

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

ORIGINAL

Application of Devon Energy Production Company, L.P.
for approval of a water disposal well, Lea County
New Mexico.

Case No. 14600

March 17, 2011
8:15 A.M.
Santa Fe, New Mexico

HEARING EXAMINER: WILLIAM JONES

DAVID BROOKS, Esq.

For The Applicant:

JAMES GARRETT BRUCE, Esq.
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1 (Note: In session at 8:20.)

2 HEARING EXAMINER JONES: Let's get started
3 this morning. First let's call Case 14600,
4 Application of Devon Energy Production Company, L.P.
5 for approval of a water disposal well in Lea County,
6 New Mexico. Call for appearances.

7 MR. BRUCE: Jim Bruce of Santa Fe
8 representing the applicant. I have two witnesses.

9 HEARING EXAMINER JONES: Any other
10 appearances? You may proceed. Witnesses, please
11 stand and state your name.

12 (Note: Witnesses Comply.)

13 MR. BRUCE: Your Honor, this is a case
14 where applicant seeks to convert a well to salt
15 water disposal. The well is the Rio Blanco 4 Fed
16 Com. No. 3 located in the northwest quarter of the
17 southeast quarter of Section 4, Township 23 South,
18 Range 34 East. Hearing was required under the
19 Division's informal policy because there is
20 production within half mile to a mile of the well.

21 CARL BURDICK
22 after having been first duly sworn under oath,
23 was questioned and testified as follows:

24 EXAMINATION

25 BY MR. BRUCE

1 Q. Would you please state your name and city
2 of residence.

3 A. Carl Burdick; Oklahoma City, Oklahoma.

4 Q. Who do you work for and in what capacity?

5 A. For Devon Energy as a geologist.

6 Q. Have you previously testified before the
7 Division?

8 A. Yes, I have.

9 Q. Were your credentials as an expert
10 petroleum geologist accepted as a matter of record?

11 A. Yes, they were.

12 Q. And are you familiar with the geology
13 involved in this?

14 A. Yes, I am.

15 MR. BRUCE: Mr. Examiner, I tender
16 Mr. Burdick as an expert.

17 HEARING EXAMINER JONES: Spell your last
18 name.

19 THE WITNESS: B-U-R-D-I-C-K.

20 HEARING EXAMINER JONES: Mr. Burdick is so
21 qualified.

22 Q. Mr. Burdick, can you turn to Exhibit 1 and
23 identify that for the examiner?

24 A. Exhibit 1 is a structure map on the top of
25 the Devonian formation. It's covering a nine square

1 around the host injection well with the injection
2 well labeled in red in the southeast quarter of
3 section 1. It's 23 South 34 west. That's not on
4 the map.

5 So in addition to Devonian structure
6 contours, the wells are labeled. In kind of orange
7 color is the expected EURs in MBOE. So they're, in
8 fact, gas wells but that's reported in MBOE. The
9 green is cum to date for gas and then in the blue is
10 cum water to date in thousand barrels.

11 Q. In looking at these wells, the proposed
12 disposal well has reached its economic limit,
13 correct?

14 A. That's correct.

15 Q. And the other producing wells in the area,
16 they are all Devon operated, correct?

17 A. Yes, sir.

18 Q. And they are nearing depletion also?

19 A. They are.

20 Q. I would also note it appears that the
21 Devonian here does produce quite a bit of water.

22 A. Yes, it does.

23 Q. And is the water that you propose to
24 inject, produced water from the other wells in the
25 area?

1 A. Yes.

2 Q. What is the reservoir like? Is this a
3 homogenous reservoir, heterogeneous reservoir?

4 A. This is a heterogeneous reservoir in terms
5 of metrics porosity and it's also a fractured
6 reservoir. The fractures tend to dominate and bring
7 water up from below.

8 Q. And what is your Exhibit 2?

9 A. Exhibit 2 is -- on Exhibit 1 there's a
10 cross-section marked AA Prime and Exhibit 2 is that
11 cross-section. So this cross-section is a
12 structural cross-section showing the Woodford and
13 Devonian formations. In the Devonian, these wells
14 were drilled a little ways into the reservoir and
15 then TD'd -- did not penetrate the whole reservoir.
16 This joins up -- if you are interested, there are
17 very few wells that do penetrate, but I have a log
18 that has the whole section if you would like to see
19 it.

20 HEARING EXAMINER JONES: That's all right.
21 How big is the section?

22 THE WITNESS: A little over a thousand
23 feet.

24 A. So all three wells on the cross-section
25 have been completed in the Devonian. They are open

1 hole completions so we set a liner just above and
2 then drill it out and just acidize it. The fact
3 that the middle well structurally has made more
4 water than the other two just kind of highlights the
5 heterogeneity and the lack of connectivity between
6 the wells.

7 Q. In your opinion, looking at them from a
8 geologic aspect, is injecting water in the well
9 going to adversely upset any of the offsetting
10 Devonian wells?

11 A. I don't believe so.

12 Q. Were Exhibits 1 and 2 prepared by you or
13 under your supervision?

14 A. No, they weren't.

15 Q. Who prepared them?

16 A. Andrew Sterling did. He is another
17 geologist with Devon.

18 Q. Have you reviewed the data and do you
19 agree with the data?

20 A. I have reviewed it and I do agree.

21 MR. BRUCE: Mr. Examiner, I move the
22 admission of Exhibits 1 and 2.

23 HEARING EXAMINER JONES: Exhibits 1 and 2
24 will be admitted.

25 (Note: Exhibits 1 and 2 admitted.)

1 HEARING EXAMINER JONES: So these are the
2 cum oil, water and gas on the first exhibit?

3 THE WITNESS: No, the green is cum gas and
4 blue is cum water and then the orangish-red is the
5 EUR for the gas. So to get the gas you multiply by
6 six to come up with BCF.

7 HEARING EXAMINER JONES: Okay. But these
8 were classified Devonian gas wells; is that correct?

9 THE WITNESS: That's correct.

10 HEARING EXAMINER JONES: You are still
11 going to keep the other two wells going?

12 THE WITNESS: Yes.

13 HEARING EXAMINER JONES: So this -- you
14 still want to classify this as salt water disposal,
15 not pressure maintenance? You are not trying to
16 maintain pressure in the reservoir?

17 THE WITNESS: That's correct.

18 HEARING EXAMINER JONES: And can you
19 elaborate on why you don't think injection in this
20 well will affect the offset wells?

21 THE WITNESS: I might defer that to the
22 reservoir engineer who has worked there, but it's
23 more like an infinite reservoir. It doesn't show
24 communication between the different wells.

25 HEARING EXAMINER JONES: As far as the

1 fractures go, does that have anything to do with it?
 2 You mentioned earlier it might have bottom water
 3 coming up?

4 THE WITNESS: Typically what I have seen
 5 in the Devonian is you have lots of vertical
 6 fractures and you will draw water up from the lower
 7 part of the Devonian section. We have had wells
 8 that produced high gas rate with no water and then
 9 the water will just come screaming in.

10 HEARING EXAMINER JONES: Where is this
 11 located as far as nearest to what town?

12 THE WITNESS: I'm not sure.

13 HEARING EXAMINER JONES: Is it in the
 14 middle of the Del Rey Basin?

15 THE WITNESS: Yeah. You are out in -- I
 16 don't believe there's any towns anywhere near this.

17 HEARING EXAMINER JONES: Is it Eddie
 18 County?

19 THE WITNESS: Lea County.

20 HEARING EXAMINER JONES: It's off the
 21 shelf though.

22 THE WITNESS: Maybe six miles or a little
 23 over six miles east of the WIPP site. I don't
 24 believe there's villages or towns.

25 HEARING EXAMINER JONES: So it's in the

1 western edge of Lea County off the shelf? That's
2 why it's so deep?

3 THE WITNESS: Yeah.

4 HEARING EXAMINER JONES: This is a
5 structure map?

6 THE WITNESS: Yes, sir.

7 HEARING EXAMINER JONES: Top of Devonian?
8 So basically why didn't you pick the other well, the
9 well to the south? Looks like it would be a little
10 further off structure.

11 THE WITNESS: Well, I believe that's
12 because that well is still making gas and the middle
13 one's TA'd and was making lots of water. If you
14 look at the water cums, that's by far made the most
15 water. The well down dip has been almost water-free
16 relatively.

17 HEARING EXAMINER JONES: So the structure
18 didn't control in this --

19 THE WITNESS: Again, that points to the
20 fact that water is probably coming up from below
21 rather than laterally.

22 HEARING EXAMINER JONES: So you only have
23 two wells in your area? Your one-half mile area of
24 review?

25 THE WITNESS: Yes, sir.

1 HEARING EXAMINER JONES: Okay. Thank you
2 very much.

3 MR. BRUCE: Mr. Examiner, in the ad for
4 the well, the closest town I can find is the big
5 city of Oil Center, about 17 miles away.

6 HEARING EXAMINER JONES: Thank you.

7 KEVIN OLSON
8 after having been first duly sworn under oath,
9 was questioned and testified as follows:

10 EXAMINATION

11 BY MR. BRUCE

12 Q. Will you please state your name and city
13 of residence?

14 A. Kevin Olson; Edmund, Oklahoma.

15 Q. What is your occupation?

16 A. I'm a petroleum engineer working for
17 Devon.

18 Q. And have you previously testified before
19 the division?

20 A. No.

21 Q. Would you summarize your educational and
22 employment background for the examiner?

23 A. I have a bachelor of science degree in
24 petroleum engineering. I have worked in the oil and
25 gas industry for nearly 25 years and I hold a

1 master's in business administration.

2 Q. How long have you worked at Devon?

3 A. Approximately three-and-a-half years.

4 Q. And are you familiar with the engineering
5 matters involved in this application?

6 A. Yes.

7 MR. BRUCE: Mr. Examiner, I tender
8 Mr. Olson as an expert petroleum engineer.

9 HEARING EXAMINER JONES: Spell your last
10 name.

11 THE WITNESS: O-L-S-O-N.

12 HEARING EXAMINER JONES: And Sam McCurty
13 didn't make it today?

14 MR. BRUCE: He is here.

15 HEARING EXAMINER JONES: He's here but not
16 going to testify?

17 MR. BRUCE: No.

18 HEARING EXAMINER JONES: Mr. Olson is so
19 qualified.

20 Q. Mr. Olson, could you identify Exhibit No.
21 3 for the examiner and discuss the contents?

22 A. Certainly. What I have done with Exhibit
23 3 is present rate/time curves for the offset
24 producing wells, and I have also presented a summary
25 of the reserves associated with the producing wells

1 in the area.

2 Q. And the producing wells in the area,
3 including the two within the area of review, what is
4 their status? Are they nearing the ends of their
5 productive lives?

6 A. The wells in this area are nearing the
7 ends of their productive lives. Part of the reason
8 to convert the Rio Blanco 4/3 is that there is
9 substantial water production from the existing wells
10 in this area, and we feel like if we can convert a
11 well, we can dispose of water at a lower price and
12 extend the life of the existing producing wells in
13 this area.

14 Q. So approval of the application will be
15 beneficial to the remaining wells in the area?

16 A. Yes.

17 Q. Do you have anything further to say on
18 this?

19 A. No, sir.

20 Q. Let's move to Exhibit 4, the C-108, and
21 let's run through this quickly. What is -- turning
22 to Page 3, what is the current status of the Rio
23 Blanco for No. 3?

24 A. The well is currently shut in.

25 Q. Okay. And how long has it -- how long ago

1 did it cease producing?

2 A. Approximately a year.

3 Q. And how do you propose -- how does Devon
4 propose to recomplete the well to turn it into an
5 injector?

6 A. We will recover the existing tubing from
7 the well and replace it with tubing, higher quality
8 tubing that can stand the produced water, stand up
9 to the potential corrosion issues, if there are any
10 from the produced water, and we will reinject the
11 water back into the existing Devonian zone.

12 Q. So no new preparations are planned?

13 A. No new preparations are planned.

14 Q. And again, you will be producing produced
15 Devonian water back into the Devonian, correct?

16 A. Correct.

17 Q. So there will be no compatibility
18 problems?

19 A. Right.

20 Q. What type of rates do you anticipate
21 injecting into the well?

22 A. The permit is filed for an average rate of
23 3,000 barrels of water a day with a maximum rate of
24 5,000 barrels a day.

25 Q. Will you comply with the Division's .2 PSI

1 per foot of depth pressure limitation?

2 A. Yes.

3 Q. You don't anticipate any problems with
4 injection pressures?

5 A. No, sir.

6 Q. On Page 9 of the exhibit you give data on
7 wells within the area of review. All wells within
8 the area of review are producing wells, correct?

9 A. Correct.

10 Q. So there's no P and A wells to worry
11 about?

12 A. Correct.

13 Q. And in your opinion, will the well be
14 recompleted so as to prevent movement of fluids
15 between the zones?

16 A. Yes.

17 Q. Now, was Exhibit 3 prepared by you?

18 A. Yes.

19 Q. And Exhibit 4 was prepared by a technician
20 at Devon, correct?

21 A. Yes.

22 Q. Have you reviewed the data in this
23 exhibit?

24 A. Yes.

25 Q. Do you agree with the data that's set

1 forth in this application?

2 A. Yes.

3 Q. In your opinion, would the granting of the
4 application be in the interest of conservation and
5 the prevention of waste?

6 A. Yes.

7 MR. BRUCE: Mr. Examiner, I move the
8 admission of Exhibits 3 and 4.

9 HEARING EXAMINER JONES: Exhibits 3 and 4
10 will be admitted.

11 (Note: Exhibits 3 and 4 admitted.)

12 HEARING EXAMINER JONES: Is this the
13 potash area, RP 111 P area?

14 THE WITNESS: I believe we are east of the
15 potash area.

16 HEARING EXAMINER JONES: So the BLM is not
17 concerned? They are okay with this conversion?

18 THE WITNESS: As far as I know, yes.

19 HEARING EXAMINER JONES: They probably
20 are. We haven't heard anything. The wells are
21 about what, eight years old out here?

22 THE WITNESS: Yes, sir.

23 HEARING EXAMINER JONES: Would you redrill
24 these wells if you had it to do over? Would they
25 pay out?

1 THE WITNESS: No, sir.

2 HEARING EXAMINER JONES: That's too bad.
3 So are you looking at off-lease water coming in or
4 are you looking at just area water from only Devon?
5 Are you looking at making it into a commercial
6 disposal well?

7 THE WITNESS: This will not be a
8 commercial disposal well. This will be for Devon
9 and the other working interest owners in the
10 existing wells in this immediate area.

11 HEARING EXAMINER JONES: Okay. Is the BLM
12 a surface owner?

13 THE WITNESS: I don't know the answer to
14 that.

15 HEARING EXAMINER JONES: I can probably
16 find that.

17 MR. BRUCE: It is the surface owner, Mr.
18 Examiner, and the mineral owner, and they have been
19 notified.

20 HEARING EXAMINER JONES: Did Ronnie Slack
21 make the C-108.

22 THE WITNESS: Yes, he did.

23 HEARING EXAMINER JONES: Okay. And as far
24 as the effect on offset wells, we try to look closer
25 at any injection in and near gas zones, but because

1 this is Devonian, as a reservoir engineer what do
2 you say about the effect that injection of this well
3 will have on the offset wells?

4 THE WITNESS: I don't think this well, the
5 injection in this well, will have an effect on the
6 offsets. In my opinion, the Devonian is an ideal
7 reservoir to inject water into because it's deep and
8 it doesn't affect any of the shallower production
9 and it is an infinite acting aquifer.

10 HEARING EXAMINER JONES: How far out would
11 it affect, do you think? How close by could you
12 have a well?

13 THE WITNESS: Given the --

14 HEARING EXAMINER JONES: How would you
15 find out if you wanted to do some tests to find out?

16 THE WITNESS: I don't know the answers to
17 your questions. What I can say is that if we do see
18 an effect in the offset producers, those are
19 operated by Devon and it's within our control to
20 shut this salt water disposal well in.

21 HEARING EXAMINER JONES: Okay. Are you
22 doing any Bone Spring development in this area or
23 Paddock Development that you would be contributing
24 water to this well?

25 THE WITNESS: We are currently evaluating

1 the Bone Spring horizon in this area. We have not
2 done any work in that zone yet.

3 HEARING OFFICER JONES: The volume that
4 this well could take, what do you think? What kind
5 of volume could you put in this well?

6 THE WITNESS: We permitted for 3- to 5,000
7 barrels a day. I have seen Devonian injection wells
8 take over 10,000 barrels of water a day. Again, I
9 think it's just an ideal candidate because of the
10 thickness of the reservoir.

11 HEARING EXAMINER JONES: Pretty hot down
12 there? Pretty high temperature?

13 THE WITNESS: I would estimate it to be
14 220 to 230 degrees.

15 HEARING EXAMINER JONES: But you wouldn't
16 have any trouble getting your packer within 100
17 feet?

18 THE WITNESS: No.

19 HEARING EXAMINER JONES: I have no more
20 questions.

21 MR. BROOKS: No questions.

22 HEARING EXAMINER JONES: Thank you very
23 much.

24 MR. BRUCE: Finally, Mr. Examiner, I have
25 drafted an affidavit for the Landman Katy McDonald.

1 I would ask permission to submit that after the
2 hearing. I forgot to send it to her, but you asked
3 about was this a lease disposal. The wells involved
4 in the disposal are -- the producing wells are on
5 Exhibit 1. They are all Devon-operated and there
6 are a number of leases involved, a number of federal
7 leases involved.

8 Because Devon is the operator, we did
9 notify the working interest owners of the various
10 leases, and when you go through Exhibit 5, my
11 affidavit of notice, they received notice. We
12 notified Southwestern Production Company and you
13 will see an E-mail from Southwestern to me stating
14 that they had to assign that to Limerock Resources,
15 so Limerock Resources was also notified and the BLM
16 was notified as surface and mineral owner.

17 So I move the admission of Exhibit 5 and
18 request permission to submit Ms. McDonald's
19 affidavit later.

20 MR. BROOKS: Well, other than simply to
21 observe, but that's just a classic statement about
22 the way attorneys use witnesses with affidavits. "I
23 drafted her affidavit but I forgot to send it to
24 her."

25 MR. BRUCE: Which I realized yesterday at

1 5:00.

2 MR. BROOKS: Presumably that defect will
3 be corrected. Thank you.

4 HEARING EXAMINER JONES: Exhibit 5 will be
5 admitted, and we will take the case under advisement
6 with the stipulation that the affidavit will be
7 submitted later.

8 (Note: Exhibit 5 admitted.)

9 MR. BRUCE: Thank you.

10 (Note: The proceedings were concluded.)

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I so 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

1 REPORTER'S CERTIFICATE

2 I, JAN GIBSON, Certified Court Reporter for the
3 State of New Mexico, do hereby certify that I
4 reported the foregoing proceedings in stenographic
5 shorthand and that the foregoing pages are a true
6 and correct transcript of those proceedings and was
7 reduced to printed form under my direct supervision.

8 I FURTHER CERTIFY that I am neither employed by
9 nor related to any of the parties or attorneys in
10 this case and that I have no interest in the final
11 disposition of this case.

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