 Section 14 you will see that there are several
24 other, in many instances, nonstandard proration
25 units that have been historically dedicated to

1 the Pictured Cliffs Formation in this area.

2 Q. When we are looking at the ownership of
3 production in the Pictured Cliffs and the
4 Fruitland Coal, do we have common ownership if we
5 dedicate those two productive formations to this
6 well?

7 A. Yes, we do.

8 Q. The ownership in the south half of 14
9 is going to be the same as the ownership in the
10 proposed nonstandard proration unit for the
11 Pictured Cliffs?

12 A. That's correct.

13 Q. The 80-acre tract, which is the east
14 half of what appears to be the northwest quarter,
15 that's acreage that is not yet dedicated to a
16 Pictured Cliffs well?

17 A. That is correct.

18 Q. Do the owners in that area currently
19 participate in any of the Pictured Cliffs wells
20 in the section?

21 A. Yes, they do. They participate in the
22 No. 5 well that's located up in the northwest
23 quarter of the northeast quarter.

24 Q. Okay. Who is the operator of the
25 80-acre tract I've just described?

1 A. Southland Royalty Company is the
2 operator.

3 Q. When you're trying to examine and
4 locate from a land perspective the drilling
5 window, if you will, that will allow you to drill
6 for Pictured Cliffs and Fruitland and to have
7 common ownership, will that exist in the
8 northeast of the southwest where the well is to
9 be located?

10 A. Yes. The drilling window actually
11 extends in the north half of the southwest
12 quarter. When you take in the combination of the
13 needs for the Fruitland Coal and the Pictured
14 Cliffs Formation, that is the limitation of your
15 drilling window.

16 Q. From a land perspective then, we have
17 an 80-acre tract that would have common ownership
18 for which the engineers and geologists can
19 determine the best location?

20 A. That's correct.

21 Q. When we go back to Exhibit No. 2 and
22 the two displays, have you satisfied yourself
23 that you have identified the appropriate parties
24 to receive notice of this application?

25 A. Yes, sir, we have.

1 Q. Has notice of this application been
2 provided to those people?

3 A. It has.

4 Q. And have you received to your knowledge
5 any objection from any of those parties notified?

6 A. We have not received any objection per
7 se. We did have on the party that you'll see on
8 page 1 of the exhibit for the offset operator for
9 the Fruitland Coal, there is an entity which
10 would currently show as Chaparral Oil & Gas, Inc.
11 In our prior applications we had misidentified
12 that corporation as Chaparral Resources, which is
13 another corporation.

14 And we have since obtained a waiver of
15 our notice period from Chaparral Oil & Gas, which
16 you have, Mr. Kellahin.

17 Q. All right. That was executed by Jerry
18 Sandel on behalf of his company?

19 A. That is correct.

20 Q. Any other changes or corrections with
21 regards to notification?

22 A. No, sir, there are not.

23 MR. KELLAHIN: That concludes my
24 examination of Mr. Alexander.

25 EXAMINATION

1 BY EXAMINER CATANACH:

2 Q. Mr. Alexander, you stated that you
3 could not drill a standard coal-gas well
4 location?

5 A. Not with the change of the scope of the
6 project to capture the remaining Pictured Cliffs
7 reserves in the commingled. If we were simply
8 going to drill a Fruitland Coal well, we can
9 obtain a standard location for that alone.

10 Q. I thought you mentioned that the BLM
11 may not have even approved the standard coal-gas
12 well location.

13 A. Not with the current project with it
14 being commingled in a PC.

15 Q. I see.

16 MR. KELLAHIN: Mr. Examiner, there's a
17 display, I think, that will help answer that
18 question. If you would turn behind tab Exhibit
19 5, there's a topo map.

20 EXAMINER CATANACH: Uh-huh.

21 MR. KELLAHIN: And there's the triangle
22 that shows the current unorthodox location?

23 THE WITNESS: That's correct.

24 MR. KELLAHIN: Did the BLM require you
25 to move to that current location for this

1 particular well?

2 THE WITNESS: Yes, sir, they did.

3 Mr. Examiner, if you will look just
4 south of that triangle, you will see a ridge that
5 runs on the topographic map. We attempted to
6 locate the well on top of that ridge, which would
7 have been a standard location for both stated
8 purposes. And for endangered species reasons we
9 were not allowed to locate the well on top of
10 that ridge. And we had to move it down off that
11 ridge into a wash, and that's why the well is
12 currently located where it is today.

13 Q. (BY EXAMINER CATANACH) Okay. If you
14 could have, you would have drilled a standard
15 location for both formations?

16 A. Yes, sir.

17 Q. But the topography didn't allow you to
18 do that?

19 A. That is correct.

20 Q. Okay. So that's the main consideration
21 in the unorthodox location?

22 A. Yes, sir.

23 MR. STOVALL: When you go over to the
24 west of that ridge, what is that like? Do you
25 see where I'm talking about where your lines get

1 further apart again? It looks like it's
2 flatter.

3 THE WITNESS: It is flatter over in
4 that area. However, we're again moving away from
5 the Pictured Cliffs fairway when we move to the
6 west. And it would severely limit the project
7 and its ability to capture any remaining Pictured
8 Cliffs reserves in this area.

9 Q. (BY EXAMINER CATANACH) So geology does
10 have a part in this, or it's not simply
11 topography, there's some reservoir
12 considerations?

13 A. Yes, sir, there is.

14 Q. What's the current status of the Aztec
15 No. 3, Mr. Alexander?

16 A. I believe that it's currently shut-in
17 and hasn't produced for some time period.

18 Q. Do you know what Southland plans to do
19 with the well?

20 A. Yes, sir. We plan on plugging and
21 abandoning that well.

22 Q. That nonstandard PC unit was
23 established back in 1955?

24 A. I don't recall the date right off the
25 top of my head.

1 Q. Was that approved by NWU-80?

2 A. Yes, sir, that's correct.

3 Q. Okay. Mr. Alexander, who owns the east
4 half of the northwest quarter?

5 A. The east half of the northwest quarter
6 is -- the working interest is owned by Southland
7 Royalty Company, and it is a federal leasehold.

8 Q. Does Southland have any plans to
9 develop that acreage?

10 A. That depends upon the current project,
11 Mr. Examiner.

12 Q. The interest ownership in the various
13 proration units is common?

14 A. It is common between the Pictured
15 Cliffs and the Fruitland Coal Formation spacing
16 units for this particular well, if I understand
17 your question correctly.

18 Q. So those interest owners have the same
19 percentage in production?

20 A. Yes, sir, they do.

21 Q. Okay. Who are those interest owners,
22 Mr. Alexander?

23 A. Well, both of those are federal
24 leases. The working interest is owned by
25 Southland Royalty Company, and there's a half

1 percent override owned by an individual.

2 Q. On both of the proration units?

3 A. Yes, sir. It's a common lease. It's
4 the same lease.

5 EXAMINER CATANACH: I see. That's all
6 I have of the witness.

7 Bob?

8 MR. STOVALL: No.

9 EXAMINER CATANACH: You had your
10 chance.

11 MR. STOVALL: I'll get another shot at
12 Mr. Alexander before the day is over.

13 SCOTT DAVES

14 Having been duly sworn upon his oath, was
15 examined and testified as follows:

16 EXAMINATION

17 BY MR. KELLAHIN:

18 Q. Would you, please, state your name and
19 occupation?

20 A. My name is Scott Daves. I'm currently
21 a reservoir engineer with Meridian Oil. I've
22 been with Meridian since 1987. Before that I
23 graduated from Colorado School of Mines.

24 MR. KELLAHIN: Mr. Daves spells his
25 last name D-a-v-e-s.

1 THE WITNESS: Right.

2 Q. (BY MR. KELLAHIN) Have you on prior
3 occasions testified before the Division?

4 A. No, sir. This is my first time.

5 Q. Summarize again your educational
6 background.

7 A. I have a degree in petroleum
8 engineering from Colorado School of Mines, and
9 I've since graduated and worked for Meridian Oil
10 as either a drilling engineer or a reservoir
11 engineer.

12 Q. Have you been part of the technical
13 team that has worked on the various aspects for
14 the Aztec 700?

15 A. Yes, sir, since the beginning of it.

16 Q. Tell us generally the areas of your
17 responsibility.

18 A. As a reservoir engineer, one of my
19 primary functions is to develop those open drill
20 blocks of Fruitland Coal or the various different
21 formations that we have.

22 Q. In addition have you developed and have
23 a recommendation for the Examiner on an
24 allocation of production between the Fruitland
25 Coal and the Pictured Cliffs?

1 A. Yes, sir, I do.

2 MR. KELLAHIN: We tender Mr. Daves as
3 an expert reservoir engineer.

4 EXAMINER CATANACH: He is so
5 qualified.

6 Q. (BY MR. KELLAHIN) Let's deal with the
7 allocation issue first, if you don't mind.

8 A. Sure.

9 Q. Let's turn to Exhibit 6. In
10 approaching a solution or a recommendation for an
11 allocation formula, did you utilize any other
12 wells that your company operates that have a
13 similar issue in terms of Pictured
14 Cliffs-Fruitland Coal allocation in a downhole
15 commingled well?

16 A. Yes, I did. The well we used
17 principally for this was the Gordon 5, which is a
18 downhole commingled recompletion.

19 Q. Refresh the Examiner's memory about the
20 general mechanics of how that allocation formula
21 is utilized for the No. 5, the Gordon 5.

22 A. Basically, if I'm not mistaken, the
23 formula sums the total production between the two
24 wells and then allocates the Pictured Cliffs and
25 the Fruitland Coal gas due to one of the two

1 reservoir performances. And in this case it is
2 the Pictured Cliffs because you do have a strong
3 historical performance that you can base your
4 Pictured Cliffs' forecast on.

5 Q. With that background and information,
6 what did you ultimately decide to recommend for
7 an allocation formula for the Aztec 700?

8 A. A method similar -- basically exact to
9 that where we based the production for the
10 Pictured Cliffs off of historical production in
11 the general area. We could not do that on the
12 specific well because it hasn't been drilled yet,
13 but you can look at the offset performance and
14 analogize to come up with a model that you could
15 allocate production for the Pictured Cliffs.

16 Q. Take us through your formula.

17 A. Okay. The way the formula is stated
18 here the general equation is the total production
19 is equal to Fruitland Coal production plus
20 Pictured Cliffs' production. And then basically
21 I rearranged the equation to solve for Fruitland
22 Coal production, which would be equal to the
23 total production, minus the Pictured Cliffs'
24 production.

25 And then here the real trick you will

1 know what your total production is from your
2 sales, but the Pictured Cliffs' production is
3 based off of field analogy. And what I basically
4 came up with here is an exponential decline
5 similar to what was in the Gordon 5, but it's
6 based on offset production for the general area
7 of the subject well.

8 Q. Are you satisfied that that will give
9 you a reliable means by which to determine the
10 production attributable to the Pictured Cliffs?

11 A. Yes, I'm fairly confident in that.

12 Q. Then what do you do?

13 A. What you would do at that point is the
14 production for the Pictured Cliffs would be based
15 on this exponential decline, which is
16 historical. And from that you would subtract it
17 off of the total production to allocate the
18 Fruitland Coal production.

19 Q. When we turn to Exhibit 7, what does
20 that tell us?

21 A. What that is is the determination of
22 the initial ratio with which you will apply the
23 exponential formula. And what it basically
24 states is the Pictured Cliffs' portion, the
25 initial Pictured Cliffs' production will be the

1 ratio of the total production -- or the Pictured
2 Cliffs' production divided by the total
3 production on the initial flow test for each
4 formation. I can walk you through that if you
5 need.

6 Q. It's not necessary. Is that your
7 recommendation to the Examiner for an allocation
8 formula to attribute production to each of the
9 two fields?

10 A. Yes, sir, it is.

11 Q. Let me address with you the objectives
12 that Meridian and Southland are attempting to
13 accomplish with this wellbore. What is the
14 reason you're proposing a commingled Pictured
15 Cliffs and Fruitland well in this particular
16 area?

17 A. Primarily the Fruitland Coal itself
18 would be, from a drill standpoint, marginally
19 economic. It would be something that you could
20 go out and do, but it wouldn't be a great
21 project. It would just be a marginal project.

22 However, there are Pictured Cliffs'
23 reserves we've identified in the subject drill
24 block that are still there. However, the
25 wellbore that's there cannot produce them.

1 Mechanically it has failed.

2 So therefore we saw an opportunity to
3 change the scope of this from a basic Fruitland
4 Coal well to a commingled and then produce what
5 remaining Pictured Cliffs' reserves are there and
6 also the Fruitland Coal reserves.

7 Q. Have you been able to conclude that the
8 approval of the downhole commingling of these two
9 formations at this location will prevent waste?

10 A. Yes, absolutely. The reserves that
11 were associated with the Aztec 3 are now no
12 longer producible.

13 Q. Can it be done in a way that protects
14 correlative rights?

15 A. Yes, sir.

16 Q. Give me some of the economics. What
17 does a straight-up vertical well for the
18 Fruitland Coal cost?

19 A. Approximately \$240,000. Drilled,
20 completed, and with facilities.

21 Q. For Fruitland Coal?

22 A. Right.

23 Q. What about the PC, straight-up vertical
24 by itself?

25 A. Approximately \$200,000.

1 Q. What do you save, if anything, if you
2 try to drill these as a dual completion?

3 A. As a dual completion you would be
4 required to have two strings of tubing, a larger
5 casing size, dual facilities on the surface.
6 Therefore, you're almost going back with the
7 exception of the drilling costs to a two-well
8 completion because you would end up with -- the
9 primary costs would be the facilities and the
10 tubulars.

11 Q. What do you achieve in an economic
12 savings if you have approval for downhole
13 commingling?

14 A. You would basically save approximately
15 \$170,000 over completing both wells separately.

16 Q. And that's simply looking at the costs
17 of the wells involved?

18 A. Right. Right.

19 Q. Will the remaining producible reserves
20 in the Pictured Cliffs justify a stand-alone well
21 for that formation?

22 A. No, sir.

23 Q. The only way you can capture those
24 remaining reserves is to do it the way you've
25 proposed?

1 A. Right.

2 Q. Are you familiar with the Division Rule
3 303 and the commingling procedures they set
4 forth?

5 A. Yes, sir.

6 Q. When you look at those items, have you
7 found any instances of information that would
8 cause to you conclude that you cannot safely
9 commingle production from these two pools?

10 A. No, sir, I haven't.

11 Q. Fluids are compatible?

12 A. Yes, sir.

13 Q. Do either of these formations produce
14 water that give you a problem?

15 A. No, sir.

16 Q. The coal is a dry coal here?

17 A. Right. This whole area is a dry coal.

18 Q. What about any pressure differentials?
19 What do you find on pressure?

20 A. The pressures are within 5 percent of
21 one another in general within the entire area.

22 Q. No problem with downhole commingling
23 that you can find?

24 A. No, sir.

25 Q. Is there a display that you can use in

1 here for reference to show us from an engineering
2 aspect how we end up in this particular location,
3 recognizing the constraints that Mr. Alexander
4 has imposed upon him in finding a drill block, if
5 you will, that has common ownership? And he's
6 shown you the north half of the southwest
7 quarter; right?

8 A. Right.

9 Q. As an engineer when you're trying to
10 pick the best possible location within that
11 80-acre tract, how did you come to find the
12 location that you're proposing for the Aztec 700?

13 A. There were two considerations that we
14 were looking at. The first one was we wanted to
15 move away from the old wellbore, the Aztec 3, and
16 also to move closer into the Pictured Cliffs to
17 ensure that we did have economic reserves. And
18 the combination of the two things would ensure
19 what we felt would be economic reserves for a
20 commingled.

21 Q. Mr. Catanach asked Mr. Alexander about
22 Meridian or Southland's plans on the open 80-acre
23 tract. Tell us what you understand those plans
24 to be.

25 A. Should this well be a success, the

1 obvious choice, if it was a successful
2 commingled, would be to move up into that
3 undrilled 80-acre drill block and pursue a well
4 similar to this one.

5 Q. Is there any advantage that you see to
6 those owners within that undrilled tract to have
7 this application approved?

8 A. Absolutely. That proves up their
9 acreage essentially.

10 MR. KELLAHIN: That concludes my
11 examination of Mr. Daves.

12 EXAMINATION

13 BY EXAMINER CATANACH:

14 Q. Mr. Daves, you stated that it was to
15 their advantage, is it also not correct that the
16 proposed well might drain some of that acreage?

17 A. Yes, sir.

18 Q. Have you calculated the remaining PC
19 reserves?

20 A. For the associated drill block,
21 approximately 200 million cubic feet.

22 Q. Is that recoverable?

23 A. Yes, sir.

24 Q. How much reserves would you need for a
25 stand-alone PC well to justify the --

1 A. It would be similar to a Fruitland Coal
2 well, being the depths are the same and the
3 completion techniques are the same.
4 Approximately 1.2 to 1.5 Bcf.

5 Q. In your allocation formula, you said
6 you utilized offset PC production. Are those all
7 in the same Pictured Cliffs' pool?

8 A. Yes, sir. They're the direct offsets.

9 Q. Okay. And were the individual wells
10 that you analyzed, were they pretty close to what
11 you came out with for an average?

12 A. Yes.

13 Q. I assume you averaged them?

14 A. Yes, sir.

15 Q. They were all within --

16 A. -- a reasonable range.

17 Q. Okay. Mr. Daves, do you know what type
18 of completion is utilized for coal wells?

19 A. In this area the typical completion
20 would consist of a hydraulic fracture with prop
21 sand.

22 Q. Now, the PC is right above the coal; is
23 that correct?

24 A. Right below.

25 Q. Below, I'm sorry. Has Southland or

1 Meridian ever had any problem with fracturing the
2 coal into the PC?

3 A. Not to my knowledge. I haven't really
4 studied that aspect of it.

5 EXAMINER CATANACH: That's all I have.

6 MR. KELLAHIN: I'd like to call Kaye
7 Stewart-Hicks. She's a geologist with Meridian.

8 KAYE STEWART-HICKS

9 Having been duly sworn upon her oath, was
10 examined and testified as follows:

11 EXAMINATION

12 BY MR. KELLAHIN:

13 Q. Would you, please, state your name and
14 occupation?

15 A. My name is Kaye Stewart-Hicks. I'm a
16 geologist with Meridian Oil.

17 Q. On prior occasions have you testified
18 before the Division?

19 A. Not this Division, but up in Montana I
20 testified before the Montana State Commission.

21 Q. Would you summarize for the Examiner
22 your education?

23 A. I graduated from Montana State in
24 1978. In 1979 I went to work for Burlington
25 Northern, which has subsequently become Meridian

1 Oil. I've worked for them since 1979.

2 Q. As part of your duties, have you made a
3 study of the geology involved for the Aztec 700?

4 A. Yes, I have.

5 MR. KELLAHIN: We tender Ms.
6 Stewart-Hicks as an expert petroleum geologist.

7 EXAMINER CATANACH: Ms. Hicks is so
8 qualified.

9 Q. (BY MR. KELLAHIN) Let me direct your
10 attention to the geologic display found behind
11 the exhibit tab No. 4. Does this represent your
12 work?

13 A. Yes, it does.

14 Q. In addition at the tail end of the
15 exhibit book, there's a cross-section, is there
16 not?

17 A. That's correct.

18 Q. Let's go with the structure map first.
19 Would you identify that?

20 A. This is a structure map with the datum
21 on the base of the Fruitland Coal. The contour
22 interval is 20 feet. On the map you can see the
23 Aztec 700 in the southwest quarter of Section
24 14. You can see that it strikes northwest to
25 southeast with a gentle dip to the northeast at

1 approximately 50 feet per mile. So it's really
2 pretty flat.

3 Q. Have you examined any other of the
4 geologic aspects involved with the Fruitland
5 Coal?

6 A. Yes, I have.

7 Q. What did you do?

8 A. That brings you to the second page
9 behind Exhibit No. 4 where you see a net clean
10 coal isopach. That net clean coal isopach
11 represents the total net clean coal within the
12 Fruitland Formation. Again you can see the Aztec
13 700 identified in the southwest quarter of
14 Section 14.

15 Q. With the south half of 14 being
16 utilized as the coal spacing unit and for a
17 standard well, you need to be located in the
18 southwest quarter?

19 A. That is correct.

20 Q. And your setbacks would be 790 then --

21 A. That's correct.

22 Q. -- around the outer boundary of the
23 spacing unit?

24 A. That's correct.

25 Q. Within that drilling window do you see

1 any geologic information that would cause you to
2 believe that one location was better than
3 another?

4 A. No, I do not. It all looks like it
5 should be similar thickness.

6 Q. Let's turn now to the PC and have you
7 describe for us what that shows you.

8 A. This third map is a Pictured Cliffs net
9 pay isopach. Net pay was defined as resistivity
10 greater than a shale baseline and porosity
11 greater than 6 percent. Contour interval on this
12 map is 10 foot, and it's been colored for ease
13 with the thicker pay, net pay of greater than 60
14 feet colored yellow; net pay 40 to 60, kind of an
15 ocher color; and net pay greater than 20 to 40 is
16 orange.

17 And on that map you can see that the
18 net pay fairway that we've talked about briefly
19 is trending in a northwest-southeast trend with
20 the thicker net pay to the northeast.

21 Q. Do you use net pay isopachs in Pictured
22 Cliffs to help you pick the best possible
23 location within a spacing unit?

24 A. Yes, we do.

25 Q. Is there a direct correlation between

1 pay thickness in the Pictured Cliffs and the
2 productivity of those wells?

3 A. Yes. With thicker pay you get more
4 reserves.

5 Q. Let's look at the cross-section.
6 You've prepared a stratigraphic cross-section?

7 A. That is correct.

8 Q. What does this tell you with regards to
9 the specific Aztec 700 proposal?

10 A. Okay. This cross-section was hung on
11 the base of the coal, which is a laterally
12 continuous marker bed in this area. If you look
13 at the Fruitland Coal, Fruitland Coals are
14 colored green. You can see that the basal coal
15 is laterally continuous, consists of two to three
16 seams. And generally you can see that the
17 thickness between the two wells on either side of
18 the Aztec 700 are fairly close.

19 If you look at the Pictured Cliffs
20 Formation, which is colored yellow, you can see
21 that the southwest portion of the cross-section,
22 you have a thin Pictured Cliffs net pay. As
23 you're going to northeast, it gets thicker.

24 Between the two wells, the Aztec 7-E
25 and the Aztec No. 8-E, which is where we're

1 trying to drill the 700, you can see that we're
2 seeing a change in the thickness. We hope to
3 capitalize on the increasing thickness at the
4 proposed location.

5 Q. Does the proposed location represent to
6 you the optimum location within that drill block
7 to test for both the Pictured Cliffs and the
8 Fruitland Coal?

9 A. Yes, it does.

10 Q. And the basic reason for that is
11 proximity to the thickness of the Pictured Cliffs
12 pay?

13 A. That is correct.

14 Q. And as you move back to the south and
15 west, you move away from the thicker pay section?

16 A. That's correct.

17 MR. KELLAHIN: That concludes my
18 examination of Ms. Stewart-Hicks. At this point,
19 Mr. Examiner, we tender Meridian's Exhibits 1,
20 No. 8 would be the Certificate of Mailing, and I
21 believe that would include all the exhibits, so
22 it's 1 through 8, Mr. Examiner.

23 EXAMINER CATANACH: Exhibits 1 through
24 8 will be admitted as evidence. I have no
25 questions.

1 MR. KELLAHIN: Mr. Examiner, I have
2 misplaced Mr. Sandel's waiver on behalf of
3 Chaparral. If I may submit that to you after the
4 hearing, I would appreciate the opportunity to do
5 so.

6 EXAMINER CATANACH: You may do so.

7 MR. STOVALL: Let me clarify something
8 again with Mr. Alexander if I could to make sure
9 I understood you. You did send a notice to
10 Chaparral Resources thinking that that was the
11 company?

12 MR. ALEXANDER: Yes, sir, that is
13 correct.

14 MR. STOVALL: And so its appearance
15 here is only because you sent the notice, not
16 because it is actually an offset on this
17 affidavit?

18 MR. ALEXANDER: That is correct.
19 Chaparral Resources notified us that they did not
20 own an interest in this area. And then we again
21 looked at the title work that we had done and
22 noticed that there was two almost similar
23 companies, but the other one was oil and gas and
24 we located with Mr. Sandel and obtained a
25 waiver.

1 MR. STOVALL: But the timing of that
2 was such it wasn't the 20 days, so you would have
3 to have the waiver in order to get by today's
4 hearing date; is that correct?

5 MR. ALEXANDER: That is correct.

6 MR. KELLAHIN: Here is the waiver
7 form. I would have to find the signed copy, but
8 that is the language that Mr. Sandel approved.

9 MR. STOVALL: That's all I have. I
10 just wanted to make sure because when I saw the
11 card I questioned whether I heard you correctly,
12 but I did, so that's it.

13 EXAMINER CATANACH: Mr. Alexander,
14 briefly explain the association between Southland
15 and Meridian.

16 MR. ALEXANDER: Southland Royalty
17 Company is a wholly-owned legal entity under
18 Burlington Resources, as is Meridian Oil
19 Company. They're sister companies.

20 MR. STOVALL: Southland actually still
21 exists as a company then?

22 MR. ALEXANDER: As a legal entity they
23 do.

24 MR. STOVALL: So Burlington holds the
25 stock for Southland?

1 MR. ALEXANDER: That's correct.

2 MR. STOVALL: Somewhere I thought
3 Meridian had absorbed that, but I guess not.

4 MR. ALEXANDER: There is no stock on
5 the market for Southland Royalty Company.

6 MR. STOVALL: It's all wholly-owned?

7 MR. ALEXANDER: Yes.

8 MR. STOVALL: Right.

9 MR. ALEXANDER: But the entity has not
10 been dissolved. It is still a legal entity.

11 EXAMINER CATANACH: Is there anything
12 further?

13 MR. STOVALL: Let me go ahead -- and
14 this really has nothing to do with this case.
15 But as long as I've got you here, I'll ask you.

16 You're saying that under the Burlington
17 umbrella, the two companies exist and when the
18 organizational chart comes down and they both
19 exist separately splits, it's not a subsidiary of
20 Meridian, but is a subsidiary of Burlington?

21 MR. ALEXANDER: Yes, sir, that's
22 correct. They are two separate legal entities,
23 sister companies, if you could categorize them as
24 that.

25 MR. STOVALL: But all the employees are

1 actually Meridian employees who do work for the
2 Southland Company; is that correct?

3 MR. ALEXANDER: That is correct.

4 MR. STOVALL: Okay. That answers that
5 question.

6 EXAMINER CATANACH: There being nothing
7 further in this case, Case 10496 will be taken
8 under advisement.

9 [And the proceedings were concluded.]

10
11
12
13
14 I do hereby certify that the foregoing is
15 a complete record of the proceedings in
16 the Examiner hearing of Case No. 10496,
heard by me on June 25 1982.

17 David R. Catanch, Examiner
18 Oil Conservation Division
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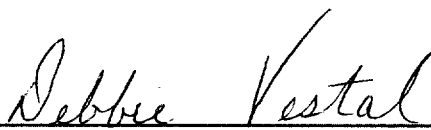
1 CERTIFICATE OF REPORTER

2
3 STATE OF NEW MEXICO)
4 COUNTY OF SANTA FE) ss.
5

6 I, Debbie Vestal, Certified Shorthand
7 Reporter and Notary Public, HEREBY CERTIFY that
8 the foregoing transcript of proceedings before
9 the Oil Conservation Division was reported by me;
10 that I caused my notes to be transcribed under my
11 personal supervision; and that the foregoing is a
12 true and accurate record of the proceedings.

13 I FURTHER CERTIFY that I am not a
14 relative or employee of any of the parties or
15 attorneys involved in this matter and that I have
16 no personal interest in the final disposition of
17 this matter.

18 WITNESS MY HAND AND SEAL JULY 6, 1992.
19
20

21 
22 _____
23 DEBBIE VESTAL, RPR
24 NEW MEXICO CSR NO. 3
25