

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO

12 October 1988

EXAMINER HEARING

IN THE MATTER OF:

Application of Meridian Oil, Inc. for CASE
a horizontal directional drilling pi- 9498
lot project and special operating rules
therefor, Rio Arriba County, New Mexico,
and
Application of Meridian Oil, Inc. for 9499
a horizontal directional drilling pi-
lot project and special operating rules
therefor, San Juan County, New Mexico.

BEFORE: David R. Catanach, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Division:	Robert G. Stovall Attorney at Law Legal Counsel to the Division State Land Office Bldg. Santa Fe, New Mexico
For Meridian Oil, Inc:	W. Thomas Kellahin Attorney at Law KELLAHIN, KELLAHIN & AUBREY P. O. Box 2265 Santa Fe, New Mexico 87504

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E X H I B I T S

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1 MR. CATANACH: Call next Case
2 9498.

3 MR. STOVALL: Application of
4 Meridian Oil, Inc., for horizontal directional drilling
5 pilot project and special operating rules therefor, Rio
6 Arriba County, New Mexico.

7 MR. CATANACH: Are there ap-
8 pearances in this case?

9 MR. KELLAHIN: Mr. Examiner,
10 I'm Tom Kellahin of the Santa Fe law firm of Kellahin,
11 Kellahin & Aubrey.

12 I'm appearing on behalf of the
13 applicant and I have four witnesses to be sworn.

14 MR. CATANACH: Any other ap-
15 pearances?

16 Will the witnesses please
17 stand and be sworn in?

18
19 (Witnesses sworn.)
20

21 MR. KELLAHIN: Mr. Examiner we
22 would like for hearing purposes to consolidate the testi-
23 mony of this case with the following case, which is 9499.

24 The testimony is similar and
25 the witnesses are the same for each case.

1 MR. CATANACH: At this time
2 we'll call Case 9499.

3 MR. STOVALL: Application of
4 Meridian Oil, Inc., for a horizontal directional drilling
5 pilot project and special operating rules therefore, San
6 Juan County, New Mexico.

7 MR. KELLAHIN: Mr. Examiner,
8 the exhibit book is organized where Exhibit A is the geo-
9 logic montage, which we have put on the wall. There is an
10 extra copy of that display in the exhibit book.

11 Exhibit B is the balance of
12 the exhibit book. There are exhibit pages in Exhibit B
13 numbered 1 through 49, and those exhibits refer to the re-
14 servoir engineering witness' testimony, the drilling eng-
15 ineer witness' testimony, and the landman's testimony
16 about ownership and notices.

17 The exhibits are separated so
18 that you can look behind the tab for the Sunray Well and
19 find all the relevant exhibits for that application and if
20 you'll look behind the tab for the 32-5 Well, you'll find
21 all the exhibits that refer to that well.

22 Exhibit A is a montage that
23 refers to both the wells plus other additional information.

24 The first witness is a geolo-
25 gic witness for Meridian, Mr. Dana Craney.

1 DANA L. CRANEY,
2 being called as a witness and being duly sworn upon his
3 oath, testified as follows, to-wit:
4

5 DIRECT EXAMINATION

6 BY MR. KELLAHIN:

7 Q Mr. Craney, would you please state your
8 name and occupation?

9 A My name is Dana L. Craney. My occupa-
10 tion is Senior Staff Geologist for Meridian Oil, Inc.

11 Q Mr. Craney, as a geologist did you pre-
12 viously testify before the Examiner in a hearing held
13 earlier this year upon Meridian's application to increase
14 the vertical limits for the Cedar Hills coal production?

15 A Yes, sir, I did.

16 Q And did you also testify before Examiner
17 Catanach in the July hearing called by the Division to con-
18 sider the adoption of special rules and regulations for the
19 Basin coal gas production in the San Juan Basin?

20 A Yes, that is correct.

21 Q Pursuant to your employment, have you
22 further made a geologic study of the geologic information
23 that surrounds the two applications by Meridian to drill
24 horizontal wells in the Fruitland coal formations?
25

1 A I have.

2 Q Pursuant to that study have you caused
3 to be prepared Exhibit A?

4 A Yes, sir.

5 MR. KELLAHIN: At this time,
6 Mr. Examiner, we tender Mr. Craney as an expert geologist.

7 MR. CATANACH: He is so qual-
8 ified.

9 Q Mr. Craney, if you'll take a pointer,
10 sir, and go to the display on the wall,

11 Before you discuss the details of your
12 display, simply take a moment and identify the information
13 on the display and show us how to read the information .

14 A Okay. This is a montage consisting of a
15 net coal isopach. This isopach map is from a publication
16 by Kelso (sic) and others published in 1988. The publica-
17 tion was prepared for GRI.

18 In addition we have four type logs. The
19 type log for the Fruitland Basal Pool is the Cedar Hill
20 type log. They type logs for the two proposed horizontal
21 wells and the well for the San Juan 404 High Angle Well in
22 the 30-6 Unit.

23 The -- the montage will be used to dis-
24 cuss the regional relationships of our horizontal well
25 pilot project.

1 Q What is the source of the information
2 that shows the coal thickness or the coal isopach display
3 on the -- on the map?

4 A Okay. The source of the information is
5 a publication by Kelso, and others, in 1988. It was a pub-
6 lication made for gas researching.

7 Q Is that information utilized by you and
8 other geologists before the Examiner in the July hearing
9 with regards to the special rules for --

10 A Yes, sir, it was. This is the same iso-
11 pach map that we used (not clearly understood>)

12 Q Last year the Division approved for Mer-
13 idian the drilling of a horizontal or high angle well in
14 the San Juan Basin. Can you identify that well for us?

15 A Yes, sir. The San Juan 30-6 No. 404
16 Well, located in the northeast of 23, 30 and 7. On the
17 isopach map the 30 and 6 unit is this orange denoted there.

18 Q Would you describe generally some of the
19 background for Mr. Catanach about the geology for the San
20 Juan 30 and 6 Unit 404 Well?

21 A Okay, sir. The -- the geology of the --
22 of the 404 Well consists of a target zone, which -- Meri-
23 dian target -- would be about two-thirds of the coal in the
24 Fruitland formation existed in the lower portion of the 404
25 Well in 30 and 6 Unit.

1 The 404 was used as a high angle well to
2 test this type of technology. The wellbore intercepted the
3 top of this coal in the target zone and extends down later-
4 ally across approximately 38 to 40 feet of coal and it TD'd
5 at the bottom of the basal coal.

6 Q That was a pilot project by Meridian to
7 drill in the Fruitland Coal formation a horizontal well,
8 was it not?

9 A Yes.

10 Q What were you attempting to do with that
11 well that you could not accomplish with a conventional
12 well?

13 A With a high angle well, or a horizontal
14 well, we're attempting to extend the borehole laterally
15 through the formation to increase the surface area exposure
16 to the wellbore and to increase or optimize their chances
17 of intercepting (unclear) fractures

18 Q And has that well been drilled and com-
19 pleted at this time?

20 A Yes, sir, the well was drilled; it is an
21 operation and production success and that will be discussed
22 in detail in a few minutes.

23 Q Let's go now to the San Juan 32-5 Well
24 and have you describe why Meridian seeks to drill that well
25 as an additional pilot project.

1 A Okay. The -- the reason why Meridian
2 has chosen two other locations to -- for our pilot project
3 is the fact that the way that the coals are deposited in
4 the coastal environment behind the retreating Pictured
5 Cliff shoreline, we have a variety of situations which have
6 occurred.

7 We have anywhere from thin. couple inch
8 thick coals to coals over 20 feet thick.

9 We have different amounts of impurities
10 in the coal from the streams that have flowed through the
11 swamps.

12 We have increased coal maturation to the
13 north due to overburden and thermal maturation, so that we
14 have different trends of coal that behave differently,
15 would behave differently when we try to produce this.

16 Meridian will be actively drilling in
17 these areas. We were actively drilling in this area, so to
18 test the technology of a horizontal well, we -- we can't
19 drill in the same type of trend that's producing so proli-
20 fically from our vertical wellbores in the 30 and 6 Unit.
21 We have to try other trends where Meridian owns some pro-
22 perty.

23 The obvious difference on the well logs
24 is the fact that the lower portion of the 404 Well shows
25 about 40 feet of coal in 7 zones; whereas, in the 32-5 Unit

1 we see that we're not going after the basal coal, we're
2 going after an upper coal which is better developed than
3 the basal and we're looking at one single coalbed to -- to
4 stay horizontal in during the extensive lateral, and this
5 coalbed is approximately 25 feet.

6 So the wireline logs shows an obvious
7 difference between these two trends, and as I gave you a
8 brief geological description how as you go across the basin
9 you'll see different geological trends from just the geolo-
10 gical history of the Fruitland coal.

11 Q Contrast that, now to the Sunray Well.

12 A To contrast the 32-5 Well to the Sunray,
13 we see that in the Sunray we have a very thick basal coal
14 now developed which we're going -- which we're proposing to
15 drill horizontally in.

16 This coal is approximately 19 feet thick
17 in the Sunray Well and, as you see, we're going to -- we're
18 dealing with the basal coal now instead of this upper coal.

19 These basal coals would not be the same
20 pool between the two, would not be laterally continued over
21 that -- that distance.

22 Q Other than the well that Meridian has
23 drilled in the San Juan 30 and 6 Unit, plus these two other
24 proposed permits, are there any other permitted horizontal
25 wells in the basin area?

1 A Yes, sir. Horizontal recovery permit-
2 ted two wells in Sections 20 and 28 of 32, 5, and these
3 wells permitted for directional drilling approximately
4 three miles from our proposed 32-5 No. 100 Well.

5 Q Has that company drilled either of those
6 wells yet?

7 A No, sir, they have not.

8 Q In summary, Mr. Craney, what do you at-
9 tempt to learn from implementing both of the drilling of
10 these wells from a geologic perspective?

11 A From a -- well, from a geological per-
12 spective, again we're just -- we want to learn the techno-
13 logical advantages of trying to stay in the coal zone while
14 we're drilling vertically. We wish to learn the degree of
15 fracturing that we can drill laterally through, and the
16 horizontal technology will help us to determine the viabil-
17 ity of this type of drilling technique in different geolo-
18 gical regimes.

19 Q And the well you drilled in the 30 and 6
20 unit does to provide you a sufficient basis of information
21 upon which to determine whether or not you'll have further
22 horizontal wells in the basin area.

23 A No, sir, a single data point would not
24 accomplish that.

25 MR. KELLAHIN: That concludes

1 my examination of Mr. Craney.

2 We would move the introduction
3 of Exhibit A.

4 MR. CATANACH: Exhibit A will
5 be admitted into evidence.

6 I have no questions of this
7 witness.

8 MR. STOVALL: I don't know if
9 Mr. Craney is the witness to answer the question or not.
10 You can maybe advise me at the end of it.

11

12 CROSS EXAMINATION

13 BY MR. STOVALL:

14 Q You were present at the -- the proposed
15 Fruitland coal rules hearing in Farmington and you testi-
16 fied, and in those hearings part of the Committee witnesses
17 suggested, part of what they suggested, was provisions for
18 horizontal drilling, is that correct?

19 A Yes, sir.

20 Q Are the proposed locations and
21 techniques being used consistent with what was proposed by
22 the -- I realize no rule has yet been entered in that case.
23 What I'd like to know, are these -- what you're proposing
24 -- is it consistent with what was suggested for rules for
25 horizontal drilling in that case?

1 A I can answer, but, yes, they are, and
2 yes, it will be discussed in some detail further on in this
3 case.

4 MR. STOGNER: I have nothing
5 further.

6 MR. KELLAHIN: Mr. Examiner,
7 we'll call Mr. Craig McCracken. Mr. McCracken is a reser-
8 voir engineer and he wants to discuss with you the results
9 of the San Juan 36 Unit 404 Well, plus the reservoir infor-
10 mation on the two wells that are the subject of these two
11 applications.

12
13 CRAIG A. MCCRACKEN,
14 being called as a witness and being duly sworn upon his
15 oath, testified as follows, to-wit:

16
17 DIRECT EXAMINATION

18 BY MR. KELLAHIN:

19 Q Mr. McCracken, for the record would you
20 please state your name and occupation?

21 A My name is Craig A. McCracken. I'm a
22 Senior Reservoir Engineer with Meridian Oil Corporation in
23 Farmington, New Mexico.

24 Q Mr. McCracken, have you previously tes-
25 tified before the Division as a reservoir engineer?

1 A No, I have not.

2 Q Would you take a moment and describe for
3 the Examiner when and where you obtained your engineering
4 degree?

5 A I obtained my degree June, 1981, from
6 the Pennsylvania State University.

7 Q Subsequent to graduation in '81 would
8 you summarize for us what has been your employment exper-
9 ience as a reservoir engineer?

10 A Up until December of 1985 I was employed
11 in the Drilling Engineering Department. Since then I've
12 been employed in the Reservoir Engineering Department with
13 Meridian in Farmington, and for the last three years I have
14 been a licensed Professional Engineer in the State of New
15 Mexico.

16 Q Among your duties as a reservoir
17 engineer for your company, have you been assigned the prin-
18 cipal task of studying either one or both of the wells that
19 are the subject of these applications?

20 A Yes, I have, both wells.

21 Q Which of these wells was your principal
22 duty?

23 A The 32 and 5 Unit No. 100.

24 Q And you've also studied the information
25 on the Sunray Well?

1 A Yes, sir, I have.

2 Q And you've also studied the drilling,
3 completion, and production information from the 404 Well.

4 A Yes, I have.

5 MR. KELLAHIN: We tender Mr.
6 McCracken as an expert reservoir engineer.

7 MR. CATANACH: He is so qual-
8 ified.

9 Q Mr. McCracken, let's take a moment, sir,
10 and have you start with the exhibit booklet which is marked
11 B, and turning to page number 1, let's talk about the well
12 that was drilled on last year's horizontal order. It's the
13 404 Well?

14 A Yes.

15 Q Would you summarize for the Examiner,
16 first, in a horizontal perspective, what was allowed to oc-
17 cur by the Division and then what you in fact did when you
18 drilled the well in terms of direction.

19 A Exhibit Number One shows a surface loca-
20 tion plat with the 90 degree window that was permitted for
21 the No. 404, and the dashed line represents the actual hor-
22 izontal extent of the well the way it was drilled.

23 Q Let me have you turn now to page 2 and
24 show us a from a vertical perspective what occurred with
25 the drilling of the 404 Well.

1 A The 404 was first drilled vertically
2 through the coal seam and then plugged back.

3 What Exhibit Two represents is a verti-
4 cal cross section of the way the well was actually drilled.
5 As you can see, it is a highly deviated well as opposed to
6 a true horizontal well.

7 Q More, there'll be more detail gone into
8 later as to why the well was drilled the way it was.

9 Q The next witness is a drilling engineer
10 that actually conducted the drilling of the well and pro-
11 poses to supervise the drilling of the other two wells?

12 A That is correct.

13 Q Turn to page 3 now, Mr. McCracken, and
14 identify and describe the information on that exhibit page.

15 A Exhibit Number Three, and perhaps I
16 should go back to Exhibit Number Two, Exhibit Number Two
17 was presented during the original hearing to permit the
18 highly deviated well.

19 Exhibit Number Three is a description of
20 the actual conditions and the way the well was actually
21 drilled and casing was actually set. Again, more detail
22 will be gone into by our drilling engineer later.

23 Q Have you made a study of the production
24 information that's available on the 404 Well, Mr.
25 McCracken?

1 A Yes, I have.

2 Q And is that information shown on page 4?

3 A Yes, it is.

4 Q Would you review with Mr. Catanach the
5 information on page 4 and describe for us what you conclude
6 as a reservoir engineer based upon this information?

7 A On Exhibit Four there is a production
8 curve showing the weekly rates that the 404 has made since
9 being completed in December of 1987. The red curve repre-
10 sents the gas production. The blue curve represents the
11 water production and the black curve represents the water
12 cut in barrels per MMCF of gas.

13 What this shows is that the production
14 from this well has steadily increased since it was first
15 produced, which is fairly typical of a coal well, and what
16 I conclude from this curve is that it is too early to tell
17 when or what the peak rate on this well might be. As com-
18 pared to other Fruitland coal wells in the 30 and 6 unit,
19 this well makes approximately 2.5 to 2.6-million cubic feet
20 a day. The average for the area is somewhat under 2.0 MMCF
21 per day, so we can conclude from that that this well, pro-
22 ductionwise, is a better well generally than wells in the
23 area.

24 Q With that basis of information, Mr.
25 McCracken, have you then studied to determine whether or

1 not Meridian ought to drill further horizontal pilot pro-
2 jects in the basin?

3 A Yes, I have.

4 Q Let me direct your attention now, sir,
5 to the Sunray Well.

6 Page 5 is the first display for that
7 well?

8 A Yes, it is.

9 Q Let's take a moment and have you des-
10 cribe horizontally what you propose to do with the drilling
11 of that well?

12 A Exhibit Number Five shows the surface
13 plat of Section 11, Township 30 North, Range 10 West. We
14 propose to drill the well in the southwest quarter 660 from
15 the south line, 270 feet from the west line for a surface
16 location of said Section 11.

17 This is an unorthodox location which has
18 previously been approved.

19 What we propose to do is to permit ap-
20 proximately a 30 degree window with the bottom hole loca-
21 tion, as the exhibit shows, being within the orthodox
22 location box in order to protect the correlative rights of
23 the interest owners.

24 Q What is the significance of the dashed
25 line running from the point where you commence drilling at

1 the surface location and running towards the northeast?
2 See the dashed line?

3 A Yes, sir.

4 Q What's the purpose of that line?

5 A The dashed line represents the orienta-
6 tion of the well the way we would like to go in order to
7 maximize the horizontal distance of the well while still
8 staying within an orthodox location box as specified by the
9 red squares.

10 Q What is the purpose, then, of the cross
11 hatched area on each side of the dashed line?

12 A We would like to have the horizontal
13 borehole permitted within this range.

14 Q For what purpose, Mr. McCracken?

15 A In order that if any deviation were en-
16 countered on either side of the way we would like to go, we
17 would have approval to have some leeway on either side of
18 the wellbore.

19 Q It will give you the flexibility, then,
20 to follow within that approved area and not have to come
21 back for further approval.

22 A That is correct.

23 Q Have you had an opportunity, Mr.
24 McCracken, to review the prior order the Division entered
25 for the 404 Well, which was Order No. R-8526? Have you

1 seen that?

2 A Yes, I have.

3 Q Have you proposed actual language that
4 Mr. Catanach might utilize in the drafting of a similar
5 type order for the Sunray Well?

6 A Yes, I have.

7 Q And where would he find that language?

8 A Exhibit Number Six.

9 Q What have you done with page 6 of
10 Exhibit B?

11 A What we have done is specified the sur-
12 face location as it is specified on the plat, Exhibit
13 Number Five, specified the bottom hole locations represent-
14 ed by the wellbore ending at various points within the or-
15 thodox location box.

16 As you can see, if we went for an arc on
17 this well, as far as approval, an arc may take us outside
18 of that orthodox location box. We would like to stay in
19 it, so depending on how close we're able to stay to our
20 proposal of going right for the corner of the northeast or-
21 thodox location box, if we're deviated from that a few de-
22 grees from either side the well would be shorter to stay
23 within that box.

24 The coordinates at the bottom of the
25 application represent those end points which are drawn on

1 the plat, Exhibit Five.

2 Q All right. Does that conclude your pre-
3 sentation on the Sunray Well?

4 A Yes, it does.

5 Q Let's turn now to the tab on the 32 and
6 5 Well commencing at page 36.

7 A What page 36 shows is the same type of
8 surface location plat. We have proposed this well to have
9 a surface location of 1765 feet from the south line and
10 1485 feet from the west line of Section 23, Township 32
11 North, Range 6 West.

12 This is an orthodox surface location,
13 and what the dashed line represents is that we propose to
14 drill this well directly south with a radius of 1600 feet.
15 The arc on either side, 30 degrees on either side, repre-
16 senting a total of 60 degrees, is again the window that we
17 would like to have approved so that if we deviate slightly
18 from the due south direction, we can -- we won't have to
19 get another approval.

20 And again on page 37 we have styled an
21 order which verbally expresses what is shown in the plat on
22 page 36.

23 Q In summary, Mr. McCracken, what do you
24 as a reservoir engineer seek to accomplish with the appro-
25 val and drilling of these two horizontal wellbores?

1 A Mainly we seek to get a better areal
2 extent of the basin and see in a couple areas that we have
3 shown previously are geologically significantly different
4 than our 404 Well to allow us to evaluate the horizontal
5 drilling technique in general.

6 MR. KELLAHIN: That concludes
7 my examination of Mr. McCracken, Mr. Catanach.

8

9

CROSS EXAMINATION

10 BY MR. CATANACH:

11 Q Mr. McCracken, neither of these wells have
12 been drilled yet, is that correct?

13 A That's correct.

14 Q You say the Sunray already has an ap-
15 proved unorthodox location?

16 A To the best of my knowledge, yes, it
17 does.

18 Q Can you get that number for me?

19 A Certainly.

20 Q On the Sunray Well, explain to me why
21 you couldn't go with the arc again? You wanted to --

22 A Because of we go with an arc and go with
23 the longest distance, which is represented by the line, the
24 dashed line going from the surface location to the
25 northeast corner of that box, an arc would take us outside

1 the orthodox location box and we're concerned with the
2 protection of correlative rights.

3 Q That would be an orthodox bottom hole
4 location under -- under the current rules.

5 A To the best of my knowledge, yes.

6 Q Neither of these wells are -- they're
7 not in the Cedar Hill Pool, are they?

8 A No, they are not. I believe that they
9 would be in undesignated pools.

10 Q Do you know what Meridian intends to do
11 if the rules for the Fruitland Pool are -- say, go to
12 320-acre spacing, do you know what acreage you will dedi-
13 cate to the two wells at this point?

14 A I believe our land department witness
15 is prepared to testify on that.

16 Offhand, I don't know.

17 Q The coordinates that you -- that you
18 have on page six, those are just the coordinates of the two
19 outer lines, is that correct?

20 A That's correct.

21 MR. CATANACH: I think that's
22 all I have at this time.

23 The witness may be excused.

24 MR. KELLAHIN: Mr. Catanach,
25 our next witness is the drilling engineer for Meridian.

1 His name is Patrick Bent.

2

3

PATRICK BENT,

4

being called as a witness and being duly sworn upon his
5 oath, testified as follows, to-wit:

6

7

DIRECT EXAMINATION

8

BY MR. KELLAHIN:

9

Q Mr. Bent, for the record would you
10 please state your name and occupation?

11

A My name is Patrick Bent. I'm the
12 Regional Drilling Engineer for Meridian Oil in Farmington,
13 New Mexico.

14

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

16

A No, I have not.

17

Q Would you summarize for Mr. Catanach
18 what has been your educational background?

19

A Yes, sir. I graduated from the Univer-
20 sity of Wyoming in 1980 with a degree in petroleum engi-
21 neering, Since then I have been employed with Meridian
22 Oil, previously El Paso Exploration, in the Drilling De-
23 partment for the last eight years.

24

Q Were you involved in the drilling of the
25 404 Well?

1 A Yes, I was. I was the Project Engineer.

2 Q And have you reviewed the orders and the
3 transcripts and the testimony from that case?

4 A Yes, I have.

5 Q And have you prepared a drilling program
6 for the Sunray Well and the 32 and 5 Well?

7 A Project engineers under my direct super-
8 vision have.

9 Q And you have reviewed those drilling
10 programs?

11 A Yes, I have.

12 MR. KELLAHIN: We tender Mr.
13 Bent as an expert drilling engineer.

14 MR. CATANACH; He is so qual-
15 ified.

16 Q Let me direct your attention, sir, to
17 page number seven.

18 Well, let's go back. Let's talk about
19 the 404 Well, bring him up to date with where we are with
20 that. Let's start with Exhibit Three.

21 A Page number three is a cross-sectional
22 of the actual wellbore on the 36 Unit No. 404.

23 Q Let's take a moment and remind Mr. Cat-
24 anach of what the Division authorized Meridian to do for
25 the drilling of that well and then what you, in fact, did

1
2 do.

3 A The Division authorized the drilling of
4 a high angle Fruitland coal well within a 90 degree arc
5 east to south.

6 The direction was -- the window was
7 given in order to allow Meridian Oil leeway in determining
8 the optimum wellbore direction from an oriented course
9 taken during the drilling of the vertical portion of the
10 well.

11 The well was drilled vertically through
12 the Fruitland coal, course taken in the coal, orientation
13 determined. The well was logged, plugged back to a prede-
14 termined kickoff point. At that point we began building
15 our curve at 12 degrees per 100 foot. We built our curve
16 to an inclination of 83 degrees at which time we were at
17 the top of the target zone. We ran 7-inch casing back to
18 surface. We then drilled through the targeted Fruitland
19 interval as seen on the montage map to a true vertical
20 depth of 3036, giving us a lateral extension in the Fruit-
21 land coal of 557 feet.

22 Q What did the Commission or the Division
23 authorize for a lateral extension?

24 A The (unclear) lateral extension as seen
25 by the arc on page 1, was 1470 feet. This allowed for a

1 962-foot exposed coal wellbore in the targeted formation.

2 Q Let's turn now to the Sunray Well and
3 contrast what you did with the 404 Well with what you pro-
4 pose to accomplish with the Sunray Well.

5 A Okay.

6 Q Let's start now with page 7.

7 A On page 7 is the proposed cross section-
8 al of the Sunray H 201. The operational aspect is very
9 similar. We will drill the well vertically through the
10 Fruitland coal, log the well, plug back to a predetermined
11 kickoff point.

12 We will begin building angle at 12 de-
13 grees per 100 foot; drill our radius of curvature to the
14 top of the Fruitland formation at approximately 89 degrees
15 inclination. We will then drill through the Fruitland for-
16 mation laterally for approximately 1554 feet.

17 Q Have you had an opportunity to review
18 the order in the 404 well?

19 A Yes, I have.

20 Q And do you have proposed written lan-
21 guage that Mr. Catanach might utilize in drafting the order
22 for the Sunray Well?

23 A Yes, I do, and that in on page 8.

24 Q What have you done on page 8?

25 A Verbally explained again the proposed

1 operational aspects.

2 Q And how does the operational aspects for
3 the Sunray Well differ from the 404 Well?

4 A The 404 was permitted as a high angle
5 Fruitland coal well, whereas the Sunray is considered a
6 horizontal, a few degrees difference.

7 Q Let's go now to the 32-5 Well and look a
8 the drilling program for that well, and I think that starts
9 on page 38.

10 A Page 38, again, is a proposed cross sec-
11 tional of the 32-5-E No. 100. Again the operational
12 aspects are very similar. We will drill vertically through
13 Fruitland coal, log the well, plug back to a predetermined
14 kickoff point, build angle at 12 degrees per 100 till we
15 reach an inclination of 89 degrees at the top of the Fruit-
16 land coal.

17 At that point we will drill through the
18 Fruitland coal for a horizontal displacement in the coal
19 seam of 1062 feet.

20 And again page 39 is a verbal explana-
21 tion of the cross section.

22 Q Mr. Catanach, if he desires, can use the
23 written narrative on 39 as the order portion of this order
24 to approve the drilling program for the well?

25 A If he so desires.

1 Q When do you propose to commence these
2 wells, Mr. Bent?

3 A We would like to begin drilling oper-
4 ations on the 32-5 No. 100 by November 1st due to the
5 limitations of the Big Game Use Area, as seen on page 36.

6 Q 36, you're adjacent to the Navajo Lake.
7 You're in a wildlife habitat area?

8 A That's correct; also a Big Game Use
9 Area which BLM has restrictions as far as activity is con-
10 cerned. We have to begin construction or drilling prior to
11 the December 1st deadline. We would like to start drilling
12 approximately in November 1st.

13 Q Do you have similar environmental con-
14 straints on the Sunray Well?

15 A No, there are not.

16 Q Is that an area that the surface is sub-
17 ject to winter hazards where you have access problems dur-
18 ing the winter?

19 A The 32-5 Well is; the Sunray not as
20 much.

21 Q And when do you propose to commence that
22 well?

23 A Immediately following the 32-5 Unit No.
24 100.

25 MR. KELLAHIN: That concludes

1 my examination of Mr. Bent.

2

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CROSS EXAMINATION

4

BY MR. CATANACH:

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Q Mr. Bent, what kind of problems, if any,
did Meridian have in drilling the 404 Well?

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A Our only considered problem was the fact
that we could not extend the wellbore in the Fruitland coal
horizontally as far as we had initially planned. This was
due to the unconsolidated nature of the coal as we drilled
through it. We were not able to maintain our high angle
approach due to the softness of the coal and we lost approx-
imately 5 degrees inclination in a short period, which
prevented us from reaching that maximum lateral extent.
All efforts to regain that orientation directionally
failed.

17

18

Other than that there were no
operational problems.

19

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Q You don't think you'll have the same
kind of problems with the two proposed wells?

21

22

23

A At this time, no. Again, the Sunray
Well appears to be a more consolidated coal, as does the
32-5.

24

25

MR. CATANACH: That's all I
have of the witness. He may be excused.

1 MR. KELLAHIN: Mr. Catanach,
2 our final witness is a landman for Meridian, Mr. David
3 Poage.

4
5 DAVID M. POAGE,
6 being called as a witness and being duly sworn upon his
7 oath, testified as follows, to-wit:

8
9 DIRECT EXAMINATION

10 BY MR. KELLAHIN:

11 Q Mr. Poage, would you please state your
12 name and occupation?

13 A My name is David M. Poage and I work as
14 a Senior Staff Landman for Meridian Oil, Inc.

15 Q Mr. Poage, have you previously testified
16 as a landman before the Division?

17 A I have not.

18 Q Would you take a moment and describe
19 what has been your educational background and employment
20 experience?

21 A I graduated in 1972 from Western New
22 Mexico University with a Bachelor's degree in marketing
23 and graduated in 1973 with a Master of Arts degree in
24 business administration.

25 Went to work thereafter in 1973 for El

1 Paso Natural Gas Company as a landman and have worked for
2 El Paso Natural Gas Company and El Paso Exploration Com-
3 pany and now Meridian Oil.

4 Q Do your duties as a landman for Meridian
5 Oil, Inc., include determining the ownership and royalty
6 owners of the various spacing units that will be involved
7 in the two subject wells?

8 A Yes.

9 Q And are you also familiar with the own-
10 ership of those spacing units that surround the two subject
11 spacing units?

12 A Yes.

13 Q Let's turn to the exhibit book and let's
14 use page 5 of the exhibit book as a reference point.

15 The Sunray Well is to be located in the
16 southwest quarter of Section 11 and the initial spacing is
17 160 acres based upon the statewide rules for the Fruitland.
18 Is that not true?

19 A That's correct.

20 Q What do you propose to do in the event
21 the Division adopts 320-acre spacing for this formation?

22 A This particular well, if 320-acre spac-
23 ing were adopted, we would still -- Meridian would still
24 own -- have 100 percent ownership of the well.

25 Q Regardless of the 320 ownership --

1 orientation, whether it's west half or southwest -- south
2 half, Meridian would have the 100 percent working interest
3 owner (sic) in Section 11.

4 A That's correct.

5 Q And if we turn, then, to the 32 and 5
6 Well, and look at page 36, for example, what's the situa-
7 tion for that well?

8 A The situation would be identical there
9 in that Meridian would be 100 percent owner on either 160-
10 acre basis or 320-acre basis.

11 Q Let's go now to your particular involve-
12 ment with the Sunray application, and I direct your atten-
13 tion to page number 9.

14 Would you identify the information on
15 page 9?

16 A The exhibit on page 9 shows the spacing
17 unit for the Sunray Well in the southwest quarter of Sec-
18 tion 11, as well as the eight surrounding 160-acre spacing
19 units.

20 The area colored in yellow is owned 100
21 percent by Meridian and operated by Meridian.

22 Q Describe what you have caused to occur
23 when we look at the document on page 10.

24 A On page 10 it is just a matter of pro-
25 tection, we notified all of the overriding royalty interest

1 owners by letter of this hearing and of our intention to
2 drill this well.

3 Q There is a small difference in over-
4 riding royalty owners in the 160-acre spacing units sur-
5 rounding this spacing unit, are there not?

6 A That is correct.

7 Q And so to avoid any possible conflict
8 with those overriding royalty owners, you have notified
9 those parties of this application.

10 A That is correct.

11 Q Have you received any objection from any
12 of those royalty owners?

13 A No, sir, we have not.

14 Q In fact, have you received any objection
15 from anyone?

16 A No, sir.

17 Q Included with the letter sent on page
18 10, then, was a copy of the application letter for hearing
19 and the application itself?

20 A Yes, sir.

21 Q And when we turn then to page 16 what do
22 we find there?

23 A On page 16 and also on -- continuing on
24 page 17, 18, 19 and 20 are the names and addresses of the
25 overriding royalty interest owners on the (unclear).

1 Q And the following pages 21 through 35
2 are what, sir?

3 A They are copies of the certified return
4 receipts that were sent out with all these letters.

5 Q Okay. Let's turn to the 32 and 5 Well
6 now, and start with page 40, if you will.

7 What is shown on page 40?

8 A Page 40 is a plat showing the present
9 outline of this San Juan 32-5 Unit and also spotted in the
10 southwest quarter of Section 23 is the proposed well.

11 Q What type of unit is this?

12 A This is a Federal unit.

13 Q And for what formations is this acreage
14 unitized?

15 A For all formations.

16 Q The unit ownership will be the same for
17 spacing units that surround this spacing unit?

18 A Yes, sir.

19 Q Identify for us page 41, if you will,
20 please.

21 A Page 41 again is a plat showing the
22 160-acre tract upon which the well is to be located and the
23 8 surrounding 160-acre tracts.

24 It, again in yellow, colored in yellow,
25 shows that acreage owned 100 percent by Meridian.

1 Q And identify the document on page 42.
2 What have you caused to occur here?

3 A Page 42 is a copy of the letter sent to
4 all the working interest owners in the San Juan 32-5 Unit
5 notifying them of -- of the wells proposed to be drilled
6 and the ownership, how they were going to be borne 100
7 percent by Meridian.

8 Q And page 43?

9 A 43, page 43, is a list of those working
10 interest owners.

11 Q And then 44.

12 A Page 44 is a copy of the plat of devel-
13 opment furnished to the regulatory bodies in compliance in
14 compliance with the terms and provisions of the unit agree-
15 ment.

16 MR. KELLAHIN: That concludes
17 my examination of Mr. Poage.

18 Just to check back, I believe
19 Mr. McCracken misspoke awhile ago when he said the Sunray
20 Well's current surface location had been approved. In fact
21 it has not been approved.

22 What he was confused about is
23 the original location for the well was a standard location
24 and that had been approved, or was subject to approval.

25 We thereafter move the surface

1 location to accommodate the horizontal drilling for the
2 well and so we won't have an order yet until you enter one
3 in this case.

4 MR. CATANACH: Okay.

5 MR. KELLAHIN: We would at
6 this time move the introduction of Exhibit B.

7 MR. CATANACH: Exhibit B will
8 be admitted as evidence.

9

10 CROSS EXAMINATION

11 BY MR. CATANACH:

12 Q Mr. Poage, at this time you don't know
13 the orientation of the 320 unit if that becomes appropriate
14 for the pool?

15 A If this becomes appropriate we would an-
16 ticipate that these would be west half dedications.

17 Q For both wells?

18 A Yes, sir.

19 Q All the drilling costs for the 32-5
20 Well, those are all going to be Meridian's costs?

21 A Initially as a drilling block -- a 100
22 percent drilling block owner these will be paid for by Mer-
23 idian.

24 Q Is there a Fruitland participating area
25 in this unit?

1 A None presently exists.

2

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 MR. CATANACH: I don't have
any more questions.

5

6

CROSS EXAMINATION

7

BY MR. STOVALL:

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 Q Looking at the 32-5, Mr. Poage, I think
it's the 32-5, the San Juan Unit on your page 41, you
identify that as El Paso Natural Gas Company as operator.

11

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13

 What -- what is the relationship between
Meridian and El Paso Natural Gas with respect to this unit
and the ownership?

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 A Meridian and El Paso Natural Gas are af-
filiated companies and Meridian would be operating on be-
half of El Paso Natural Gas Company, who is presently the
unit operator.

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 Q Record -- record ownership of the inter-
est is in El Paso Natural Gas and not in Meridian, is that
correct?

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 A Technically it's in El Paso Production
Company's name, but El Paso Natural Gas Company is desig-
nated unit operator. Meridian will just be acting on their
behalf in matters of drilling, engineering and geology.

 MR. CATANACH: That's all the

1 questions we have of the witness. He may be excused.

2 Is there anything further in
3 9498 or 9499?

4 MR. KELLAHIN: No, sir.

5 MR. CATANACH: If not, they
6 will be taken under advisement.

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8 (Hearing concluded.)

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C E R T I F I C A T E

I, SALLY W. BOYD, C. S. R. DO HEREBY
CERTIFY that the foregoing Transcript of Hearing before the
Oil Conservation Division (Commission) was reported by me;
that the said transcript is a full, true and correct record
of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No. 9458 9459
heard by me on October 12, 1988.

David R. Cutamb, Examiner
Oil Conservation Division