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STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION

EXAMINER HEARING

IN THE MATTER OF:

Application of Harvey E. Yates      Case 9786  
Company for an exception to  
Division Order No. R-3221,  
as amended, Eddy County,  
New Mexico.

TRANSCRIPT OF PROCEEDINGS

BEFORE:    MICHAEL E. STOGNER, EXAMINER

STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO  
October 18, 1989

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FOR THE DIVISION:           ROBERT G. STOVALL  
                                  Attorney at Law  
                                  Legal Counsel to the Divison  
                                  State Land Office Building  
                                  Santa Fe, New Mexico

FOR THE APPLICANT:         W. PERRY PEARCE  
                                  Attorney at Law  
                                  Montgomery & Andrews, P.A.  
                                  P.O. Box 2307  
                                  Santa Fe, New Mexico

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\*To be supplied

1 HEARING EXAMINER: This hearing will come  
2 to order. I'll call the next case, No. 9786, which is  
3 the application of Harvey E. Yates Company for an  
4 exception to Division Order R-3221, as amended, Eddy  
5 County, New Mexico.

6 At this time I'll call for appearances.

7 MR. PEARCE: May it please the examiner,  
8 I'm W. Perry Pearce of the Santa Fe office of the law  
9 firm of Montgomery & Andrews, appearing in this matter  
10 on behalf of Harvey E. Yates Company, and I have one  
11 witness who needs to be sworn.

12 HEARING EXAMINER: Are there any other  
13 appearances in this matter?

14 Will the witness please stand to be sworn?

15 LARRY BROOKS,  
16 the witness herein, after having been duly sworn upon  
17 his oath, was examined and testified as follows:

18 DIRECT EXAMINATION

19 BY MR. PEARCE:

20 Q. Sir, for the record, will you please state  
21 your name and your place of residence.

22 A. Larry Brooks, Artesia, New Mexico.

23 Q. By whom are you employed, Mr. Brooks?

24 A. Harvey Yates Company.

25 Q. In what capacity?

1 A. Exploration and development geologist.

2 Q. Mr. Brooks, have you appeared before the  
3 Division or one of its examiners previously and had  
4 your credentials as a geologist accepted and made a  
5 matter of record?

6 A. I have.

7 Q. Are you familiar with the application filed  
8 in Case 9786 for an exception to Division Order  
9 R-3221?

10 A. Yes, I am.

11 MR. PEARCE: Mr. Examiner, at this time I  
12 would ask that Mr. Brooks be recognized as an expert  
13 in the field of petroleum geology.

14 HEARING EXAMINER: Mr. Brooks is so  
15 qualified.

16 Q. (BY MR. PEARCE) Mr. Brooks, very roughly,  
17 before we begin, would you please summarize what we're  
18 seeking today.

19 A. Okay. Basically, Harvey Yates wishes to  
20 gain an exception to R-3221, utilizing one unlined,  
21 shallow evaporation pit to dispose of 75 barrels of  
22 water per day from our two Lusk wells located in the  
23 west half of the southwest quarter of Section 16,  
24 Township 19 South, Range 32 East, Lea County.

25 They are both Delaware producers. They are

1 producing between the interval of 6,500 and 6,600  
2 feet. They completed at 51 barrels of oil per day and  
3 51 water, with about a 715 to 1 GOR. And they have  
4 declined down to, within the first six months, down to  
5 32 oil and 32 water. The water has declined with the  
6 production.

7           Basically, current water trucking costs are  
8 \$1.35 a barrel, or \$95 a day. Our revenue at this  
9 point is \$1,190 per day, and total well costs would be  
10 in the neighborhood of \$430,000. This would yield  
11 about a 6.3-year payout.

12           With current trucking costs, it would add  
13 up to about an 8.1 year payout as they continue to  
14 decline at 15 percent per annum.

15           We would prohibit unnecessary waste and  
16 loss of petroleum dollars.

17           Q.     Let's look, please, at what we've marked as  
18 Exhibit No. 1, a land plat of this area, and would you  
19 highlight the items of significance on that map.

20           A.     Okay. On the land plat, it shows the south  
21 half of Section 16, which is our Lusk State Lease.

22           Q.     That area is outlined in red; is that  
23 correct?

24           A.     Yes, sir. Also it shows two cross-section  
25 lines from east to west and north to south A-A Prime

1 and B-B prime.

2 Q. We will subsequently be discussing those  
3 cross-sections; is that right?

4 A. Yes, sir.

5 Q. Anything else on Exhibit 1?

6 A. No.

7 Q. Let's look, please, at Exhibit No. 2 to  
8 this proceeding.

9 A. Exhibit 2 merely is a production map of all  
10 formations that are producing in a 4 x 4 section grid,  
11 starting from Section 7, 19 32 and running diagonal to  
12 Section 27, 19 32. It shows all producing intervals.

13 Q. The Section 16 shown on this map is the  
14 proposed location?

15 A. Yes.

16 Q. Which are the two wells which would dispose  
17 of water into the proposed pit?

18 A. The two wells in the west half of the  
19 southwest quarter of Section 16.

20 Q. They are shown as brown dots on Exhibit No.  
21 2?

22 A. Yes.

23 Q. With TD's both of 6,600 feet?

24 A. Right.

25 Q. Any other items of particular significance

1 on this map?

2 A. No.

3 Q. Let's turn, please, to Exhibit No. 3 then.

4 A. Exhibit No. 3 shows all water tests or test  
5 holes drilled into the Santa Rosa Aquifer.

6 In Section 19 -- it also shows prior  
7 exemptions around the proposed disposal site as well  
8 as to the west and south.

9 In Section 19, there were five test holes  
10 drilled for the EPA by Phillips at their Lusk plant,  
11 only one of which encountered water at 345 feet and  
12 the TD was 350. They had intended to make this a  
13 water supply well for domestic use, which on test  
14 pumped dry, and they never could utilize it.

15 The four up in the north half of Section 19  
16 all were dry, although one in the east half of the  
17 northeast quarter is abandoned with top of drill pipe  
18 208 feet.

19 The well in the north half of Section 20  
20 noted at CP 639 was also dry.

21 In Section 8, the northeast of the  
22 northeast quarter is a windmill that in the prior  
23 case, giving permission R-5355, had been producing but  
24 now is abandoned and dry. No owner of record; no  
25 water rights appropriated.

1 Southeast, the south part, Section 28, and  
2 just off the scope of the map are three more exemption  
3 areas.

4 Q. I notice that there is a hachure line  
5 around Section 28 and the notation "R-3788" inside  
6 that section. What does that denote?

7 A. There are exemptions in Section 28 as well  
8 as 33.

9 Q. And those are exemptions for unlined  
10 surface pits?

11 A. Yes, they are.

12 Q. Let's look at this quickly. You've  
13 mentioned the R-5355 in Section 15. That is also an  
14 exemption for an unlined pit; is that correct?

15 A. Yes, it is.

16 Q. Does this particular exhibit show any other  
17 exempt areas?

18 A. No.

19 HEARING EXAMINER: What was the one in  
20 Section 15?

21 MR. PEARCE: 16. R-5355. That's the  
22 section we're working with.

23 Q. Now, if we could, Mr. Brooks, let's turn to  
24 Exhibit No. 4.

25 A. Exhibit No. 4 is a structure map on the top

1 of the Rustler formation which shows a fairly evident  
2 nose under which a lot of Strawn and Morrow production  
3 sits.

4 A true dip in the area, Section 16, would  
5 be to the slight northeast toward the exempt area,  
6 R-5355.

7 Over in Section 19, coming off the other  
8 side of the nose, the true dip trends to the  
9 southeast. These are done by three-point problems,  
10 and the three-point problems are drawn on the exhibit.

11 Q. Just to refresh our recollection, the  
12 exempt area for R-5355 is right around that well  
13 showing as plus 2649; is that correct?

14 A. That's correct.

15 Q. Are there other items of significance on  
16 this exhibit?

17 A. No.

18 Q. Now, I would ask you, please, Mr. Brooks,  
19 to step to the wall where we have hung a series of  
20 cross-sections, and would you please briefly discuss  
21 for the examiner and those in attendance what is  
22 reflected.

23 A. Basically, there are two stratigraphic  
24 cross-sections with the datum at the top of the  
25 Rustler, from north to south and east to west, using

1 the top of the log down to the south of the salt, two  
2 structural cross-sections hung on the top of the  
3 Rustler formation.

4           These two cross-sections show the top of  
5 the Chinle, the top of the Santa Rosa. They show  
6 numerous aquicludes and aquitards with some potential  
7 aquifer and abundance of clay and shale-type stringers  
8 with potential Rustler water zones within the top of  
9 the Rustler.

10           Q.     Let's go through these very quickly one at  
11 a time. The exhibit that you've marked as Exhibit 5-A  
12 is a stratigraphic cross-section. Would you highlight  
13 the wells for us involved in that cross-section?

14           A.     The Lusk "16" State No. 2 is the only well  
15 that had open hole logs, as 16 State 1 was a  
16 recompletion, and logs began at 3,400 feet.

17           Q.     The 16 State 2, is that one of the wells  
18 that is going to contribute water to the pit?

19           A.     It is.

20           Q.     And the structural cross-section which  
21 matches up with that stratigraphic cross-section is  
22 marked as Exhibit 5-B; is that correct?

23           A.     Right.

24           Q.     What does the structural cross-section  
25 demonstrate?

1           A.       This is a cross-section from west to east.  
2 It shows an eastward dip in the Rustler formation.

3           Q.       I believe you pointed out earlier that to  
4 the east of the proposed disposal area, and therefore  
5 to the east of the 16-2 well shown on that  
6 cross-section, there is another exempt area; is that  
7 correct?

8           A.       That's correct.

9           Q.       Let's look now at Exhibit 5-C, please.

10          A.       5-C is a north-south cross-section,  
11 stratigraphic, like as in 5-A. It shows the top of  
12 the Chinle, the Santa Rosa, numerous aquicludes and  
13 aquitards which will prevent water from migrating down  
14 into aquifer potential sandstones and also on top of  
15 the Rustler.

16          Q.       And, again, that shows the Lusk "16" State  
17 No. 2 well; is that correct?

18          A.       That's right.

19          Q.       Let's look at 5-D, which is the structural  
20 cross-section going with that.

21          A.       It is a structural component hung from  
22 south-north, hung on top of the Rustler, and it shows  
23 an eastward dip.

24                   HEARING EXAMINER: Before you leave, Mr.  
25 Brooks, you mentioned a couple of terms.

1           THE WITNESS: "Aquitard." An aquitard is  
2 an impermeable, nontransmissive barrier separation  
3 that will not transmit any water.

4           An aquiclude has very slight  
5 transmissibility of water. It's comprised mainly of  
6 clay stones and silt stones. The aquitards are either  
7 gypsum and hydrate or some form of clay.

8           HEARING EXAMINER: And the aquicludes?

9           THE WITNESS: Aquicludes allow some water  
10 to be transmitted, and they're silt stones and  
11 probably clay stones.

12          HEARING EXAMINER: Thank you.

13          Q.       (BY MR. PEARCE) Mr. Brooks, before you sit  
14 down, let's have you talk about the other exhibit,  
15 which I believe we have marked as Exhibit No. 6 to  
16 this proceeding.

17          A.       This is a 15 minute quadrangle, Clayton  
18 Basin. It shows in orange the outline of R-3221 A and  
19 B. All these other hachure colors are various  
20 exemptions within this area, trending toward Laguna  
21 Plata. It shows in entirety R-3788, R-3686, R-5355,  
22 and R-3775, which are exemptions after the creation of  
23 R-3221 B.

24          Q.       It appears that there are in the area of  
25 the proposed disposal pit numerous, previously

1 approved surface pit disposal operations?

2 A. That is correct.

3 Q. Anything else on that exhibit?

4 A. No.

5 Q. You may return to your seat.

6 Mr. Brooks, at this time, I'd ask you to  
7 refer to what had previously been marked as Exhibit 8-  
8 A and B and should instead be marked Exhibit 7-A and  
9 B, and would you discuss for the examiner what's  
10 reflected on those exhibits.

11 A. These are letters that were sent out to the  
12 Commissioner of Public Lands and Bureau of Land  
13 Management to surface owners in the area asking for a  
14 waiver of any objections, which they were signed and  
15 returned.

16 Q. At this time, Mr. Brooks, do you have  
17 anything further in this case?

18 A. No.

19 MR. PEARCE: Mr. Examiner, at this time I  
20 would ask the admission of Exhibits 1 through 7 and  
21 their subparts into the record in this proceeding.

22 I have no further questions of the witness  
23 at this time, and he is available if you would like to  
24 question him.

25 HEARING EXAMINER: Exhibits 1 through 7 and

1 their subparts will be admitted into evidence at this  
2 time.

3 DIRECT EXAMINATION

4 BY HEARING EXAMINER:

5 Q. Mr. Brooks, I'm going to refer to Exhibit  
6 No. 3. Of those surface pits that were previously  
7 approved as shown on this map, how many of them are  
8 still in operation?

9 A. I believe three of them are.

10 Q. And what are those three?

11 A. 3788.

12 MR. PEARCE: I'm sorry. In Section 28, Mr.  
13 Examiner?

14 THE WITNESS: R-3788, R-3775.

15 MR. PEARCE: Which section is that in?

16 THE WITNESS: Section 19. And R-3686.

17 Q. (BY HEARING EXAMINER) What happened to the  
18 one where R-5355 was authorized?

19 A. They plugged the well.

20 Q. When did they cease operations on that  
21 particular pond?

22 A. 1981.

23 Q. You show a pit location. This is your  
24 proposed pit in the west half of the southwest  
25 quarter. Could you be a little more specific?

1           A.       Actually, it would be midway between the  
2 two, located on the No. 1 battery, which would  
3 probably be right at the intersection of the  
4 quarter-quarter lines to facilitate both wells  
5 equally. So it would be approximately 1320 from  
6 south, 660 from west.

7           Q.       How big is this pond going to be? Do you  
8 have any specs on that?

9           A.       45 x 90.

10          Q.       45 feet by 90 feet. Is it going to be dug  
11 into the earth, or is it going to have an embankment  
12 added?

13          A.       It would probably most likely be dug into  
14 the earth.

15          Q.       How deep?

16          A.       About four feet, five feet.

17          Q.       How about the berm area as it protrudes off  
18 the surface, how tall will that be?

19          A.       About two feet.

20          Q.       You're looking at about six foot from the  
21 middle of the pit?

22          A.       To the top of the berm.

23          Q.       Do you know what the capacity of this pit  
24 will be?

25          A.       It will facilitate easily 25 to 3,000

1 barrels a month.

2 Q. 2,500 to 3,000 barrels a month?

3 A. With no evaporation or percolation.

4 Q. Do you have any information on the  
5 percolation and the evaporation rate out there?

6 A. The evaporation rate would easily  
7 facilitate 2,700 barrels of water per month.

8 Q. Is that averaged throughout the year or  
9 only in the summertime?

10 A. That's averaged throughout the year.

11 Q. How about the percolation rate in this  
12 area?

13 A. An estimate would probably be 30 to 50  
14 percent percolation because there are -- it is going  
15 to be in caliche. There is some clay stringers and  
16 that, and there's a dry quarry to the east. It's off  
17 this map, over in Section 23. There's a caliche  
18 quarry that shows about 20 feet, 25 foot of caliche,  
19 and there are some clay seams in the caliche.

20 Q. How will water disposal actually take place  
21 into the pit? Are they coming off the separator?

22 A. Both will be coming off the separator to a  
23 combined line right to the pit. There will be two  
24 lines running directly toward it, one on each side, on  
25 each end.

1 Q. Could you elaborate a little bit more how  
2 Harvey Yates Company will prevent any possible  
3 contamination of the water by hydrocarbons, such as  
4 oil, from getting into the pond?

5 A. It will go out of the free water knockout  
6 into a skimming tank, and then from the tank to where  
7 there will be nothing but water down below, and that  
8 water will be transferred by line straight to the pit.

9 Q. Let's talk about the water. Do you have  
10 any analyses?

11 A. I do. It's typical Delaware brine of about  
12 179,000 chlorides.

13 Q. 179,000 parts per million?

14 A. Yes, chlorides.

15 Q. Do you have any other details of that water  
16 out there? How about any other contaminants that  
17 might be present?

18 A. Total hardness would be 2,420.

19 MR. PEARCE: Let me interrupt, Mr. Brooks.  
20 Do you have a water analysis report?

21 THE WITNESS: I do.

22 MR. PEARCE: From what well was the water  
23 taken?

24 THE WITNESS: Both wells, 16-1 and 16-2.

25 MR. PEARCE: Mr. Examiner, we'll be happy

1 to make those exhibits. I don't have additional  
2 copies, but I can pass them to you at this point and  
3 copy them after the hearing, if you would like for us  
4 to.

5 HEARING EXAMINER: Let's do that. And this  
6 will be exhibit number?

7 MR. PEARCE: 8.

8 THE WITNESS: 8.

9 HEARING EXAMINER: You passed me two copies  
10 -- one per well. They will be Exhibits 8-A and 8-B.  
11 How's that, Mr. Pearce?

12 MR. PEARCE: Thank you, sir.

13 HEARING EXAMINER: If you will, sir.

14 MR. PEARCE: I will, and I'll get those  
15 right back for the case file.

16 Q. (BY HEARING EXAMINER) Mr. Brooks, why  
17 don't you go over those two exhibits for the record?

18 A. Okay. Total dissolved solids would be  
19 290,000, chlorides 179,000, in the Lusk 16-2.

20 You have some sulfates, 390; bicarb is 122;  
21 and sodium is 60,994. Calcium is 46,912; magnesium,  
22 972; and iron, 160.

23 There is no hydrogen sulfide, and carbon  
24 dioxide is 316.8, and oxygen, 2.

25 Q. Mr. Brooks, are you familiar with Order No.

1 R-3221 D that was entered May 10, 1988?

2 A. Yes.

3 Q. In the back on Exhibit A, there are some  
4 particular examples of findings and which needs to be  
5 shown. Could you tell me which one of these best  
6 exemplifies this particular case? The reason I ask is  
7 this is one of the first ones we've had since R-3221 D  
8 has been enacted.

9 MR. PEARCE: May we borrow your copy of  
10 that, Mr. Examiner? I will pass it to the witness.

11 THE WITNESS: C.

12 MR. PEARCE: The witness has indicated he  
13 believes subpart C is the appropriate subsection, Mr.  
14 Examiner.

15 HEARING EXAMINER: Thank you, Mr. Pearce.

16 MR. PEARCE: Yes, sir.

17 Q. (BY HEARING EXAMINER) Paragraph C shows  
18 that you can demonstrate that the groundwater present  
19 is not sufficient volume, and I'm assuming that the  
20 well and --

21 A. In Section 8.

22 Q. -- in Section 8 was --

23 A. It is dry and abandoned.

24 Q. There are no records on it, but in your  
25 investigation, do you know how long that well was out

1 there, and if it indeed produced water?

2 A. Yes. It was out there, I believe in 1958  
3 was when it was first drilled, and then it had never  
4 been used since 61 because there was an obstruction,  
5 and they went back in, and it was dry, per State  
6 Engineer's records.

7 Q. So they do have records on the well,  
8 partial?

9 A. Up to 61, and that was it.

10 Q. And then there was a dry hole in Section  
11 20?

12 A. Right. That well, they tested it upon  
13 drilling it to see if it would make domestic water,  
14 and it dried up immediately on the test.

15 Q. The regional dip out here underlying your  
16 particular pit location is to the north -- it appears  
17 east-northeast; is that correct?

18 A. Right. And as you get off that Morrow  
19 high, you will trend back to the southeast.

20 Q. Where would that water end up, any  
21 percolation that hits one of these impermeable layers?

22 A. The first part of it would end up  
23 underneath the previous exemption, but as it turns  
24 south, it would end up, most likely, due to the  
25 groundwater gradient there -- would end up in Section

1 28, which is -- it would end up in these exempted  
2 areas down in here (indicated).

3 It's going to run this way and curve back  
4 down to regional dip because there's a nose that runs  
5 right here. As soon as it rolls up that nose, it is  
6 going to come back in line to the regional dip.

7 Q. You're referring now to Exhibit Number?

8 A. 6.

9 Q. And you were pointing towards the?

10 A. R-5355, and it dips immediately towards  
11 that. As soon as it comes off this nose, it will  
12 curve back down.

13 Q. And the nose you're referring to is in the  
14 easterly direction or to the southerly direction?

15 A. To the easterly direction and pinches off  
16 and then comes back down.

17 HEARING EXAMINER: I have no other  
18 questions of Mr. Brooks.

19 Are there any other questions of this  
20 witness? If not, he may be excused.

21 Mr. Pearce, is there anything further in  
22 Case No. 9786?

23 MR. PEARCE: Nothing further. Thank you,  
24 sir.

25 HEARING EXAMINER: Does anybody else have

1 anything further in this case? Then this case will be  
2 taken under advisement.

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I do hereby certify that the foregoing is  
a complete record of the proceedings in  
the Examiner hearing of Case No. 9786,  
heard by me on October 18 1959.  
Michael P. Rogner, Examiner  
Oil Conservation Division

## 1 CERTIFICATE OF REPORTER

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

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

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

17 WITNESS MY HAND AND SEAL, November 7, 1989.

18   
19 \_\_\_\_\_  
20 DEBORAH O'BINE  
CSR No. 127

21 My commission expires: August 10, 1990  
22  
23  
24  
25