

1 NEW MEXICO OIL CONSERVATION DIVISION

2 STATE LAND OFFICE BUILDING

3 STATE OF NEW MEXICO

4 CASE NO. 10549

5
6 IN THE MATTER OF:

7
8 The Application of Greenhill Petroleum
9 Corporation for Waterflood Expansion,
10 Lea County, New Mexico.

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12
13
14 BEFORE:

15 DAVID R. CATANACH

16 Hearing Examiner

17 State Land Office Building

18 September 17, 1992

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21 REPORTED BY:

22 CARLA DIANE RODRIGUEZ
23 Certified Shorthand Reporter
24 for the State of New Mexico
25

ORIGINAL

A P P E A R A N C E S

FOR THE NEW MEXICO OIL CONSERVATION DIVISION:

ROBERT G. STOVALL, ESQ.

General Counsel
State Land Office Building
Santa Fe, New Mexico 87504

FOR THE APPLICANT:

CAMPBELL, CARR, BERGE & SHERIDAN, P.C.

Post Office Box 2208

Santa Fe, New Mexico 87504-2208

BY: **WILLIAM F. CARR, ESQ.**

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Appearances

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WITNESSES FOR THE APPLICANT:

1. MICHAEL NEWPORT

Examination by Mr. Carr

4

Examination by Mr. Catanach

8

2. MARK EDWARDS

Examination by Mr. Carr

9

Examination by Mr. Catanach

14

3. CHARLES BUPP

Examination by Mr. Carr

15

Examination by Mr. Catanach

31

Certificate of Reporter

35

E X H I B I T S

Reference

Exhibit No. 1

6

Exhibit No. 2

11

Exhibit No. 3

12

Exhibit No. 4

17

Exhibit No. 4A

23

Exhibit No. 5

24

Exhibit No. 6

25

Exhibit No. 7

27

Exhibit No. 8

28

1 EXAMINER CATANACH: Call the hearing
2 back to order. At this time we'll proceed with
3 Case 10549.

4 MR. STOVALL: Application of Greenhill
5 Petroleum Corporation for a waterflood expansion,
6 Lea County, New Mexico.

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

9 MR. CARR: May it please the Examiner,
10 my name is William F. Carr with the Santa Fe law
11 firm Campbell, Carr, Berge & Sheridan. I
12 represent Greenhill Petroleum Corporation, and I
13 have three witnesses.

14 EXAMINER CATANACH: Are there other
15 appearances in this case?

16 Will the three witnesses please stand
17 to be sworn in.

18 [The witnesses were duly sworn.]

19 MR. CARR: We call Michael Newport.

20 **MICHAEL NEWPORT**

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

23 EXAMINATION

24 BY MR. CARR:

25 Q. Will you state your full name and place

1 of residence?

2 A. My name is Mike Newport, and I'm from
3 Houston, Texas.

4 Q. By whom are you employed and in what
5 capacity?

6 A. Greenhill Petroleum, and I'm a landman.

7 Q. Have you previously testified before
8 the Oil Conservation Division?

9 A. No, I have not.

10 Q. Would you summarize for Mr. Catanach
11 your educational background and work experience?

12 A. I have a petroleum land management
13 degree and an MBA, and I have 14 years'
14 experience with Amoco, an independent, and three
15 years with Greenhill.

16 Q. Are you familiar with the application
17 filed in this case for expansion of this
18 waterflood project?

19 A. Yes.

20 MR. CARR: Are the witness'
21 qualifications acceptable?

22 EXAMINER CATANACH: They are.

23 Q. Mr. Newport, would you briefly state
24 what Greenhill seeks with this application?

25 A. Greenhill seeks authority to expand

1 their Lovington Paddock Unit waterflood
2 authorized by Division Order R-3124, by
3 converting Lovington Paddock Unit Well No. 9 and
4 10 from producing wells to injection wells.

5 Q. Was it your responsibility to
6 coordinate Greenhill's efforts to prepare the
7 C-108 application filed for this expansion?

8 A. Yes, it was.

9 Q. In this effort, did you work with the
10 project engineer in preparing that application?

11 A. Yes, I did. I worked with Chuck Bupp,
12 our engineer.

13 Q. Was it your responsibility to provide
14 notice of this application to the owner of the
15 surface of the land on which each of these wells
16 is located, and to each offset owner in each of
17 the wells' area of review?

18 A. Yes, it was.

19 Q. Could you identify what has been marked
20 as Greenhill Exhibit No. 1 for Mr. Catanach,
21 please?

22 A. Yes. Exhibit 1 is the C-108
23 application to expand our waterflood project for
24 Wells No. 9 and 10.

25 Q. Was it by this letter that you provided

1 copies of the application to those people who are
2 entitled to notice, as set forth on the C-108?

3 A. Yes.

4 Q. Does this application also include at
5 the back a copy of the letter to the Hobbs
6 newspaper and an affidavit of publication?

7 A. Yes, it does.

8 Q. Was this matter originally filed for
9 administrative approval?

10 A. Yes.

11 Q. And why has this matter been set for
12 hearing?

13 A. We were opposed or I received a letter
14 from an offset operator, Ronald Nelson, who
15 objected to our converting these two wells.

16 Q. Have you been in communication with Mr.
17 Nelson since he filed his objection?

18 A. Yes, I have.

19 Q. Was he aware of today's hearing?

20 A. Yes, he is.

21 Q. How recently did you discuss today's
22 hearing with Mr. Nelson?

23 A. I discussed it on Tuesday.

24 Q. What did he indicate to you at that
25 time?

1 A. He said that he planned to oppose our
2 application.

3 Q. He indicated his intention to be here
4 today?

5 A. Yes, he did.

6 Q. Was Exhibit No. 1 prepared by you?

7 A. Yes, it was.

8 MR. CARR: At this time, Mr. Catanach,
9 we move the admission of Greenhill Petroleum
10 Exhibit No. 1.

11 EXAMINER CATANACH: Exhibit No. 1 will
12 be admitted as evidence.

13 Q. Mr. Newport, will Greenhill also call
14 geological and engineering witnesses to explain
15 the technical aspects of this application?

16 A. Yes.

17 MR. CARR: That concludes my direct
18 examination of Mr. Newport.

19 EXAMINATION

20 BY EXAMINER CATANACH:

21 Q. Mr. Newport, who is the surface owner
22 in this area?

23 A. The surface owner is the City of
24 Lovington.

25 Q. You have been in contact with the City

1 of Lovington?

2 A. Yes, I have.

3 Q. They have expressed no concern?

4 A. That's correct.

5 Q. Do you know what the nature of Mr.
6 Nelson's objection was?

7 MR. CARR: I might be able to respond
8 to that, Mr. Catanach, better than Mr. Newport.
9 Mr. Nelson operates a couple of offsetting wells
10 and expressed concern that conversion of these
11 wells to injection might cause a water
12 breakthrough in his offsetting wells.

13 EXAMINER CATANACH: I believe that's
14 all I have.

15 MR. CARR: At this time we would call
16 Mr. Mark Edwards.

17 **MARK EDWARDS**

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

20 EXAMINATION

21 BY MR. CARR:

22 Q. Would you state your name for the
23 record, please.

24 A. Mark Edwards.

25 Q. Where do you reside?

1 A. Woodlands, Texas.

2 Q. By whom are you employed and in what
3 capacity?

4 A. I work for Greenhill Petroleum as a
5 petroleum development geologist.

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

8 A. No, I have not.

9 Q. Would you review for Mr. Catanach your
10 work experience and then summarize your
11 educational background.

12 A. Okay. I graduated from the College of
13 Wooster, Wooster, Ohio, with a BA, majoring in
14 geology. Two years graduate experience,
15 University of Cincinnati geology program.

16 I worked for Mitchell Energy, an
17 independent in Woodlands, Texas, for eight years,
18 and the last two years I've worked with Greenhill
19 Petroleum.

20 Q. Are you familiar with the application
21 filed in this case?

22 A. Yes, I am.

23 Q. Have you made a geological study of the
24 area which is involved in this application?

25 A. Yes.

1 Q. Are the witness' qualifications
2 acceptable?

3 A. They are.

4 Q. Have you prepared certain exhibits for
5 presentation here today?

6 A. Yes, I have prepared two geological
7 exhibits.

8 Q. Basically, what is the purpose of your
9 presentation?

10 A. The main purpose is to review the
11 geologic makeup of the reservoir and show the
12 relationship of the wells that we plan to convert
13 and show how they relate to the expansion of the
14 waterflood.

15 Q. These exhibits, are they designed to
16 show the relationship, geologically, of the
17 subject wells with the wells operated by Mr.
18 Nelson?

19 A. Yes, they are.

20 Q. Let's go to what has been marked as
21 Greenhill Exhibit No. 2, and I would ask you to
22 identify that and review that for the Examiner.

23 A. Exhibit No. 2 is a structure contour
24 map of the Lovington Paddock Unit. The datum is
25 the top of the Glorieta. Contours are 20-foot

1 intervals, and I would like you to note that up
2 in the northern part is Well No. 9 and 10, and
3 the relationship of those two wells with the
4 Nelson wells, and I'm talking about Section 30.

5 Q. And where are the Nelson wells?

6 A. The Nelson wells, approximately--the
7 No. 2 is approximately 900 feet from our No. 9
8 well, and they're located up, as I've just said,
9 up in Section 30.

10 Q. Is that the only well that Mr. Nelson
11 operates within a half mile of the wells that you
12 propose to convert?

13 A. I believe it is. There may be one
14 other one, I believe it's the No. 4, Nelson 4
15 State Q.

16 Q. Let's move on to Exhibit No. 3, your
17 cross-section, and I would ask you to review that
18 for Mr. Catanach.

19 A. Exhibit 3 is a structural cross-section
20 that is hung--it's a structural cross-section.
21 All wells are hung on a common datum.

22 I have represented here the logs that
23 show porosity, which has a cutoff of three
24 percent. Anything above three percent on the
25 logs is shaded in green.

1 The colors that run across from well to
2 well are correlations of cycles that I've labeled
3 Glorieta A, B, C on down through H. I have an
4 index map on the right-hand side that shows that
5 this cross-section runs from our Lovington
6 Paddock No. 8 and No. 9 wells, up north through
7 the Nelson No. 2 and No. 4 wells.

8 Q. Basically, what does this show you
9 about these wells?

10 A. The main purpose of the cross-section
11 is to show the stratigraphic geological
12 relationship between our No. 9 well and the
13 Nelson wells to the north.

14 Q. What is that relationship?

15 A. The relationship is that we have
16 continuity of the reservoir between our wells and
17 his wells.

18 Q. Will Greenhill also call an engineering
19 witness to review that portion of the case?

20 A. Yes, we will.

21 Q. Were Exhibits 2 and 3 prepared by you?

22 A. Yes, they were.

23 MR. CARR: At this time, Mr. Catanach,
24 we would move the admission of Greenhill Exhibits
25 2 and 3.

1 EXAMINER CATANACH: Exhibits 2 and 3
2 will be admitted as evidence.

3 MR. CARR: That concludes my
4 examination of our geological witness.

5 EXAMINATION

6 BY EXAMINER CATANACH:

7 Q. Mr. Edwards, what intervals are being
8 flooded in this field?

9 A. The intervals of main flooding are the
10 C through the H, which makes up the Paddock
11 interval of the Glorieta formation. If you'll
12 notice on the structural cross-section, Well No.
13 8, there's some black shading on the right-hand
14 side of the log. That is a water injection
15 profile that shows where water is going. This
16 profile was run in January of this year. No. 8
17 is the closest injector that we have, to show
18 that relationship.

19 Q. Okay. The closest Nelson well, the No.
20 2, is being produced essentially in the same
21 zones that you're flooding in?

22 A. Yes. If you'll notice on his well,
23 there are red perforation marks in the center of
24 the log that shows where he is producing from.
25 You can tie that across on the cross-section to

1 see that it is the same interval.

2 Q. Have you discussed any of this with Mr.
3 Nelson?

4 A. No, I have not. I've never met with
5 Mr. Nelson.

6 Q. Is there anything geologically
7 significant in this area that would cause you to
8 believe that injection into the No. 9 or No. 10
9 wells will have an adverse effect on his wells?

10 A. Oh, no. No, there isn't anything.
11 Structurally we're in a similar position. If
12 you'll note both on the cross-section and on the
13 structure map, he's along strike. I think
14 there's about a foot difference between our No. 9
15 well and his No. 2 well.

16 EXAMINER CATANACH: That's all I have.

17 MR. CARR: At this time, we would call
18 Mr. Bupp.

19 CHARLES BUPP

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

22 EXAMINATION

23 BY MR. CARR:

24 Q. Would you state your name for the
25 record, please.

1 A. My name's Charles Bupp.

2 Q. Where do you reside?

3 A. Houston, Texas.

4 Q. By whom are you employed and in what
5 capacity?

6 A. I work for Greenhill Petroleum as a
7 project engineer or a reservoir production
8 engineer.

9 Q. Have you previously testified before
10 the New Mexico Oil Conservation Division?

11 A. No, sir, I have not.

12 Q. Would you review for Mr. Catanach your
13 educational background and then summarize your
14 work experience?

15 A. I have a bachelor in science in
16 petroleum natural gas engineering from
17 Pennsylvania State University. I worked for
18 Shell Oil Company for eight years, and two years
19 with Greenhill Petroleum. My job experience is
20 mainly as a reservoir and production engineer.

21 Q. Did you work with Mr. Newport in the
22 preparation of the C-108 application in this
23 case?

24 A. Yes, I did.

25 Q. Are you familiar with that application

1 and the proposed expansion of this particular
2 waterflood project?

3 A. Yes.

4 Q. Have you made an engineering study of
5 the portion of the unit project which is the
6 subject of this application?

7 A. Yes, I have.

8 MR. CARR: We tender Mr. Bupp as an
9 expert in petroleum engineering.

10 EXAMINER CATANACH: He is so qualified.

11 Q. Could you refer to what has been marked
12 for identification as Greenhill Exhibit No. 4?

13 A. It's the C-108, which is the
14 application for conversion to injection of Wells
15 Nos. 9 and 10.

16 Q. This was the application filed
17 originally with the Division seeking
18 administrative approval of this project
19 expansion?

20 A. Yes, it is.

21 Q. What is the present status of this
22 waterflood project?

23 A. Currently we're completing a very
24 active redevelopment of this waterflood. When we
25 bought it from Texaco in 1988, the flood was

1 producing about 250 barrels of oil per day.
2 Since that time we've infilled by drilling 56 new
3 wells in the field, and made likewise about 50 or
4 60 workovers of existing injectors or conversion
5 to injection, and we've pushed production in the
6 unit now to over a thousand barrels of oil per
7 day. We believe we've added about eight million
8 barrels in additional reserve from this work.

9 Q. And the conversion of the two wells,
10 which are the subject of this hearing, is part of
11 that overall development program for this unit?

12 A. Yes, it is.

13 Q. Let's go to Exhibit No. 1. I direct
14 your attention to the plat which is the last page
15 attached to the exhibit and I would ask you
16 simply to explain what that plat is and what it's
17 designed to show.

18 A. It just shows the location of the
19 subject wells, Nos. 9 and 10. It shows all wells
20 within a two-mile radius of 9 and 10. It shows
21 lease ownership in the area, and the circles show
22 the area of review within a half-mile radius of
23 the injection wells.

24 Q. In addition to this plat, is there a
25 listing of the wells in the areas of review

1 contained in Exhibit no. 1?

2 A. Yes, sir.

3 Q. Are those set forth on pages 17 and 18
4 of this exhibit?

5 A. Yes, they are.

6 Q. Are there plugged and abandoned wells
7 within the areas of review?

8 A. We've identified two plugged and
9 abandoned wells.

10 Q. Are there well data sheets for those
11 wells contained in this exhibit?

12 A. Yes, there are.

13 Q. And they show all plugging detail?

14 A. Yes, they do.

15 Q. Does Exhibit No. 4 also include
16 schematic drawings for the proposed injection
17 wells?

18 A. Yes, it does.

19 MR. CARR: And, Mr. Catanach, those
20 schematic drawings are set forth on pages 21 and
21 38 of this exhibit.

22 Q. If you would, Mr. Bupp, refer to page
23 21 of this exhibit. Using that exhibit, could
24 you summarize how you propose to convert these
25 wells to injection?

1 A. We normally pull the production
2 equipment, if there is any in the well at the
3 time. We will generally go in and clean out the
4 well to TD, sometimes deep in the well. We
5 normally go in and perforate or restimulate the
6 well, and then we run in with an injection packer
7 with 2-3/8-inch plastic coated tubing and put the
8 well on injection.

9 Q. Is the annular space going to be filled
10 with fluid and a pressure gauge placed at the
11 surface so the pressure in the annular space can
12 be monitored?

13 A. Yes, it will be.

14 Q. And that will be done in accordance
15 with the requirements of the federal Underground
16 Injection Control Program?

17 A. Yes, it will.

18 Q. Into exactly what formations are you
19 injecting?

20 A. In these two wells we plan to inject
21 into the Paddock formation, approximate depth
22 from 6100 to 6300 feet.

23 Q. What is the source of the water that
24 you will be injecting?

25 A. This will be reinjected water from the

1 waterflood. The source is from the Paddock
2 formation itself.

3 Q. There are, included in this exhibit,
4 some water analyses on fresh water wells. Do you
5 propose to be injecting any fresh water in these
6 two conversions?

7 A. No, sir.

8 Q. You do use fresh water for makeup in
9 other parts of the unit, isn't that correct?

10 A. That's right.

11 Q. It will not be used here?

12 A. No, it will not.

13 Q. What volumes do you propose to inject?

14 A. We feel that the wells will probably,
15 on average over their life, take about 100 to 150
16 barrels of water per day. The application states
17 a maximum of 1500 barrels of water per day, and
18 this is primarily just to guard against, when we
19 first put the wells on injecting, they did tend
20 to take a lot of water initially.

21 Q. This will be a closed system?

22 A. Yes, it will.

23 Q. You're going to be injecting under
24 pressure?

25 A. That's correct.

1 Q. What is the maximum pressure you
2 propose to use?

3 A. The maximum system pressure of the
4 waterflood is 2,000 pounds, and that would be the
5 maximum we would ever use in the life of the
6 flood.

7 Q. Is this pressure in line with the
8 injection pressure that is authorized for other
9 wells in this project?

10 A. Other wells are authorized to inject to
11 2,000 pounds.

12 Q. That pressure rate has been established
13 following step rate tests run on other wells in
14 the area?

15 A. Exactly.

16 Q. If the Division required similar tests
17 on these wells, Greenhill would be willing to run
18 those to justify the higher injection pressure?

19 A. Yes.

20 Q. Are there fresh water zones in the
21 area?

22 A. Yes, there are.

23 Q. What zone or zones?

24 A. It's the Ogallala, about 200 feet of
25 depth.

1 Q. Would you identify what has been marked
2 Greenhill Exhibit 4A?

3 A. This is a current map of the Paddock
4 Unit showing the unit outline in the current
5 pattern, as far as producers and injectors. Also
6 we have labeled on here, as squares, the water
7 supply wells, both Greenhill's water supply wells
8 and the City of Lovington's water supply wells
9 that are completed in the Ogallala formation.

10 Q. In fact, what we have here is a
11 waterflood that is in the same area as the well
12 field to supply the City of Lovington, isn't that
13 correct?

14 A. That is correct.

15 Q. The water well within the area of
16 review that impacts this hearing today is the one
17 directly south of our No. 9 well, is that not
18 right?

19 A. That is correct.

20 Q. Does Exhibit No. 4 contain an analysis
21 of the water from fresh water wells in the area?

22 A. Yes, it does.

23 Q. Those are set forth on pages 3 and 4 of
24 this exhibit?

25 A. That's correct.

1 Q. Are the logs of the proposed injection
2 well on file with the Oil Conservation Division?

3 A. Yes, they are.

4 Q. Have you reviewed the available
5 geologic and engineering data on the area?

6 A. Yes, I have.

7 Q. As a result of that review, have you
8 found any evidence of open faults or other
9 hydrologic connections between the injection zone
10 and any underground source of drinking water?

11 A. No, I have not.

12 Q. You are aware of the objection that's
13 been raised to this application by Mr. Nelson,
14 are you not?

15 A. Yes, I am.

16 Q. Could you refer to what has been marked
17 as Greenhill Exhibit No. 5 and identify and
18 review that for Mr. Catanach?

19 A. It's also a map of the unit showing our
20 current injection pattern with our new infill
21 wells. Up in the right-hand corner it shows the
22 area of interest, Nos. 9 and 10, and where
23 they'll be filling in three patterns up there,
24 two five-spot patterns and one four-spot
25 pattern.

1 Also I've labeled on there what each
2 one of those patterns is expected to produce from
3 the result of the injection into that pattern.

4 Q. What we have is the additional recovery
5 you're anticipating as a result of the conversion
6 and the waterflooding on that five-spot pattern?
7 That's what those numbers show?

8 A. For the entire pattern, that's right.

9 Q. Let's move to Greenhill Exhibit No. 6.
10 Would you identify that, please?

11 A. This is a production decline curve for
12 Well No. 9, one of the wells that we intend to
13 convert. It shows oil production versus time.

14 What we're trying to display here is
15 show how the flood has responded in the past in
16 this area. You look at how I've annotated the
17 curve showing when Well No. 11, which is in the
18 vicinity of Well No. 9, was converted to
19 injection about 1965. It shows when Well No. 8,
20 which in the vicinity of Well No. 9, was
21 converted to injection in about 1970.

22 What I want you to note is the response
23 to injection. Production went from about seven
24 barrels of oil per day to over 40 barrels of oil
25 per day.

1 What I've highlighted is the area that
2 I would interpret as a result of the injection
3 into the formation, and I would estimate the
4 reserves associated with that injection to be
5 about 90,000 barrels of oil.

6 Q. Do you know approximately how close the
7 No. 9 well is to the offsetting wells in which
8 you've commenced injection?

9 A. I believe they're 1,000 to 1,100 feet.
10 1,800 feet from Well No. 11 and 1,100 feet from
11 Well No. 8.

12 Q. How do the offsetting Nelson wells
13 compare to the No. 9 well prior to injection?

14 A. The well closest to No. 9, which is
15 stated earlier by Mr. Edwards as being about 900
16 feet away from Well No. 9, is currently producing
17 about five barrels of oil per day with about
18 three barrels of water.

19 Q. How would that compare to the No. 9
20 before the waterflood project?

21 A. Similarly. It's in its later stages of
22 primary decline.

23 Q. In addition to the 90,000 additional
24 barrels of oil recovered as a result of the
25 waterflood, there has been additional water

1 production in the No. 9 well, isn't that correct?

2 A. Yes, there has. There's always water
3 production associated with waterfloods.

4 Q. It would be reasonable to expect an
5 increase in water production to the offsetting
6 Nelson wells?

7 A. Yes, it would.

8 Q. Would it be reasonable to anticipate an
9 increase in the oil production in those wells?

10 A. Yes, it would be very reasonable to
11 anticipate that.

12 Q. Let's move to Exhibit No. 7, and
13 briefly explain to Mr. Catanach what that's
14 designed to show.

15 A. It's like the curve for No. 9. It's
16 the other well we plan to convert, No. 10, and it
17 shows its response to waterflood from the
18 conversion of Well No. 11, again, in 1965.
19 Although the response wasn't quite as great as
20 No. 9, it still did respond and it was in a very
21 marginal area of the field.

22 Its production went from about seven
23 barrels of oil per day to about 12 barrels of oil
24 per day, and over its life it's produced about
25 35,000 barrels in secondary reserve associated

1 with the injection.

2 Q. Let's go now to Exhibit No. 8. Would
3 you identify and review that?

4 A. It's just another example of response
5 in this area. This is Well No. 7 which is
6 located west of Well No. 8 and also in the
7 vicinity of Well No. 13. It's north of Well No.
8 13, which were wells that were converted to
9 injection by Skelly and Texaco early in the
10 flood.

11 As you can see, this is a very good
12 responding well. It went from about five barrels
13 of water per day to in excess of 50 barrels of
14 oil per day, and it had very sustained response
15 to the waterflood. Its cum, that I estimate as a
16 result of the injection, is over 180,000 barrels
17 of oil.

18 Q. How close is this well to the
19 offsetting wells in which injection was a factor?

20 A. It's within 900 feet of Well No. 7.

21 Q. So this well is not only showing the
22 best response, but it is closer to the offsetting
23 injection wells and the other wells you've shown
24 here today?

25 A. Right, and we think this is somewhat

1 related.

2 Q. In your opinion, without the
3 implementation of this waterflood project, would
4 the additional recoveries shown on Exhibits 6, 7
5 and 8 ever have been achieved?

6 A. No.

7 Q. How much additional recovery to the
8 unit are you projecting will occur as a result of
9 the proposed conversions of the No. 9 and No. 10
10 wells?

11 A. As a direct result of the conversion of
12 Nos. 9 and 10, I'm expecting in excess of 100,000
13 barrels in secondary reserves.

14 Q. Without this conversion, would those
15 reserves ever be produced?

16 A. No, sir, they would not.

17 Q. In your opinion, would that result in a
18 waste of these reserves?

19 A. Yes, it would.

20 Q. Do you have an opinion as to the impact
21 the approval of this application will have on the
22 correlative rights of Mr. Nelson?

23 A. I believe Mr. Nelson will likely
24 benefit from the conversion of these wells to
25 injection. He will produce additional oil and he

1 will likewise produce additional water, which is
2 always associated with a waterflood. But I
3 believe overall he's going to benefit from these
4 conversions, and not share in the cost of
5 injecting the water or making the conversions.

6 Q. How close is his nearest well to the
7 nearest well you propose to convert?

8 A. About 900 feet.

9 Q. Is the close proximity to a new
10 injector a plus or a minus when you try and
11 evaluate the impact on his property?

12 A. One of the main reasons we can recover
13 additional reserves from this reservoir is that
14 we are in the process of down spacing the
15 reservoir; that is, putting the wells closer and
16 closer together. We feel you can gain additional
17 reserves by going through this process, and we've
18 spent a substantial amount of money to achieve
19 this.

20 Q. Is it fair to say that it only being
21 900 feet away will, in fact, improve the response
22 he will see in his well as opposed to being a
23 minus?

24 A. It would probably be an improvement in
25 that he'll probably recover his reserves much

1 faster, reserves that he currently does not have,
2 because without the conversions they don't exist.

3 Q. In your opinion, will approval of this
4 application be in the best interest of
5 conservation, the prevention of waste and the
6 protection of the correlative rights of all
7 interest owners in the area?

8 A. Yes, I believe it will.

9 Q. Were Exhibit 4, 4A, 5, 6, 7 and 8
10 prepared by you or compiled under your direction?

11 A. Yes, they were.

12 MR. CARR: At this time, Mr. Catanach,
13 we would move the admission of Greenhill Exhibits
14 4, 4A, 5, 6, 7 and 8.

15 EXAMINER CATANACH: Greenhill Exhibits
16 4, 4A, 5, 6, 7 and 8 will be admitted as
17 evidence.

18 MR. CARR: That concludes my direct
19 examination of Mr. Bupp.

20 EXAMINATION

21 BY EXAMINER CATANACH:

22 Q. Mr. Bupp, do you know what the current
23 production on Mr. Nelson's wells are?

24 A. I believe his Well No. 5 makes about
25 five barrels of oil and three barrels of water,

1 and his Well No. 2 is similar. It makes about
2 five barrels of oil and two or three barrels of
3 water.

4 Q. Are the No. 9 and 10 wells, are they at
5 such a point where they're not producing any oil
6 anymore?

7 A. No. 10 is temporarily abandoned and
8 it's had its production equipment removed. And
9 Well No. 9 is currently producing about five
10 barrels of oil with about five barrels of water,
11 and it's currently a commercial well.

12 Q. Have you examined the wells in the area
13 of review of these two injection wells, and have
14 you found those wells to be completed in a
15 satisfactory manner to ensure no migration of
16 fluid?

17 A. Outside of the injector zone?

18 Q. Outside of the injection interval.

19 A. No, there's no chance that that could
20 happen.

21 Q. You've also examined the wells that
22 were plugged and abandoned, the two wells that
23 were plugged and abandoned?

24 A. That is correct.

25 Q. Those were plugged in a satisfactory

1 manner?

2 A. That's correct.

3 Q. Is there any way to estimate ahead of
4 time what benefit Mr. Nelson will gain from
5 waterflooding or from you converting these two
6 wells, in terms of reserves?

7 A. We could make an estimate of his
8 additional reserve just like we have made an
9 estimate of what we would gain. We have not done
10 that.

11 Q. Substantially more than what Mr. Nelson
12 would produce without added benefit of injection?

13 A. Yes.

14 Q. Are the 9 and 10 wells, those aren't
15 located any closer than 330 feet from the outer
16 boundary of your unit?

17 A. No, I don't believe so.

18 Q. You said something about the injection
19 volume. Is that pretty much average, 100 to 150
20 barrels a day?

21 A. Yes, it is.

22 Q. You don't expect that the 9 or 10 wells
23 will take anything more significant than that?

24 A. No, I don't, at all. Based on our log
25 interpretation, they are no better than any of

1 the other wells in the field. This is probably
2 an area where rock quality begins to deteriorate,
3 so he'll probably be lucky to put 100, 150
4 barrels of water per day.

5 EXAMINER CATANACH: I believe that's
6 all I have.

7 MR. CARR: That's all we have in this
8 case, Mr. Catanach.

9 EXAMINER CATANACH: The witness may be
10 excused.

11 There being nothing further, Case 10549
12 will be taken under advisement.

13 (And the proceedings concluded.)
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18

19 I do hereby certify that the foregoing is
20 a complete record of the proceedings in
the Examiner hearing of Case No. 10549,
heard by me on September 17 1992.
21 David L. Catanach, Examiner
22 Oil Conservation Division
23
24
25

1 CERTIFICATE OF REPORTER

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

5
6 I, Carla Diane Rodriguez, Certified
7 Shorthand Reporter and Notary Public, HEREBY
8 CERTIFY that the foregoing transcript of
9 proceedings before the Oil Conservation Division
10 was reported by me; that I caused my notes to be
11 transcribed under my personal supervision; and
12 that the foregoing is a true and accurate record
13 of the proceedings.

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

19 WITNESS MY HAND AND SEAL September 30,
20 1992.

21
22
23 
24 CARLA DIANE RODRIGUEZ, RPR
25 CSR No. 4