

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

NEW MEXICO OIL CONSERVATION DIVISION
STATE LAND OFFICE BUILDING
STATE OF NEW MEXICO

CASE NOS. 10641 and 10642 (Consolidated)

IN THE MATTER OF:

The Application of Yates Drilling Company, for the Expansion of the Cactus Queen (Voluntary) Unit Area and for the Amendment of Division Order No. R-9075-A, Chaves County, New Mexico.

The Application of Yates Drilling Company for the Expansion of the Cactus Queen (Voluntary) Unit Waterflood Project Area, to Amend Division Order No. R-9075-B, and to Qualify said Expansion Area for the Recovered Oil Tax Rate Pursuant to the "New Mexico Enhanced Oil Recovery Act," Chaves County, New Mexico.

BEFORE:

MICHAEL E. STOGNER

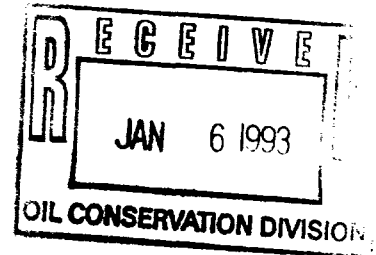
Hearing Examiner

State Land Office Building

December 17, 1992

REPORTED BY:

CARLA DIANE RODRIGUEZ
Certified Shorthand Reporter
for the State of New Mexico



COPY

A P P E A R A N C E S

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

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.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

I N D E X

Page Number

Appearances	2
WITNESSES FOR THE APPLICANT:	
1. <u>DOUGLAS HURLBUT</u>	
Examination by Mr. Carr	5
Examination by Mr. Stogner	13
2. <u>TOBIN L. RHODES</u>	
Examination by Mr. Carr	15
Examination by Mr. Stogner	32
Examination by Mr. Stovall	35
Certificate of Reporter	43

E X H I B I T S

Reference

Exhibit No. 1	8
Exhibit No. 2	9
Exhibit No. 3	9
Exhibit No. 4	10
Exhibit No. 5	12
Exhibit No. 6	17
Exhibit No. 7	18
Exhibit No. 8	18
Exhibit No. 9	19
Exhibit No. 10	20
Exhibit No. 11	23

1 EXAMINER STOGNER: This hearing will
2 come to order. Call next cases, 10641 and
3 10642.

4 MR. STOVALL: And these cases happen to
5 cover the same subject matter. They are the
6 applications of Yates Drilling Company for
7 expansion of the Cactus Queen voluntary unit
8 area, and for the amendment of Division Order
9 R-9075-A, Chaves County, New Mexico, and Case
10 10642 is the application of Yates Drilling
11 Company for expansion of the Cactus Queen
12 voluntary unit waterflood project area, to amend
13 Division Order No. R-9075-B and to qualify said
14 expansion area for the Recovered Oil Tax Rate
15 pursuant to the New Mexico Enhanced Oil Recovery
16 Act, Chaves County, New Mexico. That's it.

17 EXAMINER STOGNER: Call for
18 appearances.

19 MR. CARR: May it please the Examiner,
20 my name is William F. Carr with the Santa Fe law
21 firm Campbell, Carr, Berge & Sheridan. I
22 represent Yates Petroleum Corporation in each of
23 these cases and I have two witnesses.

24 EXAMINER STOGNER: Any other
25 appearances?

1 MR. CARR: I need to correct that. I'm
2 here for Yates Drilling Company.

3 MR. STOVALL: Who is the Applicant.

4 MR. CARR: That's correct.

5 EXAMINER STOGNER: Will the witnesses
6 please stand to be sworn.

7 [And the witnesses were duly sworn.]

8 EXAMINER STOGNER: Mr. Carr, you may
9 proceed.

10 **DOUGLAS W. HURLBUT**

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

13 EXAMINATION

14 BY MR. CARR:

15 Q. Will you state your name for the
16 record, please?

17 A. My name is Douglas W. Hurlbut.

18 Q. And how do you spell your last name?

19 A. It's H-U-R-L-B-U-T.

20 Q. Where do you reside?

21 A. In Artesia, New Mexico.

22 Q. By whom are you employed?

23 A. I'm employed by Yates Drilling Company
24 and Myco Industries, Inc.

25 Q. In what capacity are you employed by

1 these companies?

2 A. I'm a petroleum landman.

3 Q. Have you previously testified before
4 the New Mexico Oil Conservation Division?

5 A. No, I have not.

6 Q. Would you summarize for Mr. Stogner
7 your educational background and then briefly
8 review your work experience?

9 A. Okay. I graduated from the University
10 of New Mexico in 1972 with a bachelor's degree in
11 university studies, which was major
12 concentrations in business and geology.

13 I'm also a certified petroleum
14 landman. I worked for the Yates Companies about
15 two and a half years. Prior to that for about
16 five years I was self-employed, and prior to that
17 I worked with several small independent
18 producers. I've got a total of about 19 years'
19 experience.

20 Q. All that time as a petroleum landman?

21 A. Yes.

22 Q. Has most of that time been devoted to
23 land matters in the Permian Basin?

24 A. I would say so, yes.

25 Q. Are you familiar with the applications

1 filed on behalf of Yates Drilling Company in
2 these cases?

3 A. Yes, I am.

4 Q. Are you familiar with the status of the
5 lands involved in each of the cases?

6 A. Yes, I am.

7 Q. Would you just briefly state what Yates
8 Drilling Company seeks with these applications?

9 A. An expansion of the Cactus Queen Unit
10 Waterflood Project, and the qualifications of
11 this expansion area for the enhanced oil recovery
12 tax rate.

13 Q. Would you provide the Examiner with
14 just a brief background history on this
15 particular unit?

16 A. The unit was approved on December 14,
17 1989, under order No. R-9075, and the waterflood
18 project was approved March 15, 1990, under Order
19 No. R-9075-B.

20 Q. Mr. Hurlbut, when the unit was
21 originally approved, it was approved in the
22 alternative, one of the options being a statutory
23 unit that included the present unit and some
24 additional acreage owned by the Doyle family, is
25 that correct?

1 A. That's correct.

2 Q. Yates was unsuccessful in obtaining the
3 necessary ratifications to implement a statutory
4 unit?

5 A. That's correct.

6 Q. And what we have here today is a
7 voluntary unit?

8 A. That's correct.

9 Q. Let's identify what has been marked as
10 Yates Drilling Company Exhibit No. 1?

11 A. Okay. Exhibit No. 1 is a plat that
12 shows the outlines of the unit which would take
13 in the previous lands with the now requested
14 lands. The previous lands, which include the 320
15 acres, cover the south half of the southwest
16 quarter of Section 27, the northeast quarter of
17 the southwest quarter of 27, and the west half
18 southeast of Section 27, and also the north half
19 northwest, and the northwest/northeast of Section
20 34.

21 Q. If I look at this exhibit, you've
22 placed tract numbers on each of the 40 acres?

23 A. That's correct.

24 Q. The expansion area would include tracts
25 2B, 2C, 1B, 3B, 3A, 1C, 5A and 5, is that

1 correct?

2 A. That's correct.

3 Q. Let's move now to what has been marked
4 as Yates Exhibit No. 2.

5 A. Okay. This shows the revised ownership
6 of these leases involved in the expansion. The
7 current ownership is owned by the Yates group,
8 Yates Drilling Company, the estate of Martin
9 Yates, III, the estate of Lillie M. Yates and
10 Myco Industries, Inc.

11 Q. This exhibit shows the ownership in the
12 unit as you're proposing to expand it?

13 A. That's correct.

14 Q. All right. Let's identify Exhibit No.
15 3?

16 A. Exhibit No. 3 is the unit agreement
17 that was dated back on November 1, 1989, under
18 the original 320 acres.

19 Q. And this is the unit agreement that you
20 will propose to apply to the expansion area as
21 well?

22 A. This is correct.

23 Q. This unit agreement provides for
24 waterflooding?

25 A. This agreement will cover the existing

1 unit area. It shows the character of the land,
2 it provides for waterflooding, it sets out the
3 basis for participation for each of the parties,
4 and provides for filing of periodic plans of
5 development.

6 Q. Does this agreement also provide for
7 expansions of the unit area?

8 A. Yes, it does.

9 Q. Is that section set forth on page 5 of
10 this agreement?

11 A. Yes.

12 Q. In expanding the unit, have you
13 complied with the provisions of this contract?

14 A. I believe so.

15 Q. And this contract was previously
16 approved or this agreement by the OCD, BLM and
17 the State Land Office?

18 A. Correct.

19 Q. Let's go to Exhibit No. 4. Would you
20 identify that?

21 A. Exhibit No. 4 is the unit operating
22 agreement dated November 1, 1989.

23 Q. Could you generally describe this
24 agreement?

25 A. It outlines the supervision and

1 management of the unit, it defines the rights and
2 duties of all parties, it shows how investment
3 and costs are to be shared, it establishes voting
4 procedures for decisions to be made by the
5 working interest owners, it sets forth accounting
6 procedures, shows how costs will be allocated and
7 paid, and it contains other standard provisions.

8 Q. And this will be the operating
9 agreement that would also apply to the expansion
10 area in the Cactus Queen Unit?

11 A. Yes, it would be.

12 Q. Has Yates reviewed this proposal or
13 this expansion with the Bureau of Land
14 Management?

15 A. Yes, they have.

16 Q. And what response have you received?

17 A. There was no objections.

18 Q. Has this proposal been also reviewed
19 with the Commissioner of Public Lands?

20 A. Yes, it has.

21 Q. And what response, again, did you
22 receive from the Land Office?

23 A. There were no objections, either.

24 Q. And there were no formal letters
25 approving or designating the area, because this

1 is an expansion of an existing unit under the
2 provisions of the agreement, is that correct?

3 A. That's correct.

4 Q. What percentage of the working interest
5 ownership in the voluntary unit is committed to
6 the unit?

7 A. 100 percent.

8 Q. Could you tell me what has been marked
9 as Yates Exhibit No. 5?

10 A. It's an affidavit that I had made up,
11 that I sent out notices to all of the owners of
12 the surface of the lands on which each injection
13 well is located, and I also sent a notice out to
14 the leasehold operators within the area of review
15 for each injection well.

16 Q. As a landman for Yates Drilling, was it
17 your duty to identify these various owners to
18 whom notice has been given?

19 A. Yes, it was.

20 Q. You have provided notice by certified
21 mail that also advised each of those owners of
22 today's hearing?

23 A. I did.

24 Q. And this notice requirement applies to
25 the waterflood portion of the case?

1 A. Right.

2 Q. Were Exhibits 1 through 5 prepared by
3 you or compiled under your direction?

4 A. Yes, they were.

5 MR. CARR: At this time, Mr. Stogner,
6 we would move the admission of Yates' Exhibits 1
7 through 5.

8 EXAMINER STOGNER: Exhibits 1 through 5
9 will be admitted into evidence.

10 MR. CARR: That concludes my direct
11 examination of Mr. Hurlbut.

12 EXAMINATION

13 BY EXAMINER STOGNER:

14 Q. In looking at Exhibit No. 1, what was
15 the original outline for this unit?

16 A. If you look at the thing, it's actually
17 the north half of that unit outline, the north
18 320 acres. Do you want me to give you a
19 description?

20 Q. Yes. Why don't you give me a
21 description.

22 A. Okay. The south half of the
23 southwest--okay, Section 27, south half/southwest
24 quarter, northeast/southwest, west
25 half/southeast. Then in 34, the north

1 half/northwest, and northwest/northeast. That's
2 the original outline.

3 Q. And the remainder southern part?

4 A. Right, is what we're additionally
5 asking for.

6 Q. And your Exhibit #2 includes all
7 interests?

8 A. Yes, it does.

9 Q. Okay. And how about the royalty
10 interests? Have they all agreed to the
11 expansion?

12 A. It would be the State and the BLM, and
13 we've talked to them.

14 Q. Do you have preliminary approval yet or
15 have you received any written confirmation on
16 that?

17 A. No, we do not.

18 Q. Did you have a meeting with the BLM?

19 A. Yes, we did, yesterday.

20 Q. And with the Land Office?

21 A. Yes, we had a meeting today.

22 EXAMINER STOGNER: I have no other
23 questions of this witness at this time.

24 MR. STOVALL: My only question is,
25 you're asking for the EOR tax rate approval. Who

1 wants to talk about that to make sure that you
2 know what you have to do and what we will do?

3 MR. CARR: We're going to be calling an
4 engineering witness who will address that, I
5 think, Mr. Stovall.

6 MR. STOVALL: Okay.

7 TOBIN L. RHODES

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

10 EXAMINATION

11 BY MR. CARR:

12 Q. Would you state your name for the
13 record, please?

14 A. My name is Tobin L. Rhodes.

15 Q. By whom are you employed?

16 A. I'm employed by Yates Drilling Company.

17 Q. In what capacity?

18 A. Petroleum engineer.

19 Q. Have you previously testified before
20 this Division?

21 A. Yes.

22 Q. At the time of that testimony, were
23 your credentials as a petroleum engineer accepted
24 and made a matter of record?

25 A. Yes, they were.

1 Q. Are you familiar with the applications
2 filed in each of these cases on behalf of Yates
3 Drilling Company?

4 A. Yes, I am.

5 Q. Have you made a study of the portion of
6 the Southeast Chaves Queen Pool that's involved
7 in these cases?

8 A. Yes, I have.

9 MR. CARR: Are the witness'
10 qualifications acceptable?

11 EXAMINER STOGNER: Mr. Rhodes is so
12 qualified.

13 Q. Have you prepared exhibits for
14 presentation here today?

15 A. Yes, I have.

16 Q. Could you initially identify for the
17 Examiner the formation that you're proposing to
18 unitize?

19 A. That would be the Queen formation, and
20 it would be identified from a point 50 feet above
21 the top of the Queen formation to the base of the
22 Queen formation, said interval occurring in the
23 Doyal #1 well located 660 feet from the north
24 line, 990 feet from the east line of Section 34,
25 Township 12 South, Range 31 East, Chaves County,

1 New Mexico.

2 Q. This is the well that is referenced in
3 the unit agreement to define the vertical
4 interval, is that correct?

5 A. Yes, it is.

6 Q. That log is on file with the Oil
7 Conservation Division?

8 A. Yes, it is.

9 Q. Has the portion of the reservoir which
10 you propose to include in this unit expansion
11 been recently defined by development?

12 A. Yes, it has.

13 Q. Are there any windows within the
14 proposed unit boundary?

15 A. No.

16 Q. Can we now refer to what has been
17 marked as Yates Drilling Exhibit No. 6, which is
18 a structure map? Would you identify that and
19 then review it for the Examiner?

20 A. Exhibit No. 6 is a structure map on the
21 top of the Queen formation. This map identifies
22 the Cactus Queen waterflood area. It also
23 identifies an adjacent Doyle lease waterflood.
24 It also identifies the area of proposed expansion
25 for the Cactus Queen Unit.

1 There are triangles around existing
2 injection wells; there are dashed triangles
3 around wells proposed for injection.

4 Q. Let's move on, then, to Exhibit No. 7,
5 your porosity map, and I would again ask that you
6 review that for Mr. Stogner.

7 A. Exhibit No. 7 is a porosity map that
8 just identifies from log calculations or just log
9 observations the amount of porosity above 10
10 percent--the net feet of porosity above 10
11 percent. And again, it identifies the waterflood
12 areas as in the previous exhibit.

13 Q. What basically does this exhibit show
14 you?

15 A. It just shows you the areas of the
16 highest porosity and lower porosity in the
17 reservoir.

18 Q. And the continuity of the continuation
19 of this porosity is on across the proposed unit?

20 A. Yes.

21 Q. Let's go to your next exhibit, Exhibit
22 No. 8. Could you identify that, please?

23 A. Exhibit No. 8 is a hydrocarbon foot
24 map. Actually, it's the average porosity of the
25 net pay times the oil saturation. It's contoured

1 over the reservoir, which also shows continuity
2 of the reservoir from the previous unit area into
3 the expansion area.

4 Q. Was this particular exhibit utilized in
5 developing the participation formula for this
6 unit?

7 A. Yes. This Exhibit was planimetered and
8 the planimeter data was utilized in developing
9 the participation formula.

10 Q. Let's move on now to the cross-section,
11 your Exhibit No. 9, and if you would review the
12 trace for the cross-section and then explain what
13 this exhibit shows?

14 A. Exhibit No. 9, the cross-section, six
15 wells, starting in the north at the Cactus Queen
16 Unit #5, going to the Garner Federal #3, Garner
17 Federal #2, Deluna Federal #2, the Dave Federal
18 #2, and the Garner Federal #1.

19 This exhibit shows that the reservoir
20 continues from north to south, where it pinches
21 out in the area of the Garner Federal #1.

22 You'll note that the unit boundary
23 would fall between the Cactus Queen Unit #5 and
24 the Garner Federal #3. There is a small loss of
25 porosity in the Garner Federal #3 as compared to

1 the Cactus Queen Unit #5, but we believe there is
2 a continuation of the reservoir across that
3 interval.

4 Q. Mr. Rhodes, At the previous hearing
5 when the unit was under consideration initially,
6 there was discussion about a permeability barrier
7 on the southern end of the original unit. Could
8 you explain your understanding of that at this
9 time?

10 A. Yes. We did believe that the reservoir
11 closed along the southern boundary of the Cactus
12 Queen Unit. Since that time we believe that some
13 characteristic things that have happened in the
14 reservoir show that the reservoir is continuous
15 across the boundary and into the southern area.

16 Q. What you had actually was a
17 permeability restriction, was it not, and not a
18 barrier?

19 A. That's true.

20 Q. For that reason you've decided to
21 expand the unit, as opposed to forming a separate
22 unit in the southern portion of this area?

23 A. That's correct.

24 Q. Let's go now to what has been marked
25 your Exhibit No. 10. Would you identify that,

1 please?

2 A. Exhibit No. 10 is a listing of oil
3 production from each of the wells in the Cactus
4 Queen Unit. The production from the Cactus Queen
5 Unit is summed, and there's also a listing of
6 each of the wells in the proposed expansion area,
7 and the production from the expansion area is
8 summed.

9 And then, in the very far right-hand
10 column, production from both areas is totalled.

11 Q. And from this information you could
12 determine how wells are performing in the
13 expansion area absent the waterflood project
14 which you are proposing?

15 A. Yes.

16 Q. And so if, at a later date, there was a
17 response to waterflooding and production changed,
18 this information would be the basis to which you
19 could look to determine if there was a change
20 occurring?

21 A. Yes.

22 Q. What is the basis for the participation
23 formula utilized in this unit?

24 A. The participation formula is based on
25 production figures and the hydrocarbon foot map

1 that we previously discussed. This formula is of
2 the same form as the formula we used in the
3 original Cactus Queen Unit Agreement.

4 Q. When you expand the unit, will the
5 relationship of the tracts in the original unit
6 and the formula governing allocation of
7 production to those owners, remain unchanged?

8 A. That's correct. They will remain
9 unchanged as to one another, and the agreement
10 requires that we handle the expansion in that
11 form.

12 Q. And the participation formula has been
13 agreed to by 100 percent of the working interest
14 owners, and when approved by BLM and the Land
15 Office, 100 percent of the royalty interest
16 owners in the expansion area?

17 A. That is correct.

18 Q. Is unitized management operation and
19 the further development of this portion of the
20 Southeast Queen-Chaves Pool, necessary to carry
21 on this secondary recovery operation?

22 A. Yes, I believe it is.

23 Q. Will the unitized methods of operation
24 prevent waste and result in the increased
25 recovery of substantially more oil from the area

1 which is the subject of this case?

2 A. Yes.

3 Q. Does Yates Drilling Company seek
4 authority to commit additional wells to
5 injection, if needed, by administrative
6 procedures?

7 A. Yes, we do.

8 Q. In your opinion, will granting this
9 application for expansion of the Cactus Queen
10 Unit by voluntary unitization, be in the best
11 interests of conservation, the prevention of
12 waste and the protection of correlative rights?

13 A. Yes.

14 Q. Now, I would like to go at this time,
15 Mr. Rhodes, to the waterflood portion of the
16 application, and I would like you to identify
17 what has been marked Yates Drilling Exhibit No.
18 11?

19 A. Yates' Exhibit No. 11 is the C-108 form
20 that has previously filed with the Commission--or
21 the Division. There are several attachments that
22 we will discuss.

23 Q. This is an expansion of a previously
24 approved waterflood project?

25 A. Yes.

1 Q. What is the status of the lands in the
2 project area?

3 A. There is some state land in the
4 northern existing Cactus Queen Unit. The
5 remaining land is federal. All of the land in
6 the expansion area is federal.

7 Q. There are no fee tracts or fee owners
8 with whom you have to deal in this matter?

9 A. That's correct.

10 Q. What is the present status of the wells
11 you're proposing to convert to injection?

12 A. They're all producing Queen oil wells,
13 marginally economic.

14 Q. Let's go to the plat in Exhibit #11,
15 which is on page 3 of that exhibit. I would ask
16 you to review that for Mr. Stogner.

17 A. Page 3 is a plat showing the location
18 of the subject wells. It shows all the wells
19 within a two-mile radius of the injection wells.
20 It shows lease ownership in the area. It also
21 shows the area of review with a one-half-mile
22 circle around the injection well, and page 4 is a
23 blow-up of the same area that further defines the
24 area of review.

25 Q. Does Exhibit No. 11 contain the data on

1 each of the wells within the area of review which
2 penetrate the injection zone, all the data that's
3 required by the Division's rules and the C-108?

4 A. Yes. Pages 5 through 26 include well
5 data sheets for each well in the area of review.
6 Each data sheet includes all the information
7 required by the C-108.

8 Q. Are there plugged and abandoned wells
9 within the area of review?

10 A. There are no plugged and abandoned
11 wells.

12 Q. Could you refer to the schematic
13 drawings of the proposed injection wells and
14 basically review the way you propose to complete
15 these wells, for Mr. Stogner? I think the first
16 one is on page 7, if you could review that in
17 detail?

18 A. Okay. There are schematics on pages 7,
19 14, 16, 21 and 23. Each one of these schematics
20 depicts how the proposed injection well would be
21 configured if the approval is granted to inject
22 into these wells. It identifies the casing of
23 each well, it identifies the amount of cement,
24 and the top of the cement behind each casing
25 string. It identifies the perforated interval

1 and identifies the approximate interval at which
2 the packer would be set which is approximately 50
3 feet above the top perforation.

4 Q. The tubing will be lined tubing?

5 A. Plastic lined tubing.

6 Q. And the annular space will be filled
7 with a fluid?

8 A. Yes.

9 Q. There will be a gauge at the surface to
10 measure the pressure in the annular space as
11 required by the Federal Underground Injection
12 Control Program?

13 A. Yes, there will be.

14 Q. Into what formation are you proposing
15 to inject?

16 A. We're proposing to inject into the
17 Upper Sandstone member of the Queen formation.

18 Q. What is the source of the water you're
19 proposing to inject?

20 A. The source of the water would be
21 unit-produced water, produced water from Yates
22 Drilling-operated Queen wells in the immediate
23 area, and from fresh water from a fresh water
24 source well that we operate.

25 Q. Is that fresh water well on state land?

1 A. Yes, it is.

2 Q. Have you received approval from the
3 Commissioner of Public Lands to produce this
4 water and inject it per your program for the
5 Cactus Queen unit?

6 A. Yes. We received initial approval to
7 use fresh water from this well in the original
8 Cactus Queen Unit, and just recently we've
9 received approval to use the water from this well
10 in the expansion area.

11 Q. What volumes are you proposing to
12 inject?

13 A. We're proposing to inject approximately
14 200 barrels of water per day for each of the five
15 injection wells.

16 Q. And the maximum daily injection rate
17 will be what?

18 A. We do not expect to exceed 400 barrels
19 of water per day.

20 Q. Will the system be open or closed?

21 A. The system will be completely
22 contained.

23 Q. Will you be injecting under pressure or
24 by gravity?

25 A. Initially, the wells will probably take

1 water on a vacuum, but we do anticipate having to
2 inject under pressure.

3 Q. Any time would you envision a
4 circumstance where you would need to inject at
5 the rate in excess of two-tenths pound per foot
6 of depth to the top of the injection interval?

7 A. Initially no, but we think there may be
8 reason to inject at higher pressures than that.
9 If, at some point in time we come to that point,
10 we would like to request that we be granted
11 administrative approval to do step rate tests to
12 verify the validity of increasing the pressure.

13 Q. Does Exhibit No. 11 contain water
14 analyses on the injection fluid?

15 A. Yes. Pages 31 through 36 are water
16 analyses from three of the wells in the expansion
17 area.

18 Q. Would you anticipate that there would
19 be any problems with the compatibility of the
20 fluids you're proposing to inject into the
21 formation?

22 A. No. We've been injecting fresh water
23 and produced water into the Cactus Queen Unit for
24 a couple of years now, and we've had no problem
25 associated with compatibility.

1 Q. Are there fresh water zones in the
2 area?

3 A. Yes, there are. The primary sources of
4 fresh water in the area are the Ogallala aquifer,
5 tertiary age, the base of which is about 300 feet
6 below the surface. And then immediately
7 underlying the Ogallala is the Chinle, which is
8 also a fresh water zone.

9 Q. Are there water wells in the area?

10 A. Yes, there are a number of water wells
11 in the area. On page 27 is a listing of those
12 wells, their location, and the State Engineer's
13 identification number for each of those wells.
14 This list includes all the wells in Townships 12
15 and 13 South, 31 East, which is an area larger
16 than one mile.

17 Q. From what interval are these wells
18 actually producing?

19 A. They're all believed to be producing or
20 to have been producing from the Ogallala
21 formation.

22 Q. Does Exhibit No. 11 contain water
23 analyses from two or more fresh water wells
24 within a mile of the proposed injection wells?

25 A. Yes. Pages 28 through 30 include water

1 analyses from the three fresh water wells closest
2 to the Cactus Queen Unit.

3 Q. Mr. Rhodes, have you examined the
4 available geologic and engineering data on this
5 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. I have found no evidence of any
12 connection.

13 Q. Does Yates Drilling Company seek to
14 qualify this project expansion for the recovered
15 oil tax rate authorized by the Enhanced Oil
16 Recovery Act?

17 A. Yes, we do.

18 Q. In this regard, is the expansion area
19 we're talking about identical to the area covered
20 by Yates' application to expand the waterflood
21 project?

22 A. Yes.

23 Q. What is the estimated capital cost of
24 the additional facilities which will be required
25 for this project expansion?

1 A. The actual capital costs we're
2 anticipating somewhere in the neighborhood of
3 \$75,000.

4 Q. And what is the total estimated project
5 cost for the expansion?

6 A. \$500,000 or less.

7 Q. What is the total value of the
8 additional production that you anticipate can be
9 recovered as a result of a successful
10 waterflooding of the expansion area?

11 A. We estimate the value to be in excess
12 of two and a half million dollars.

13 Q. Basically, what oil price are you
14 using?

15 A. I think it was calculated at \$17.

16 Q. When would you propose to commence
17 injection in the expansion area?

18 A. As soon as possible.

19 Q. Has production data on the expansion
20 area been provided to the Division on the oil
21 production table that was previously presented by
22 you?

23 A. Yes, it has.

24 Q. In your opinion, will approval of this
25 project result in the increased ultimate recovery

1 of oil from the project area?

2 A. Yes.

3 Q. In your opinion, has the expansion area
4 been so depleted that it is now prudent to
5 implement a waterflood project to maximize the
6 recovery of crude oil?

7 A. Yes.

8 Q. Were Exhibits 6 through 11 prepared by
9 you?

10 A. Yes, they were prepared by me or under
11 my direction.

12 Q. Can you testify as to the accuracy of
13 these exhibits?

14 A. Yes, I can.

15 MR. CARR: At this time, Mr. Stogner,
16 we would move the admission of Yates Drilling
17 Company Exhibits 6 through 11.

18 EXAMINER STOGNER: Exhibits 6 through
19 11 will be admitted into evidence.

20 MR. CARR: That concludes my direct
21 examination of Mr. Rhodes.

22 EXAMINATION

23 BY EXAMINER STOGNER:

24 Q. Mr. Rhodes, the capital cost you said
25 was going to be \$75,000, is that correct?

1 A. \$75- to \$100,000.

2 Q. And the half-a-million-dollar cost will
3 be the overall expansion cost?

4 A. Yes.

5 Q. Now, you said the value of production,
6 and this is just out of the expanded area only,
7 is two and a half million?

8 A. Yes.

9 Q. What kind of production are you
10 anticipating? How does this dollar turn into
11 barrels? How many barrels?

12 A. Oh, roughly 250,000 barrels.

13 Q. That's additional barrels on top of the
14 primary?

15 A. Yes.

16 MR. STOVALL: That's just the expansion
17 area?

18 THE WITNESS: Yes. The Queen had a
19 characteristic of producing up to two times the
20 primary production in certain areas, and that's
21 what that number is based on.

22 Q. Now, you have eight wells on your
23 exhibits here, no, I'm sorry, five proposed
24 injection wells and three proposed producing
25 wells. Do you see the anticipated need of

1 additional producing wells?

2 A. No.

3 Q. No plan for any additional wells at
4 this point?

5 A. Well, we're considering possibly
6 drilling one well. Depending on the response we
7 get, that would be somewhere between the Cactus
8 Queen #5 and the Burkitt Federal #1.

9 Q. The northern boundary of the expansion
10 area?

11 A. The northern boundary of the expansion
12 area.

13 Q. The well designations in the expansion
14 area, will they be changed to correlate with the
15 Cactus Queen Unit numbering system?

16 A. Yes, we plan to do that.

17 Q. You don't have a listing of those
18 number changes at this time, do you?

19 A. No, but I can tell you, I think, what
20 they'll be. The last two wells are the 5, 6.
21 The Burkitt #2 will be the #7.

22 Q. I have my exhibit out here, and we
23 might as well put them on the exhibit.

24 A. We'll start left to right, and then
25 work down to the expansion area.

1 Q. Okay.

2 A. The Burkitt Federal #2 will be the 7.
3 The Garner Federal #3 will be the 8. The Burkitt
4 Federal #1 will be the 9. The Deluna Federal #1
5 will be 10. Deluna Federal #2 will be 11.
6 Garner Federal #2 will be 12. Dave #2 will be
7 13. Dave #1 would be 14.

8 I believe that's the way we would do
9 it. It's just straight across from left to right
10 and then down the--

11 EXAMINER STOGNER: Okay. Mr. Stovall?

12 EXAMINATION

13 BY MR. STOVALL:

14 Q. Am I correct in reading, if I take
15 Exhibit No. 10, which is your table that shows
16 primary expansion area, 172,000 barrels to date,
17 that's cum to date? That's not ultimate primary,
18 right?

19 A. That's cum to date. That's correct.

20 Q. Ultimate primary would be somewhere in
21 the 250,000 barrel range?

22 A. What I'm saying is that some areas have
23 twice as much production in secondary as
24 primary. I think that's where you're headed with
25 your question?

1 Q. I'm just trying to get an idea of a
2 ratio of secondary.

3 A. I didn't give it, you know--twice
4 172,000 would be more than 250,000. But I
5 believe it could recover two times as much, but I
6 hedged a little bit and gave it less.

7 Q. In other words, It's significant
8 recovery compared to primary?

9 A. Yes.

10 Q. You are applying or are hoping to get
11 the enhanced oil recovery tax rate under the
12 Enhanced Oil Recovery Act, I assume?

13 A. Yes, we would like to.

14 Q. Are you familiar with the process and
15 did you go through the red tape that's necessary
16 to get that done?

17 A. I'm not personally familiar with it,
18 but people in our company are familiar with it
19 and our counsel is familiar with the process.

20 Q. I think your counsel is, but we've even
21 changed it since he wrote the rule. Your people
22 in house are definitely starting out on the
23 learning curve. I've had discussions with--do
24 the Yates Petroleum accounting people do yours as
25 well?

1 A. We're very closely associated.

2 Q. The reason I'm asking, the only reason
3 is to find out if we're dealing with the same
4 people or if we're starting with a new set of
5 people as far as the accounting requirements?

6 A. They are actually separate people, but
7 we share--

8 Q. They have access to each other?

9 A. Correct.

10 Q. Okay. Under this process, it's kind of
11 a two-part process. The first thing we have to
12 do is approve the waterflood expansion itself.
13 Then we also have to make a determination, as
14 part of that approval, that it does, in fact,
15 qualify, because it is an expansion, it does, in
16 fact, qualify as an expansion for tax credit
17 purposes as has been established by the rules of
18 the Division.

19 The next phase, once you get the
20 approval for the waterflood you would begin
21 construction of the facilities necessary. How
22 long do you think it would take you to construct
23 the facilities and actually have a physical plant
24 in place to begin injection operations?

25 A. Well, our original plant was so built

1 that it accepts expansion. In other words, the
2 addition of another pump. The time-consuming
3 part of this would be the laying of injection
4 lines.

5 Assuming that we could get a contractor
6 immediately, I think in three to four months we
7 could be ready to inject.

8 Q. Where that becomes significant is, once
9 we certify that this is a qualified project, you
10 have five years in which to get a positive
11 production response. Do you understand that?

12 A. Within about a year we started seeing
13 production responses in the north area and in the
14 Doyal lease waterflood, so we expect to have a
15 response within about a year.

16 Q. Okay. Now, the process we've
17 established is that after we approve the project,
18 in order to give you the maximum amount of time,
19 we would actually not issue the certification for
20 the project until you were actually ready to
21 begin injection. Is that an issue here or,
22 assuming we approve the project, should we go
23 ahead and issue a certification for the project
24 immediately upon approval? That's a paperwork
25 thing. It's nothing more than paperwork.

1 A. I would prefer to wait until we start
2 injection, because there are a lot of unknowns in
3 laying lines underground and lining up
4 contractors and getting pipe and things like
5 that. I don't anticipate any more time than
6 three to four months, but it's possible that it
7 could be longer.

8 Q. That places the burden on you to come
9 back to us--and Mr. Carr is familiar with this,
10 he has done it for Yates Petroleum already one
11 time--at which time you ask us to certify the
12 project as being qualified.

13 For information purposes only, at that
14 time we notify the Taxation & Revenue Department,
15 and it enables them to anticipate. And then you
16 understand that within five years from the day we
17 issue that certificate, then you are obligated to
18 come back, if you want the credit, to come back
19 in and apply for a certification of positive
20 production response.

21 A. Okay.

22 Q. At that time, and our process now
23 requires that to be a hearing. We made that an
24 administrative hearing and the rules require it
25 be done administratively; so, for the moment, you

1 can anticipate a hearing. If we find you have a
2 true positive production response, we will then
3 certify to Tax & Rev that you're qualified for
4 the credit, and it can be retroactive back to the
5 date of the actual positive production response
6 as you demonstrate. Are you clear on that?

7 A. Yes.

8 Q. From what your testimony is, Exhibit 10
9 is really the baseline numbers against which we
10 would measure production to determine a
11 production response?

12 A. Yes.

13 Q. You understand that that is for the
14 expansion area and not on a well-by-well basis?
15 Obviously, when you convert some wells you lose
16 production in that regard, but you do,
17 presumably, get it back from the other wells that
18 are getting the benefit of the waterflood,
19 correct?

20 A. That's correct.

21 Q. I think that summarizes the process.
22 Because it is a new process, we try to educate
23 people on that process.

24 And I have one other question. The way
25 the identification is done is that we do identify

1 a project by name. Do you have any specific name
2 or should we call this the Cactus Queen
3 Waterflood Project Expansion Area 1?

4 A. I have no preference. That would be
5 fine with me, Expansion Area 1.

6 Q. It has to be uniquely identifying name
7 because some day, somewhere, it's going to get
8 into somebody's accounting system by name. If
9 you have any other suggestions, that's fine. I
10 don't mean to assign the name.

11 A. I don't have any problem with that, and
12 I'll verify that with our accounting department,
13 but I don't see why that would be a problem.

14 MR. STOVALL: Details. Details.
15 That's it.

16 EXAMINER STOGNER: Anything further?
17 Does anybody else have anything further of this
18 witness?

19 MR. CARR: Nothing further, Mr.
20 Stogner.

21 EXAMINER STOGNER: Mr. Carr, do you
22 have anything further in either one of these
23 cases?

24 MR. CARR: Nothing further.

25 EXAMINER STOGNER: With that, both Case

1 Nos. 10641 and 10642 will be taken under
2 advisement, and we'll take a recess until 8:15
3 tomorrow morning.

4 (And the proceedings concluded.)
5
6
7
8
9
10
11
12

13
14
15
16
17
18
19
20
21
22
23
24
25

I do hereby certify that the foregoing is
a complete and correct transcript of
the Examiner's hearing of Nos. 10641 and 10642
heard by me on 17 December 1992.
Michael C. Stone, Examiner
Oil Conservation Division

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 December 30,
20 1992.

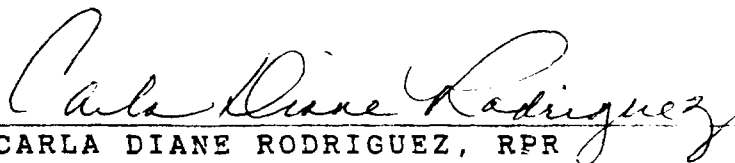
21

22

23

24

25


CARLA DIANE RODRIGUEZ, RPR
CSR No. 4