

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

CASE 9971

EXAMINER HEARING

IN THE MATTER OF:

Application of Conoco, Inc., for Two Salt Water  
Disposal Wells, Lea County, New Mexico

TRANSCRIPT OF PROCEEDINGS

BEFORE: DAVID R. CATANACH, EXAMINER

STATE LAND OFFICE BUILDING

SANTA FE, NEW MEXICO

June 27, 1990

**ORIGINAL**

A P P E A R A N C E S

FOR THE DIVISION:

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\* \* \*

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## E X H I B I T S

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1 WHEREUPON, the following proceedings were had  
2 at 9:10 a.m.:

3 EXAMINER CATANACH: At this time we'll call  
4 Case 9971.

5 MR. CARROLL: Application of Conoco, Inc.,  
6 for two saltwater disposal wells, Lea County, New  
7 Mexico.

8 EXAMINER CATANACH: Are there appearances in  
9 this case?

10 MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin  
11 of the Santa Fe law firm of Kellahin, Kellahin and  
12 Aubrey, appearing on behalf of the Applicant, and I  
13 have one witness to be sworn.

14 EXAMINER CATANACH: Any other appearances?  
15 Will the witness please stand and be sworn  
16 in?

17 (Thereupon, the witness was sworn.)

18 JERRY HOOVER,  
19 the witness herein, after having been first duly sworn  
20 upon his oath, was examined and testified as follows:

21 EXAMINATION

22 BY MR. KELLAHIN:

23 Q. Mr. Hoover, for the record would you please  
24 state your name and occupation?

25 A. My name is Jerry Hoover. I'm a regulatory

1 coordinator with Conoco, Incorporated.

2 Q. Mr. Hoover, you are also a petroleum  
3 engineer, are you not, sir?

4 A. That's correct.

5 Q. And you have testified before the Oil  
6 Conservation Division on prior occasions as a petroleum  
7 engineer and as the regulatory coordinator for your  
8 company?

9 A. Yes, I have.

10 Q. Pursuant to your employment, have you made a  
11 study of the facts surrounding this Application for the  
12 approval of two saltwater disposal wells, as advertised  
13 on the docket, in Lea County, New Mexico?

14 A. Yes.

15 MR. KELLAHIN: At this time, Mr. Examiner, we  
16 tender Mr. Hoover as an expert petroleum engineer.

17 EXAMINER CATANACH: He is so qualified.

18 Q. (By Mr. Kellahin) Mr. Hoover, let me direct  
19 your attention, sir, to what has been marked as your  
20 package of exhibits and have you turn to Exhibit Number  
21 1-A and identify that.

22 A. Exhibit 1-A is the OCD Form C-108, an  
23 Application for Authorization to Inject.

24 Q. Did you prepare this exhibit yourself or have  
25 it compiled under your supervision and direction?

1           A.    Yes, I did.

2           Q.    Let's turn to Exhibit 1-B, and describe for  
3           us what you propose to accomplish with this  
4           Application.

5           A.    We would propose to accomplish with this  
6           Application the conversion of Conoco's Southeast  
7           Monument Wells Number 99 and 101 from shut-in oil wells  
8           in the Blinebry Oil and Gas Pool to active saltwater  
9           disposal wells in the San Andres Formation, and this  
10          Exhibit 1-B includes answers to some of the questions  
11          asked in the C-108 Form, specifically from Sections  
12          VII, VIII, IX and X.

13                   The several questions that are answered by  
14          this particular exhibit deal with average anticipated  
15          injection rate. That's expected to be about 4000  
16          barrels of water per day.

17          Q.    This is per well?

18          A.    Per well, with an anticipated 5000-barrel  
19          rate maximum. We also are anticipating that the  
20          average surface injection pressure will be around 450  
21          p.s.i., but we're requesting this Order cover a maximum  
22          pressure up to the .2 of a p.s.i. per foot.

23          Q.    If you use the top of the San Andres by which  
24          to calculate the .2 p.s.i. per foot of depth, can you  
25          give us the approximate surface pressure limitation

1 that would apply to the wells?

2 A. Yes, the .2 limitation on Well 99 would give  
3 us 807 pounds surface pressure, and the 101 would be  
4 805 p.s.i.

5 Q. Describe for us the source of the injected  
6 water that's going to be disposed of in each of these  
7 two disposal wells.

8 A. The source of the water for disposal comes  
9 from the Warren McKee battery, and produced water is  
10 brought in from three different locations to this  
11 battery: first of all from the Skaggs Waterflood in the  
12 adjoining Southeast Monument Unit, from the adjoining  
13 Warren Unit, and also from the Warren McKee Waterflood.

14 These three waters are mixed at the battery  
15 and will consist of the disposal water.

16 Q. Turn now, Mr. Hoover, to Exhibit Number 2-A  
17 and identify and describe that exhibit.

18 A. 2-A is a well-location plat for the SEMU  
19 Blinebry Number 99, which shows this well to be located  
20 at 1980 feet from the north line, 1650 feet from the  
21 west line of Section 29, Township 20 South, Range 38  
22 East in Lea County.

23 Q. And Exhibit 2-B is what, sir?

24 A. 2-B is the location plat for 101, which shows  
25 this well to be located at 660 feet from the north

1 line, 330 feet from the west line, also in Section 29,  
2 Township 20 South, Range 38 East, Lea County.

3 Q. Identify and describe for us Exhibit Number  
4 3.

5 A. Exhibit Number 3 is a land map showing the  
6 operators within a 2-mile radius of this SEMU Blinebry  
7 Number 99. That's the large circle on the map.

8 The small circle is the half-mile radius of  
9 investigation that we're looking at, and we'll have a  
10 map which will show that in greater detail later.

11 Q. Sir, Exhibit Number 4, would you identify  
12 that?

13 A. Exhibit 4 is a similar map for the SEMU  
14 Blinebry Number 101, showing these two radiuses.

15 Q. Turn now to Exhibit Number 5. Identify that  
16 exhibit for us.

17 A. Exhibit 5 is a map showing the one-half mile  
18 radius of review for both of these proposed saltwater  
19 disposal wells.

20 You'll see the wells identified by the broken  
21 triangles and the arrows. They're just one location  
22 diagonally apart. The areas of review for these two  
23 are outlined by the two intersecting circles.

24 The three sources of produced water that we  
25 referred to a moment ago are also identified with this



1 map. The first, which was the Southeast Monument Unit,  
2 is on the left side of the map outlined in yellow.

3 The second source is on the right side, the  
4 Warren Unit, outlined in green -- We don't see the  
5 entire units, but these are the edges of them -- and  
6 then the McKee Flood, which is outlined in red in the  
7 middle of the map.

8 Q. What is currently being done by your company  
9 with water produced from each of these two units?

10 A. Currently, we are already disposing into the  
11 San Andres Formation, and the Warren Unit, Well Number  
12 24, which you'll see right at the bottom of the map, in  
13 fact the red and green boundaries -- markers -- almost  
14 cover that up. It's just barely inside the section  
15 line of Section Number 29.

16 Q. How long has the Number 24 Well been used as  
17 a disposal well?

18 A. It's been used for 13 years for water  
19 disposal in this area.

20 Q. Have you experienced any difficulties, as the  
21 operator of that disposal well, with the injection of  
22 disposal fluids into the formation?

23 A. We've had no problem, just normal  
24 maintenance, a couple of cleanouts, a little acid  
25 occasionally, but nothing more than the normal

1 maintenance.

2 Q. Is there any incompatibilities of the fluids  
3 that present problems for the disposal of water into  
4 that well?

5 A. We have never experienced any compatibility  
6 problems.

7 Q. The use of the 99 and the 101 as disposal  
8 wells will be similar, then, to the 24 well?

9 A. That's correct.

10 Q. Why do you now need two more disposal wells  
11 when you already have the 24 well?

12 A. We're in the process of doing -- of a  
13 remedial program in the Warren McKee Waterflood. These  
14 wells are being gravel-packed to control the sand  
15 problem that we've always had there.

16 Three of the wells have been equipped  
17 following the gravel packing, with submersible pumps,  
18 which have greatly increased the recovery from these  
19 wells. That also has increased our water production,  
20 so we're now in the need of additional disposal  
21 facilities.

22 Q. Is there any San Andres production within the  
23 area of review?

24 A. There is not any, at least within a mile, and  
25 not within the scope of this map.

1 Q. Within this area, are there any known sources  
2 of underground fresh water present?

3 A. There are not.

4 Q. Turn now, Mr. Hoover, to Exhibit Number 6,  
5 and identify and describe what you've presented.

6 A. Exhibit 6 is a table of the well data as  
7 requested by the Form C-108. It includes completion  
8 intervals, casing cement programs, spud and completion  
9 dates, completion formations for all the wells within  
10 the half-mile radius of review.

11 Q. In making your investigation of the area of  
12 review, do you find any wellbores in which there is  
13 inadequate or no cement across the San Andres disposal  
14 zone?

15 A. No, I do not. The records for all of these  
16 wells in this table show that we have cement across the  
17 San Andres, well above that formation.

18 Q. Are there any plugged and abandoned wells  
19 within the area of review?

20 A. There's one P-and-A'd well in that area. If  
21 you still have Exhibit 5 handy there, you'll see that  
22 it's located in Section 30, Unit H, just west of the  
23 proposed disposal wells.

24 Q. The Number 12 Well?

25 A. That's the Number 12 Well.

1 Q. Section 30? Have you prepared a schematic of  
2 that well?

3 A. Yes, I have. That is --

4 Q. -- Exhibit Number 7.

5 A. That's Exhibit Number 7, yes.

6 Q. Having prepared the schematic, what is your  
7 conclusion as an engineer with regards to whether or  
8 not this well has been adequately cemented and plugged  
9 to isolate off this wellbore as a source by which  
10 disposal fluids might migrate to some other formations?

11 A. We believe from the records we possess on  
12 this well that it is adequately plugged.

13 Q. I direct your attention now, Mr. Hoover, to  
14 Exhibit Number 8. Would you identify and describe that  
15 exhibit?

16 A. Exhibit Number 8 is a type log of the  
17 formations in this area, starting with the Yates, which  
18 is marked at the top and going all the way through the  
19 McKee at the bottom of the log.

20 The source waters, produced waters that will  
21 be disposed of, as we mentioned earlier, will come  
22 first of all in the Skaggs Waterflood from the Penrose  
23 and Grayburg in this section.

24 Then the Warren Unit, the water will come  
25 from the Blinbry, Tubb and Drinkard, which is below

1 5800, and then from the McKee Formation at the bottom  
2 of the log.

3 Q. Have you provided wellbore schematics for the  
4 two disposal wells?

5 A. Yes, we have. Those are Exhibits 9-A and  
6 9-B.

7 Q. Let's turn to 9-A. When we look at the  
8 schematic, tell us how the well will be completed for  
9 disposal.

10 A. These wells were completed only in the  
11 Blinebry Formation.

12 Q. As producers at one time?

13 A. As producers, that's correct. They are now  
14 depleted. There are not any other zones that we felt  
15 were productive, so it would simply be a matter of  
16 setting a cast-iron bridge plug and putting some cement  
17 on top of the Blinebry and then completing in the San  
18 Andres.

19 Q. Are these new perforations for the San Andres  
20 in these wells?

21 A. This is the gross interval of the San Andres  
22 Formation. The exact perfs have not been listed here.

23 Q. So on the schematic, then, when we look at  
24 9-A, the San Andres perforation is from 4035 feet to  
25 5250 feet. That will be the gross interval --

1 A. That's correct.

2 Q. -- within which, then, you'll isolate your  
3 perforation?

4 A. That's correct.

5 Q. Let's turn now to Exhibit 9-B.

6 A. 9-B is the same information for the SEMU  
7 Blinbry Number 101, and its completion will be almost  
8 identical to the other.

9 Q. Will Conoco monitor the annular space between  
10 the tubing and the casing?

11 A. Yes.

12 Q. And will that area be filled with some inert  
13 fluid?

14 A. Yes, it will.

15 Q. Turn now to Exhibit Number 10, Mr. Hoover,  
16 and identify that for us.

17 A. Exhibit 10 is a water analysis of the  
18 proposed injection fluid. This is this mixture of the  
19 three produced waters.

20 Exhibit 11, then, is the analysis of the San  
21 Andres water. There are no producing wells that we can  
22 take a sample of, now. This particular analysis was  
23 done in 1972, and it was from that Warren McKee Well  
24 Number 24 that we said we're now disposing in. It was  
25 considered as a water source well at that time, and so

1 it was tested. It's the only information we have in  
2 that localized area on the San Andres at this time, so  
3 we took this analysis.

4 Q. Have you had a compatibility test made or  
5 analysis performed on the mixed produced water to  
6 determine if they were compatible with any water or  
7 fluids present in the San Andres?

8 A. Yes, we have. Exhibit 12-A is a  
9 compatibility analysis of these two fluids, the  
10 injection fluid and the San Andres Formation water.

11 And then Exhibit --

12 Q. And what do you conclude from that exhibit?

13 A. Our conclusion from this analysis is that  
14 there will not be a problem, and we have a statement  
15 from the analyzing company, which is included as  
16 Exhibit 12-B, to the effect that they find no  
17 compatibility problems with commingling these waters.  
18 And of course, we've been doing this very thing in the  
19 Well Number 24 for the last 13 years.

20 Q. Let's turn back to Exhibit Number 5, just to  
21 have a map for reference, Mr. Hoover. Identify for us  
22 the parties that you have provided notice to in regards  
23 to Conoco's Application in this case.

24 A. All right, there are no offsetting operators  
25 within the area of review. Conoco has --

1 Q. No other offset operators other than Conoco?

2 A. That's correct, other than Conoco. But  
3 Conoco has, in addition to the OCD and BLM, sent by  
4 certified mail applications to its partners in this  
5 property, Chevron, Arco, Amoco, as well as the surface  
6 owner.

7 Q. When we look at the surface of Section 29 and  
8 at the two specific disposal locations, who is the  
9 owner of that surface?

10 A. Surface owner is Dallas McCasland.

11 Q. Have you contacted Mr. McCasland and  
12 determined whether or not he has any objection --

13 A. Yes, we have.

14 Q. -- to your proposed utilization of these two  
15 wells for disposal?

16 A. Yes, we have. He has not.

17 Q. And how have you determined that he has no  
18 objection?

19 A. Exhibit 13-A has the receipts from the  
20 certified mail for our -- the three partners we  
21 mentioned, as well as the OCD and BLM.

22 Our first mailing by certified mail to Dallas  
23 McCasland apparently never reached him. We remailed it  
24 last week, again by certified mail.

25 We knew we did not have time to get the



1 receipt back in time to include as an exhibit, so we  
2 called Mr. McCasland, and he has faxed us what is  
3 Exhibit 13-B, which is his statement that he has  
4 objections to the conversion of the Conoco wells for  
5 saltwater disposal.

6 Q. Do you have anything further, Mr. Hoover?

7 A. No, I do not.

8 MR. KELLAHIN: That concludes my examination  
9 of Mr. Hoover, Mr. Catanach.

10 We would move the introduction of Conoco's  
11 Exhibits 1 through 13.

12 EXAMINER CATANACH: Exhibits 1 through 13  
13 will be admitted as evidence.

14 EXAMINATION

15 BY EXAMINER CATANACH:

16 Q. Mr. Hoover, the sources of water, again, are  
17 the formation water from the Penrose and Grayburg, from  
18 the Skaggs Waterflood Project?

19 A. Yes.

20 Q. The Blinbry, Tubb and Drinkard formation  
21 water from the Warren?

22 A. Warren Unit, yes.

23 Q. And the McKee formation water from the McKee  
24 Waterflood Project?

25 A. That's correct.

1 Q. Okay. At what volume has Conoco been  
2 injecting into the Number 24 well?

3 A. I don't have current rates, but it should be  
4 approximately the same volumes we're asking for in  
5 these others. I don't have the current rates with me.

6 Q. Okay. Now, you said the -- Well Numbers 99  
7 and 101, they're currently -- they're unit wells in the  
8 Southeast Monument Unit?

9 A. No, they are not. They were drilled on what  
10 was the Burger lease, and the Blinebry -- The Blinebry  
11 Formation is not included in the Skaggs Waterflood  
12 Area, in the unit.

13 Q. So they're not associated with any unit or  
14 waterflood project?

15 A. Oh, I'm sorry. They -- Originally they were  
16 drilled Burger leases. They are in the SEMU, that's  
17 right.

18 Q. They are?

19 A. They were taken in and the name changed.

20 Q. Okay. And they're currently shut-in oil  
21 wells?

22 A. That's correct.

23 Q. Are they incapable of any further production,  
24 or what's the situation with that?

25 A. That's correct. The Blinebry turned out to

1 be the only productive zone, and it is depleted.

2 Q. Now, you haven't done any log analysis to  
3 actually determine the location of the perforations in  
4 the wells yet?

5 A. No, I don't have the exact locations of  
6 those.

7 Q. So this is just the gross interval?

8 A. That's the gross interval.

9 Q. Mr. Hoover, how did you determine that there  
10 was not any fresh water in this area?

11 A. We don't have any records to show that. I --  
12 We didn't know further than that. I'll have to get  
13 that information back to you.

14 Q. So you don't -- well -- Okay, the Ogallala,  
15 as far as you know, is not present in this area?

16 A. No, it does not reach this far.

17 Q. Okay.

18 A. I'm positive of that.

19 Q. I must have missed -- The association with  
20 Dallas McCasland is what, now?

21 A. He is the surface owner.

22 EXAMINER CATANACH: He is the surface owner.

23 That's all the questions I have of the  
24 witness. He may be excused.

25 Anything further in this case?

1 MR. KELLAHIN: No, sir.

2 EXAMINER CATANACH: If not, Case 9971 will be  
3 taken under advisement.

4 (Thereupon, these proceedings were concluded  
5 at 9:35 a.m.)

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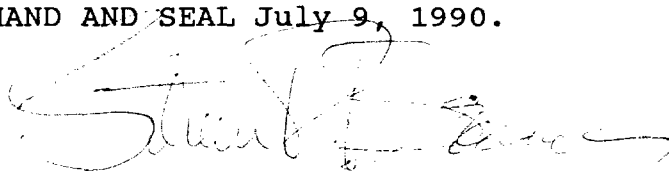
## CERTIFICATE OF REPORTER

STATE OF NEW MEXICO )  
 ) ss.  
COUNTY OF SANTA FE )

I, Steven T. Brenner, Certified Shorthand Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I transcribed my notes; and that the foregoing is a true and accurate record of the proceedings.

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

WITNESS MY HAND AND SEAL July 9, 1990.

  
STEVEN T. BRENNER  
CSR No. 106

My commission expires: October 14, 1990

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 987, heard by me on June 27 1990.

  
\_\_\_\_\_, Examiner  
Oil Conservation Division