

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

ORIGINAL

IN THE MATTER OF THE HEARING CALLED  
BY THE OIL CONSERVATION DIVISION FOR  
THE PURPOSE OF CONSIDERING:

Case No.: 14800

APPLICATION OF ENDURANCE RESOURCES LLC FOR APPROVAL OF A  
PRESSURE MAINTENANCE PROJECT, EDDY COUNTY, NEW MEXICO.

REPORTER'S TRANSCRIPT OF PROCEEDINGS  
EXAMINER HEARING

BEFORE: WILLIAM V. JONES, Technical Examiner  
DAVID K. BROOKS, Legal Examiner

March 15, 2012

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, WILLIAM V. JONES, Technical Examiner, and DAVID K. BROOKS, Legal Examiner, on March 15, 2012, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South St. Francis, Drive, Room 102, Santa Fe, New Mexico.

REPORTED BY: Irene Delgado, NM CCR 253  
Paul Baca Professional Court Reporters  
500 Fourth Street, NW, Suite 105  
Albuquerque, New Mexico 87102

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A P P E A R A N C E S

FOR THE APPLICANT:

ERNEST PADILLA

PADILLA LAW FIRML, PA

1512 St. Francis Drive

Santa Fe, NM 87504

I N D E X

RANDALL HARRIS

Direct Exam by Mr. Padilla

03

DONALD RITTER

Direct Exam by Mr. Padilla

17

EXHIBITS

EXHIBITS 1 AND 2 ADMITTED

10

EXHIBIT 3 ADMITTED

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1 EXAMINER BROOKS: Call Case Number 14800,  
2 application of Endurance Resources LLC for approval of a  
3 pressure maintenance project, Eddy County, New Mexico. Call  
4 for appearances.

5 MR. PADILLA: Ernest L. Padilla for the applicant  
6 Endurance Resources, and I have two witnesses, the same two  
7 witnesses that were sworn in the previous case.

8 EXAMINER BROOKS: Very good. It will not be  
9 necessary then to swear the witnesses again. You may  
10 proceed.

11 MR. PADILLA: Call Mr. Harris first this time.

12 RANDALL HARRIS

13 (Sworn, testified as follows:)

14 DIRECT EXAMINATION

15 BY MR. PADILLA:

16 Q. Mr. Harris, please state your name.

17 A. Randall Harris.

18 Q. You are from Artesia, right?

19 A. Yes, sir.

20 Q. And you have been sworn as a geologist and admitted  
21 and accepted as geologist in the prior case?

22 A. Yes.

23 MR. PADILLA: Mr. Examiner, we offer Mr. Harris as  
24 an expert in geology.

25 EXAMINER BROOKS: He is so qualified.

1 Q. Mr. Harris, would you -- let's turn to the C-108 in  
2 this case, Exhibit Number 1. Did you prepare that C-108?

3 A. Yes, sir, I did.

4 Q. Can you tell us something about the Baseball Park  
5 Number 1 Well that -- the injection well in this case?

6 A. Baseball Park Number 1 is currently the highest cut,  
7 water cut production well that we had in this area. It's  
8 approximately 5 percent oil, 95 percent water. We -- prior  
9 to this proposal, we were injecting into the Merlin Number 1  
10 SWD.

11 Q. Where is the Merlin Number 1 in relation to this  
12 well?

13 A. In the southwest.

14 Q. How far?

15 A. One location, 990 feet.

16 Q. Okay.

17 A. And we plugged that -- that well was originally  
18 converted in 1995 by Ray Westall, and it disposed of  
19 approximately 2 million barrels of water in its lifetime, and  
20 then Endurance Resources took these properties from -- from  
21 Ray Westall. That well became over-pressured, and we were  
22 not able to maintain under the pressure lease under the  
23 guidelines, so we P and A'd it.

24 Q. Geographically, where are these wells located?

25 A. Within the city limits of Carlsbad, New Mexico.

1 Q. And what water, fresh water resources are there in  
2 the area?

3 A. There is the Capitan Reef above the proposed zone.

4 Q. And --

5 A. Approximately 400 feet.

6 Q. And was Merlin -- the Merlin Well penetrated the  
7 Capitan Reef?

8 A. Yes.

9 Q. And this well also has penetrated that Reef?

10 A. Yes, sir.

11 Q. How is the well cemented, the proposed injection  
12 well?

13 A. The surface casing is cemented to surface, and so  
14 was the production casing cemented all the way to surface.

15 Q. So is the -- is the Capitan Reef segregated?

16 A. Yes, it is.

17 Q. Cemented? Where is the injection zone in this  
18 well?

19 A. The proposed injection zone will be 4052 through  
20 4669<sup>2</sup>, the lower part of the Delaware.

21 Q. Okay. Take a look at Exhibit Number 2, which is  
22 your geologic map. And is this injection interval shown on  
23 the type log?

24 A. Yes, it is. Marked in red.

25 Q. What kind of production is in the Delaware in this

1 area?

2 A. It's -- it's a very high water cut. This is a water  
3 drive formation. Specifically on each well, as a -- as all  
4 wells combined together, it's about 35, 40 barrels a day, of  
5 which we have three shut in because they are uneconomical to  
6 haul water.

7 Q. Okay. If you're injecting into the same zone that  
8 you are producing from, how would that effect production from  
9 other wells? In other words, are there other water out of  
10 the other wells?

11 A. Since this a water drive formation, anyway, there is  
12 going to be some probably increased water circulation that --  
13 that you are doing by producing wells, because it's so high  
14 water cut, anyway, anything down dip from these wells is 100  
15 percent water.

16 Q. In terms --

17 (Interruption.)

18 EXAMINER BROOKS: Excuse me, we have been indicated  
19 that we need to take a recess. We will take a recess, and I  
20 will tell you how long it's going to be after I see what's  
21 going on.

22 (Recess taken.)

23 EXAMINER BROOKS: Let's proceed then with Case  
24 Number 14780.

25 Q. (By Mr. Padilla) Mr. Harris, I think we were

1 talking about the injection interval before the recess and  
2 how -- and you were talking about the water cut, as I  
3 understood your testimony, it was 95 percent water and 5  
4 percent oil. But in terms of the pressure maintenance,  
5 how -- how does that actually work in a high -- in a water  
6 drive you are talking about?

7 In this case we selected the Baseball Park Number 1  
8 being more centrally located of the other producing wells  
9 around us, which we are the only producer of the Delaware in  
10 the surrounding area. And then on the structure being kind  
11 of on the tip of the nose, any injection that we do put in  
12 that well could possibly enhance all offsetting wells just  
13 by -- by increasing the pressure and forcing the oil down,  
14 and our oil cut could conceivably get higher for a time  
15 period.

16 Q. I know you're not an engineer, but in terms of  
17 pressures, as far as you know, how -- how will it increase  
18 the pressure to enhance production to the other wells?

19 A. Well, this is a low pressure reservoir to begin  
20 with, and so by any -- any increase in pressure in the  
21 centrally located area, we are bound to move fluid outwards  
22 and drive in some oil with it.

23 Q. So I understood your testimony, you are injecting  
24 water into the center, essentially, and are you going to  
25 recycle that same water at some point?

1 A. Yes. The water should recycle.

2 Q. So how does that affect production of oil?

3 A. By driving the -- the oil column, which is pretty  
4 thin in this area, as we inject it will force that oil away  
5 from the injection well towards other producers in the  
6 area.

7 Q. Are pressures significant in this application?

8 A. No, not -- they're not real specific, no.

9 Q. In terms of fracking or fracturing the formation,  
10 you're not going to do that. Is that my understanding?

11 A. Yes, these -- this proposed injection well, the  
12 zones that we are proposing to go into have already been  
13 fracture treated for production, and there was no additional  
14 enhancement that we are going to do with the well, just  
15 simply convert it to a disposal.

16 Q. Let's turn to the maps on C-108 and also look at  
17 Exhibit 2 at the same time in terms of ownership interests  
18 and who may be affected by this application. The maps are  
19 maybe two pages into this C-108, as I see it.

20 The first map I see there has a small circle, and  
21 then the second map has a large circle. What does the --  
22 looking at the first map, who is affected by this application  
23 in terms of offset operators?

24 A. The offset operators that have production in the  
25 Delaware, it's 100 percent Endurance Resources, but right



1 outside of that area, who has the deeper rights would be OXY  
2 and Kaiser-Francis.

3 Q. So within the small circle, it's all Endurance. Is  
4 that what you're saying? The first map.

5 A. The first map?

6 Q. Yes.

7 A. Of the producing wells of the Delaware, yes, it's  
8 all 100 percent.

9 Q. Okay. And the deeper formations, where are they in  
10 terms of OXY, Kaiser-Francis, and where are they producing  
11 from?

12 A. Those wells are producing from the Morrow.

13 Q. I don't think I asked you, where -- what is the  
14 depth of the -- of the fresh water, the Capitan Reef?

15 A. The Capitan Reef is above 400 feet in this area.

16 Q. Okay. And where does your exhibit show -- Exhibit  
17 108 show that the well was cemented below the Capitan Reef?

18 A. The very first page. We have the surface casing set  
19 up for circulated surface.

20 Q. Okay. Are there any federal lands as you had in the  
21 prior case that would be affected by this application?

22 A. No federal lands and no state lands.

23 Q. Okay.

24 MR. PADILLA: We offer Exhibits 1 and 2 and pass the  
25 witness.

1 EXAMINER BROOKS: Okay. Exhibits 1 and 2 are  
2 admitted.

3 (Exhibits 1 and 2 admitted.)

4 EXAMINER BROOKS: Mr. Jones?

5 EXAMINER JONES: Mr. Harris, the circulation of that  
6 400 and something feet surface pipe, did it require any  
7 one-inch pipe to make it circulate?

8 THE WITNESS: No, sir.

9 EXAMINER JONES: So it's recently just pumped -- and  
10 this is all fee land?

11 THE WITNESS: Yes.

12 EXAMINER JONES: Within a half a mile of this well?

13 THE WITNESS: Yes. Let me check.

14 EXAMINER JONES: In that case, it's all fee lands,  
15 but there's not a -- does Endurance have 100 percent of the  
16 lands within a half mile leased, within a half mile lease or  
17 all of them leased?

18 THE WITNESS: No. There are portions that OXY and  
19 Kaiser-Francis has, but they do not have any wells that  
20 penetrate the zone.

21 EXAMINER JONES: But all lands within half a mile  
22 are leased? Not -- some of them are not leased by Endurance.  
23 Is that correct?

24 THE WITNESS: That's correct.

25 EXAMINER JONES: And you provided notice to the --

1 to the other operator -- the other leaseholders, I should  
2 say?

3 THE WITNESS: Yes.

4 EXAMINER JONES: Okay. Can you identify the  
5 separately owned tracts of land within a half mile of that  
6 well, or are they identified on one of the exhibits? I think  
7 they are on Exhibit --

8 THE WITNESS: Yes.

9 EXAMINER JONES: The map on Exhibit 1?

10 THE WITNESS: The map on Exhibit 1 was in color, but  
11 for some reason this is just a black and white copy.

12 EXAMINER BROOKS: We probably need a color copy of  
13 that, or a detailed list of, you know, what lands are where.

14 THE WITNESS: Maybe --

15 MR. RITTER: This is the color map.

16 (Map to Examiners.)

17 EXAMINER JONES: Can we have this one?

18 MR. RITTER: Yeah, sure.

19 EXAMINER JONES: This lower Delaware, is that all  
20 Brushy?

21 THE WITNESS: Yes, sir.

22 EXAMINER JONES: So both of these perforations are  
23 Brushy?

24 THE WITNESS: Yes, sir.

25 EXAMINER JONES: Brushy Canyon. Okay. And the

1 production history of this well, is that somewhere in this  
2 application?

3 THE WITNESS: No. I don't provide production  
4 history.

5 EXAMINER JONES: But it's depleted. You said it's 5  
6 percent water oil cut?

7 THE WITNESS: That's correct.

8 EXAMINER JONES: Was that over a general period of  
9 time it went to that? It didn't do that all of a sudden?

10 THE WITNESS: No. Over a general period of time.

11 EXAMINER JONES: So it's legitimately depleted.  
12 Does that mean the wells around it are depleted also?

13 THE WITNESS: Yes, sir, Baseball Park 1, 3 -- 1, 2,  
14 4, and the Merlin Number 2 are also --

15 EXAMINER JONES: 2A?

16 THE WITNESS: Yes -- no, not 2A, the number 2, they  
17 are all very high water cut.

18 EXAMINER JONES: Okay.

19 THE WITNESS: We had tried to produce them  
20 individually prior to this application to see if we could  
21 make one of them commercial without hauling, and we cannot.

22 EXAMINER JONES: Okay. And where is that water  
23 coming from? Is it coming in the upper perf or the lower  
24 perf?

25 THE WITNESS: A combination.

1 EXAMINER JONES: Okay. So they are all watering out  
2 at once? It's not a bottom water; it's a side water drive  
3 then?

4 THE WITNESS: Yes, sir.

5 EXAMINER JONES: We're not opposed to you calling  
6 this a saltwater disposal if you -- if it's legitimately a  
7 water drive, and you don't think the other wells around it  
8 will be possibly or negatively affected by this. You had  
9 some testimony just now, though, that you -- that you did  
10 think that it's possible.

11 THE WITNESS: It's possible, yes.

12 EXAMINER JONES: But not likely?

13 THE WITNESS: But probably not likely, no, sir.

14 EXAMINER JONES: You have been around a while in the  
15 oil patch, and you've worked on this lease before it was  
16 transferred to Endurance, haven't you?

17 THE WITNESS: Yes, I have.

18 EXAMINER JONES: So the case still is out there for  
19 this to be a saltwater disposal application and not just a --

20 THE WITNESS: (Nodding.)

21 EXAMINER JONES: Is there any other Delaware  
22 waterflooding in the Brushy Canyon in this area?

23 THE WITNESS: No. The only other wells immediately  
24 in this area, there are a couple of commercial disposals in  
25 the Brushy Canyon within this township, and I do not have

1    them spotted on this map because they were outside of our  
2    two-mile area of review.

3               EXAMINER JONES: Okay. This reservoir is low  
4    pressure, you mean that it won't stand water in the surface?  
5    Is that originally --

6               THE WITNESS: Yeah, it does not stand water to  
7    surface, no. It maintains a fluid level of approximately  
8    3,000 feet.

9               EXAMINER JONES: Was that original?

10              THE WITNESS: Original on the Baseball Park 1 and 2,  
11    they actually float oil at the time of completion.

12              EXAMINER JONES: So it was at least normally  
13    pressured initially.

14              THE WITNESS: Initially.

15              EXAMINER JONES: But it's depleted now?

16              THE WITNESS: Yes, sir.

17              EXAMINER JONES: So the water drive might be there,  
18    but it hasn't come in enough to maintain the pressure?

19              THE WITNESS: All the gas has left the reservoir  
20    through the years, there is no solution gas left at all to  
21    even -- to sell, and we produce less than 1 MCF a day now on  
22    the leases combined. So it was a solution oil gas which --  
23    which was the initial pressure with the water drive  
24    formation.

25              EXAMINER JONES: So it might be a combo drive.

1 THE WITNESS: Yes.

2 EXAMINER JONES: Have you noticed wells on the  
3 periphery watering out first?

4 THE WITNESS: They were pretty uniform except for  
5 the Cupla Baby, which is in the north of this location, and  
6 the Merlin Number 2A, and they have maintained a fairly good  
7 20 percent oil cut.

8 EXAMINER JONES: Those are good wells then?

9 THE WITNESS: Yes.

10 EXAMINER JONES: And they maintained it over the  
11 years?

12 THE WITNESS: Yes.

13 EXAMINER JONES: Were they always high in water cut?

14 THE WITNESS: Yes.

15 EXAMINER JONES: And does your water saturation  
16 calculate higher in the lower part of this pressure?

17 THE WITNESS: Approximately the same.

18 EXAMINER JONES: The same.

19 THE WITNESS: The water calculations initially on  
20 the logs were about 65 percent.

21 EXAMINER JONES: Okay. And you don't have the  
22 Morrow rights, somebody else has those?

23 THE WITNESS: Yes.

24 EXAMINER JONES: Did the City of Carlsbad say  
25 anything about this?

1 THE WITNESS: No, sir.

2 EXAMINER JONES: And the BLM, they didn't have an  
3 objection to this, even though --

4 THE WITNESS: No.

5 EXAMINER JONES: -- they talked about the other  
6 application and not this one?

7 THE WITNESS: Correct.

8 EXAMINER JONES: Okay. I don't have any more  
9 questions.

10 EXAMINER BROOKS: You said this was all fee, right?

11 THE WITNESS: Yes.

12 EXAMINER BROOKS: And no federal lands involved? No  
13 federal lands involved?

14 THE WITNESS: No federal lands involved.

15 EXAMINER BROOKS: No further questions.

16 MR. PADILLA: Mr. Examiner, we offer Exhibit Number  
17 3, which is my affidavit. We have received return receipts  
18 concerning notification of this hearing from Kaiser-Francis,  
19 Merlin Inc., and OXY USA.

20 EXAMINER BROOKS: Okay. Exhibit Number 3 will be  
21 admitted.

22 (Exhibit 3 admitted.)

23 MR. PADILLA: With that, nothing further.

24 EXAMINER JONES: Pardon me, if you think your  
25 engineer would have any input one way or the other on water



1 driver disposal, pressure maintenance versus disposal, you  
2 could put him on and we could talk about it. It's up to you.

3 MR. PADILLA: I could do that. I thought Mr. Harris  
4 covered that in terms of -- but I think, if you want to hear  
5 from him --

6 MR. RITTER: I'm happy to speak if you've got a  
7 question or want to hear my thoughts, I'm happy to.

8 EXAMINER JONES: I think it would be.

9 EXAMINER BROOKS: We will reopen case 14800, and we  
10 will call this --

11 MR. PADILLA: We will call Mr. Ritter back to the  
12 stand as to this case. We ask his credentials as a petroleum  
13 engineer be accepted, and otherwise --

14 EXAMINER BROOKS: They are so accepted.

15 DONALD RITTER

16 (Sworn, testified as follows:)

17 DIRECT EXAMINATION

18 BY MR. PADILLA:

19 Q. Mr. Ritter, do you have an opinion as to whether or  
20 not pressure maintenance or injection of water for pressure  
21 maintenance project will enhance production from the  
22 surrounding wells operated by Endurance Resources?

23 A. I will confer to what Randall had mentioned that,  
24 you know, this originally was a replacement well for our  
25 original saltwater disposal well, the other Merlin that was

1 plugged. The location of this well would, as Randall said,  
2 tend to put water and push out towards the other existing  
3 wells that are high water cut, not necessarily affecting the  
4 wells that were -- the Cupla Baby and the other Merlin that  
5 has a higher, more natural solution drive, so I think there  
6 is a possibility of enhancement. It's also more than likely  
7 going to be, as we said, more of a cyclic -- we'll put the  
8 water in, there will be probably more water. If we raise the  
9 pressure near those wells, we'll get an increase in water and  
10 oil from those wells that are surrounding. We will recycle  
11 the water, and it becomes more of a stripping project than  
12 just a pure disposal, but it's, you know, we put a lot of  
13 water in this other well and did not see a tremendous amount  
14 of support from the previous Merlin, so it's going to be a  
15 low -- low side effect on those wells, but that would be the  
16 mechanism for it to enhance production if it did.

17 Q. In terms of pressure, are there any significant  
18 pressures in this case that would involve -- that are  
19 remarkable in any manner?

20 A. No. In fact, we feel that probably the other well,  
21 the Merlin, was infected with some probably bad tank bottoms  
22 and stuff, and we tried to acidize it out of the way and  
23 couldn't, which led us to plugging that. So we really didn't  
24 see your normal -- we have filled up the reservoir with  
25 water, and we can't put any more in it. That wasn't really

1 the case with -- we need to replace that well, it was just  
2 damage beyond repair that we could do with acid. So from  
3 that respect I wouldn't expect us to see a high build-up of  
4 water, and we should be more pressure maintenance type at  
5 least in the area of that well.

6 EXAMINER JONES: Okay.

7 MR. PADILLA: That's all I have.

8 EXAMINER JONES: I don't have any questions. Thank  
9 you very much.

10 EXAMINER BROOKS: Thank you. Okay. Case 14800 will  
11 be 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. \_\_\_\_\_  
heard by me on \_\_\_\_\_

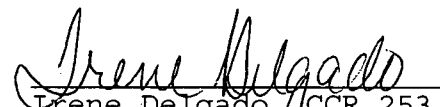
\_\_\_\_\_, Examiner  
Oil Conservation Division

## REPORTER'S CERTIFICATE

I, IRENE DELGADO, New Mexico CCR 253, DO HEREBY  
CERTIFY THAT ON March 15, 2012, proceedings in the  
above-captioned case were taken before me and that I did  
report in stenographic shorthand the proceedings set forth  
herein, and the foregoing pages are a true and correct  
transcription to the best of my ability.

I FURTHER CERTIFY that I am neither employed by nor  
related to nor contracted with any of the parties or  
attorneys in this case and that I have no interest whatsoever  
in the final disposition of this case in any court.

WITNESS MY HAND this \_\_\_\_\_ day of March 2012.

  
Irene Delgado, CCR 253  
Expires: 12-31-2012