1	NEW MEXICO OIL CONSERVATION DIVISION
2	STATE LAND OFFICE BUILDING
3	STATE OF NEW MEXICO
4	CASE NO. 10459
5	
6	IN THE MATTER OF:
7	
8	The Application of Bright & Company for a high angle/horizontal
9	directional drilling pilot project, special operating rules therefor,
10	and an exception to the pool's gas/oil ratio limitation factor,
11	Sandoval County, New Mexico.
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16	BEFORE:
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18	DAVID R. CATANACH
19	Hearing Examiner
20	State Land Office Building
21	April 2, 1992
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23	
2 4	REPORTED BY:
25	DEBBIE VESTAL Certified Shorthand Reporter ORIGINAL

1	for the State of New Mexico
2	
3	APPEARANCES
4	
5	FOR THE NEW MEXICO OIL CONSERVATION DIVISION:
6	ROBERT G. STOVALL, ESQ.
7	General Counsel State Land Office Building
8	Santa Fe, New Mexico 87504
9	
10	FOR THE APPLICANT:
1 1	HINKLE, CLOX, EATON, COFFIELD & HENSLEY 500 Marquette, Northwest, Suite 740
1 2	Albuquerque, New Mexico 87102-2121 BY: JAMES BRUCE, ESQ .
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EXHIBITS Page Identified Exhibit No. 1 Exhibit No. 2 Exhibit No. 3 Exhibit No. 4 Exhibit No. 5

EXAMINER CATANACH: Call Case 10459, 1 2 please. MR. STOVALL: Application of Bright & 3 Company for a high angle/horizontal directional drilling pilot project, special operating rules 5 therefor, and an exception to the pool's gas-oil ratio limitation factor, Sandoval County, New 7 Mexico. 9 EXAMINER CATANACH: Are there appearances in this case? 10 11 MR. BRUCE: Mr. Examiner, my name is Jim Bruce from the Hinkle law firm in Albuquerque 12 representing the applicant. I have two witnesses 13 to be sworn. 14 EXAMINER CATANACH: Are there any other 15 appearances? Will the two witnesses, please, 16 stand to be sworn in. 17 [The witnesses were duly sworn.] 18 MR. BRUCE: Mr. Examiner, before we 19 begin, the applicant would like to dismiss that 20 21 portion of the application regarding the GOR 22 exception. BRUCE GATES 23 24 Having been duly sworn upon his oath, was examined and testified as follows: 2.5

1 EXAMINATION BY MR. BRUCE: 2 Would you, please, state your full name Q. 3 and city of residence? Bruce Gates. I'm from San Antonio, Α. 5 Texas. 6 What is your occupation, and who are 7 Q. you employed by? 8 9 Α. I'm a geologist for Bright & Company. Have you previously testified before 10 Q. the OCD? 11 Α. No. 12 Would you, please, outline your 13 Q. educational and employment background? 14 I have a bachelor's and a master's 15 16 degree in geology from the University of Texas, and I have worked as a geologist for Bright & 17 Company for the last five years. 18 Okay. And does your area of 19 Ο. responsibility include southeast New Mexico? 20 21 Α. Yes, it does. And are you familiar with the 22 Q. 23 geological matters pertaining to this 24 application?

Α.

2.5

Yes.

MR. BRUCE: Mr. Examiner, I tender Mr. 1 2 Gates as an expert geologist. EXAMINER CATANACH: He is so 3 qualified. (BY MR. BRUCE) Mr. Gates, just ο. briefly, what does Bright & Company seek in this application? 7 We seek to directionally drill a well Α. 8 9 in the west half of Section 35, 21 North, 2 West, with the well's producing interval no closer than 10 660 feet from the boundary of the well unit. 11 It's your understanding that this well 12 Q. is in the Rio Puerco-Mancos Pool? 13 That's right. 14 Α. Or within one mile of the pool? Q. 15 Α. Yes. 16 Referring to Exhibit 1, would you, 17 Q. please, describe its contents for the Examiner? 18 Α. Yeah. This is a land plat showing our 19 proposed well location in the southwest corner of 20 21 Section 35. It also shows the offset operators 22 and the proposed well unit in the west half of 23 Section 35. You see our acreage is in the gray 24 stipple, the four sections, 25, 26, 35, and 36.

And we're also in the process of

unitizing or creating a federal unit encompassing those four sections. I'm meeting in Farmington tomorrow to discuss that with the BLM.

- Q. Are there any other Mancos wells within 1800 feet of your proposal?
 - A. No, there's not.

- Q. Were the offset operators notified of this application?
- A. Yes, they were. And Exhibit 2 is an affidavit of notice containing copies of the notice letter and certified return receipts.
- Q. Now, would you refer to Exhibit 3 and discuss the geology of your prospects?
- A. This is a structure map on the top of the Niobrara, or it's in the lower Mancos. It's basically showing a monocline dipping to the north.

You see -- our objective is the anticlinal flexure is created by a change in dip that you see approximately at the contour of a plus-3,000. You have a general-sloping dip to the north, and then at that point you have an increase from about 2-1/2 degrees to 5 degrees in dip. That, we think, will create the large fractures and therefore be the most optimal

position for a horizontal wellbore.

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- Q. And Bright's acreage is outlined in yellow?
 - A. That's right -- well, not on all of them. Yeah. There's a gray stipple encompassing the four sections.
 - Q. And you mentioned this increase in flexure. Has that been shown by other operators in the area to be necessary to be a good well?
 - A. Correct. The vertical production in Rio Puerco, the best vertical production aligns along that anticlinal flexure. There's also been a couple of horizontal wells drilled there, the San Isidro 10-12 and then, the most recently, the Johnson 7-3. The 7-3 has been the best well producing approximately, averaging 250 barrels a day in the last quarter of 91.
 - Q. Would you, please, move on to Exhibit 4 and discuss that for me?
 - A. Yeah. Exhibit 4 is just a diagrammatic cross-section. It basically illustrates our concept. You see it extends from A to A prime, which would be just to the west of our proposed location. It depicts the increase in dip in the anticlinal flexure that's the objective of this

horizontal well. 1 Q. Does Bright & Company plan to test all 2 the Mancos zones? 3 Yeah. What we intend to do is drill a pilot hole, drilling through the -- a vertical 5 pilot hole -- drilling through the entire 6 Mancos. From that we'll produce certain log 7 suites to determine the zones that we think are 9 the -- will be the most prolific. From that we will plug back and kick out in that zone. 10 11 Q. Okay. Were Exhibits 1 through 4 prepared by you or under your direction? 12 Yes, they were. 13 14 15

And in your opinion is the granting of this application in the interest of conservation and the prevention of waste and the protection of correlative rights?

Α. Yes, it is.

MR. BRUCE: Mr. Examiner, I move the admission of Exhibits 1 through 4.

EXAMINER CATANACH: Exhibits 1 through 4 will be admitted as evidence.

EXAMINATION

24 BY EXAMINER CATANACH:

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Mr. Gates, what is the nearest Q.

1 | producing Mancos well in this area?

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- A. It's in Section 34. It's a vertical Mancos producer. It produced just under 27,000 barrels of oil. You see it on the map in the southwest of Section 34.
- Q. What zones within the Mancos do you anticipate being productive at this point?
- A. We call it the second bench. That's based on the logs and surrounding area. It is the zone that shows to be the less clay-rich based on the gamma ray. Obviously, that can vary from area to area, so we intend to drill our own pilot hole and monitor our own suite of logs to determine exactly for sure that that is the bench that we want to be in.
 - Q. That is the B zone?
 - A. We call it the B. I'd say it's -- I don't have the type section here. But I don't think there's any formal nomenclature. It's about 200 feet within the top of the Niobrara.
 - Q. You say there were certain geologic factors in this area that would cause fractures to occur in the Mancos?
 - A. Right.
- Q. What were those factors?

A. It appears basically, looking at the Rio Puerco Field, if you take a look at the cumulative production data in the vertical wells, that the best production lines are along a flexure or a dip change along this overall -- along this monocline.

So along that flexure we think the largest fractures will be generated or were generated, therefore, will make the best well. I think the vertical production depicts that very nicely.

- Q. And you do have this flexure dip change in Section 35?
- A. That's correct. If you look at the map, it would be approximately at the plus-3,000 foot contours where that dip change occurs.
- Q. Now, the presence of fractures in the Mancos contributes significantly to the wells' capability of producing oil?
 - A. Most definitely.

- Q. Is there a significance as to how you orientated the well within Section 35?
- A. Yeah, I think it is. The fractures, the most abundant fractures will be parallel to the anticlinal flexure. Therefore we're drilling

a well that's as perpendicular to that as we can to stay within 660 from our eastbound area.

- Q. Okay. Run that by me again. The most predominant fractures will be parallel?
- A. Approximately northeast-southwest. So we're aligning that borehole so they will be as close to perpendicular to that line as we can but at the same time stay within the 660 feet of our lease boundaries.
- Q. What is your fracture orientation or your fracture direction? How was that determined?
- A. Well, I have not done anything here, but I have done some field studies up in northwest Colorado where there is an outcropping of rock. And based on that, and I think it's documented in the literature also, that that would be the predominant fracture set. That's not going to be the only one, but it will be the dominant fracture set, the one we think will make the most prolific well.

I do anticipate another set of fractures that will run parallel to that. But by encountering the fracture set, that we will encounter, those will communicate with this other

fracture set, and we'll actually achieve -- hope
to achieve a three-dimensional communication
within the reservoir.

It's also gravity drainage, so I think we will want to be drilling down-structure. Some gas-driven, but mostly gravity drainage.

MR. STOVALL: Have you looked at any of the San Isidro Unit wells to the west there that have attempted to do the same thing?

- A. Oh, yes. As much information as we can get. The operators are not making everything they know public. I'm aware of -- the most up-to-date production I can get, as reported to the Oil & Gas Commission, they, like I said, the Johnson 7-3 was a successful well. I think it's located in Section 7. Don't know everything, we just are not privy to that information.
- Q. (BY EXAMINER CATANACH) That well is located where?
 - A. Section 7.

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MR. BRUCE: Section 6 and 7 to the west.

- A. And it --
- MR. BRUCE: Southwest.
- 25 A. Yes, 20 North, 2 West. I don't think I

1 have it shown on the map.

EXAMINATION

BY MR. STOVALL:

- Q. It's actually just east of where you've got the San Isidro 12; right?
- A. Correct, up in the northern part of the section. It essentially, from what I can tell, tested the same concept that we're attempting or proposing to test in Section 35.
- Q. You think that the actual fractures, the bulk of the fractures, are going to occur above the 3,000-foot line just before it starts to bend over?
- A. Correct. I have other data that pins that down exactly for us, primarily seismic data.
- Q. Your control as to that 3,000-foot line, are you comfortable with where you've mapped that?
- A. That's, what I say, I actually have seismic data that I have not presented to this hearing that defines exactly where that point is. And it's pretty close to that 3,000-foot line.
- Q. I assume your seismic information is going to show the structure rather than the

actual --

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- A. Correct. That's what we're looking for. Seismic line would basically look something like this cross-section. This is much more simple, obviously, but it's something like that. That's where we're using it for, only structure, not anything else.
- Q. I've just got a question on the -you've identified this as the Cuba Mesa Unit 35-1
 Well. Is that unitized?
- A. We're having a meeting with the BLM tomorrow to ask permission or to get that, to get a federal unit for those four sections. So that is not final yet.
 - Q. It's all federal lands?
- A. It's all federal lands. 100 percent owned by Bright, or leased by Bright.
- Q. Now, one thing, I don't have your notice thing with me right now. We're running it through to make sure -- some of those names I've recognized. Have you checked the OCD records, the ones that did not receive or that were returned to you?
- A. We had six that were returned to sender. They had changed their address. The

it. One of those was EDC. We knew where they were, so we in turn sent a new one to them. And one other I can't remember. But I think there was four that were returned to us, and we have not been able to notify.

- Q. Okay. You did check Division records to look for those addresses?
- A. Exactly. That's where -- we had a person go into the records, and that's where we got most of these addresses. So obviously some of them were out-of-date.
- Q. And I do want to check, reserve the right to recall if we find anything in our records. As I say, in this case there were some familiar names, and I just wanted to back that up to make sure.

MR. BRUCE: Okay.

EXAMINER CATANACH: I have nothing further. The witness may be excused.

MIKE HUNT

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

EXAMINATION

BY MR. BRUCE:

2.5

- Q. Would you, please, state your name and city of residence?

 A. My name is Mike Hunt from San Antonio,
 - Q. What is your occupation, and who is your employer?
 - A. I'm a division engineer with Bright & Company.
 - Q. Have you previously testified before the OCD?
 - A. No.

Texas.

- Q. Would you, please, discuss your educational and employment background for the Examiner.
- A. I have a BS in petroleum engineering from the University of Texas in 61 and a BBA from the University of Texas in 62. Worked for -I've been a petroleum engineer for 26 years and worked for Bright & Company for the last 12 years. And I handle all aspects of drilling completion facilities and reservoir engineering for Bright & Company.
- Q. And your area of responsibility includes New Mexico?
- A. Yes, sir.

Q. Are you familiar with the drilling matters related to this application?

A. Yes.

MR. BRUCE: Mr. Examiner, I tender the witness as an expert engineer.

EXAMINER CATANACH: He is so qualified.

- Q. (BY MR. BRUCE) Mr. Hunt, would you refer to Exhibit 5 and discuss how Bright & Company proposes to drill the horizontal well?
- A. Okay. We'll be setting 10-3/4-inch surface casing at 250 feet. Then we'll drill a 9-7/8 vertical hole to 4950. We'll get to 4950, we'll run a full suite of logs and evaluate the Gallup Formation and determine which zone we want to drill horizontal in.

Then we'll set a cement plug from, say, 4200 to about 3850 and dress it off. Then run our intermediate pipe 7-5/8 inch intermediate pipe down to about 3940. And on cement in the 7-5/8, it's not shown on the drawing, but we'll be running a DV tool at about 1100 feet.

On stage 1 of the cementing, we'll cement from 3940 up to the DV tool. On the second stage we'll cement from the DV tool up to the surface. And by doing this, we'll cover the

Lewis, the Pictured Cliffs, and the Fruitland,and the Ojo Alamo with good cement.

After cementing the 7-5/8, we'll go ahead and drill out and dress off that cement plug and kick off that cement plug at about 4,000 feet. We'll build angle about 17-1/2 degrees per 100 feet until we reach an angle of 86.25 degrees, which is parallel to the dip of the formation. We'll hold that angle.

And our total displacement on the well will be around 3367 feet. Td on the well will be 7569 measured and 4536 true vertical depth. And we'll be drilling this horizontal interval with foam, which is what Veterans have been using on their wells.

- Q. In the San Isidro Unit?
- A. Yes, sir.
- Q. So, in other words, this is a standard procedure for drilling the horizontal wells out here?
- 21 A. Yes.

- Q. Do you have anything else you'd like to say on this exhibit?
- A. That's all.
- Q. Was Exhibit 5 prepared by you or under

1	your direction?
2	A. Yes.
3	Q. And in your opinion is the granting of
4	this application in the interests of conservation
5	and the prevention of waste?
6	A. Yes, sir.
7	MR. BRUCE: Mr. Examiner, I move for
8	the admission of Exhibit 5.
9	EXAMINER CATANACH: Exhibit 5 will be
10	admitted as evidence.
11	EXAMINATION
12	BY EXAMINER CATANACH:
13	Q. Mr. Hunt, the advertisement for this
14	case indicates the bottom-hole location will be
15	approximately 1250 feet from the north line?
16	A. 1200 from the north line.
17	Q. 1200 feet from the north line?
18	A. Yes, sir.
19	Q. That's not what the advertisement
20	says.
21	What are the setback requirements for
2 2	this pool? Do you know, Mr. Hunt?
23	A. 660.
2 4	Q. 660 setbacks?
25	A. Yes.

1	MR. STOVALL: All the way round?
2	MR. BRUCE: And, Mr. Examiner, you
3	can't be closer to the 330 to the quarter-quarter
4	section line, I believe.
5	EXAMINER CATANACH: Okay. So even with
6	the 1200 feet from the north line, you're still
7	not encroaching on the north line?
8	MR. BRUCE: That's right.
9	MR. STOVALL: Right. I don't think
10	that creates a notice problem. I think we
11	recognize that a horizontal well, you only
12	estimate where you're going to be on the initial
13	part of it; right?
14	THE WITNESS: Yes, sir.
15	EXAMINER CATANACH: No closer than 660
16	from the west line; is that also correct?
17	THE WITNESS: Right.
18	MR. STOVALL: Was that a yes?
19	THE WITNESS: Yes.
20	MR. STOVALL: The reporter cannot
21	report nods of heads.
22	MR. BRUCE: Mine?
23	MR. STOVALL: I see her nodding hers,
24	but it doesn't go down on paper.
25	So the real spacing exception

1 requirement is that quarter-quarter boundary thing because you're crossing quarter-quarters. 2 That's right. MR. BRUCE: 3 (BY EXAMINER CATANACH) The horizontal Q. displacement is approximately 3367 feet; is that 5 right? 6 Α. Yes, sir. 7 And is that from the time when you Q. 8 reach an angle of 86 degrees? 9 That's from the surface location. 10 Α. No. That's from the surface location? 11 Q. 12 Α. [Nodded.] Okay. What distance from the surface 13 Q. 14 location do you anticipate reaching an angle of 88 degrees or 86 degrees? 15 It will be about 300 feet. Α. 16 This is considered a high-angle well? 17 Q. Yes, sir. 18 Α. MR. STOVALL: Is there any problem 19 controlling the vertical portion of that well in 20 this area? Do you tend to get pushed a little 21 bit by the formation with that slope in there? 22

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A.

big deviation problem in there. You just have to

run stabilizers. And if you do start getting

Looking at the offset wells, there's no

- deviation, lighten up on your weight and increase your RPM and straighten it out.
 - Q. (BY EXAMINER CATANACH) Mr. Hunt, do you propose or anticipate setting any casing below the intermediate?
 - A. In the area that had been setting the slotted liners, not cemented. And we'll be doing that also.
 - Q. Throughout the horizontal extended oil well?
- 11 A. Right. Yes, sir.
- Q. So you don't have any definite plans at this point to do that?
- 14 A. We will do it, right.
- 15 Q. You will do it?
- 16 A. Yes.

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- Q. Okay. What size would that be?
- 18 A. That would be 4-1/2-inch slotted line.
- 19 Q. Uncemented?
- 20 A. Yes, sir.
- Q. Okay. Is this typical of the horizontal wellbores that have been drilled in this area, this method and this type of completion?
- 25 A. Yes. This is similar to what Veterans

1 has been doing in the field, San Isidro Field.

- Q. Have they had any problems with it, to your knowledge?
- A. As Mr. Gates stated, we're not privy to what they've been doing. But from what we've found out, this is pretty well standard with what they've been doing as far as drilling the wells.
- Q. As far as surveys, directional surveys, and that type of thing, what do you propose running on the well to determine the bottom-hole locations and that type of thing?
- A. We'll be running MWD in our drill strength, measurement well drilling instrument, which will give us a survey just on about everything -- will give us a survey on every connection as we drill.
- Q. That's from surface to Td you're going to run that?
- A. Take it about every 30 feet, so you can determine your bottom-hole location every 30 feet as you drill.
- Q. Okay. So you will be able to pinpoint where the bottom-hole location terminates?
 - A. Right. Yes, sir.
 - Q. Has Bright & Company drilled any

1	horizontal wells?
2	A. We have drilled four horizontal wells
3	in the Austin Chalk in south Texas that we
4	operate.
5	Q. So you've got some experience at it?
6	A. Yes, sir.
7	EXAMINER CATANACH: I believe that's
8	all I have of the witness.
9	MR. BRUCE: I have nothing further.
10	EXAMINER CATANACH: We'd like to talk
11	to Mr. Gates for a couple minutes more.
1 2	BRUCE GATES
13	Having been previously duly sworn upon his oath,
1 4	was examined and testified further as follows:
15	EXAMINATION
16	BY MR. STOVALL:
17	Q. We just looked at our records, Mr.
18	Gates, and we do find that we have an address for
19	Pitco Production, which you had as a return. And
20	I don't know Tulsa very well, but you sent it to
21	101 East Second Street, and our address in our
2 2	bond records is 1791 Williams Center in Tulsa. I
23	don't know if those are the same addresses or
2 4	not, but you might

A. We'll redirect it to that address.

Q. Okay. I've got a question. You sent one to Mr. Chorney too. And it looks like you may have sent it to two different addresses; is that correct?

- A. I believe the first one came back, "return to sender," so we re-sent it to a new address we determined.
- Q. Have you gotten it back from the second address yet?
- A. If it's not an exhibit, then we have not received it back.
- Q. I can't -- it's hard to tell from
 here. It looks like the stamp is over the 1860
 Lincoln, and then there's a handwritten -- the
 17th Street address. Mr. Chorney happens to be a
 name I'm familiar with. I know he's in Denver,
 so I was just curious.
 - A. We have a -- the letterhead is March 12th, "Return to sender."
 - MR. BRUCE: What address do you have for Mr. Chorney, Mr. Stovall?

MR. STOVALL: We don't have one for him. I don't think he operates in the state actually. I was just curious. It appears that the 17th Street address is the second address. I

1	can't tell whether the envelope came back from
2	that one or
3	THE WITNESS: I have 1860 Lincoln
4	Street.
5	Q. (BY MR. STOVALL) You have 1860, then
6	below that, your copy has handwritten 555 17th?
7	A. Yeah, I see what you're saying.
8	Q. You apparently sent a second letter on
9	the 25th. I am assuming you have not received
10	anything back?
11	A. I do not believe we have. In fact, I
12	believe Mr. Chorney is now deceased.
13	Q. Is that right?
14	A. Yes.
15	Q. Okay.
16	A. If I have the right Raymond Chorney.
17	MR. BRUCE: We will review that.
18	MR. STOVALL: You might just check
19	that. As I say, I do know the names there. And
20	check that Pitco.
21	MR. BRUCE: We will.
2 2	Q. (BY MR. STOVALL) What's your timetable
23	for doing this, getting these wells spudded?
2 4	A. We're looking at June when we'd like to
25	be drilling. A couple months.

1	Q. So it wouldn't be a problem to leave
2	the record open for 20 days to give you a chance
3	to do that?
4	A. No. We have environmental assessments
5	and other things we're having to take care of
6	right now.
7	MR. STOVALL: I recommend we leave it
8	open for two hearing dates, which would give you
9	basically 28 days. Would that be acceptable, Mr.
10	Bruce? You may be able to send back and say that
11	these other addresses are no good.
1 2	MR. BRUCE: Yes.
13	MR. STOVALL: And we can't find them.
14	THE WITNESS: Okay.
15	MR. BRUCE: We'll check it out.
16	MR. STOVALL: As long as it doesn't put
17	you in a major bind, I'd just as soon leave it
18	open and give you a chance to do that.
19	EXAMINER CATANACH: Okay. We'll go
20	ahead and continue the case till
2 1	MR. BRUCE: Could we ask to continue it
2 2	for two weeks? And then if the information has
23	to be submitted, we'll submit it and then it can
2 4	be continued for the next two weeks

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MR. STOVALL: Yes. I think that's --

1	MR. BRUCE: rather than continue it
2	for a month.
3	MR. STOVALL: Rather than automatically
4	lock you into the four.
5	EXAMINER CATANACH: Okay. Two weeks
6	would be what date?
7	MR. STOVALL: 16th.
8	EXAMINER CATANACH: We'll go ahead and
9	continue this case to April 16th, at which time
10	you can come in and advise us of the status of
11	what you're doing.
12	MR. BRUCE: Okay.
13	[And the proceedings were concluded.]
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15	
16	forganing is
17	I do hereby certify that the foregoing is
18	the Examiner hearing of Case No. 1993 heard by me on 1993
19	Lauid L Colamb, Examiner
20	Oil Conservation Division
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CERTIFICATE OF REPORTER 1 2 STATE OF NEW MEXICO 3 ss. COUNTY OF SANTA FE I, Debbie Vestal, Certified Shorthand Reporter and Notary Public, HEREBY CERTIFY that 7 8 the foregoing transcript of proceedings before 9 the Oil Conservation Division was reported by me; that I caused my notes to be transcribed under my 10 personal supervision; and that the foregoing is a 11 12 true and accurate record of the proceedings. I FURTHER CERTIFY that I am not a 13 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 April 11, 1992. 19 20 21 22

VESTAL,

NEW MEXICO CSR NO. 3

DEBBIE

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