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

CASE 10,564

EXAMINER HEARING

IN THE MATTER OF:

Application of Yates Petroleum Corporation to
qualify a certain carbon dioxide injection pilot
project for the recovered oil tax rate pursuant to
the "New Mexico Enhanced Oil Recovery Act", Eddy
County, New Mexico

ORIGINAL

TRANSCRIPT OF PROCEEDINGS

BEFORE: MICHAEL E. STOGNER, EXAMINER

STATE LAND OFFICE BUILDING

SANTA FE, NEW MEXICO

October 1, 1992

A P P E A R A N C E S

1
2
3 FOR THE DIVISION:

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9
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1 WHEREUPON, the following proceedings were had
2 at 10:05 a.m.:

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5 EXAMINER STOGNER: This hearing will come to
6 order.

7 Call Case Number 10,564 at this time.

8 MR. STOVALL: Application of Yates Petroleum
9 Corporation to qualify a certain carbon dioxide
10 injection pilot project for the recovered oil tax rate
11 pursuant to the "New Mexico Enhanced Oil Recovery Act",
12 Eddy County, New Mexico.

13 EXAMINER STOGNER: Call for appearances.

14 MR. CARR: May it please the Examiner, my
15 name is William F. Carr with the Santa Fe law firm,
16 Campbell, Carr, Berge and Sheridan.

17 I represent Yates Petroleum Corporation, and
18 I have one witness.

19 EXAMINER STOGNER: Are there any other
20 appearances?

21 Will the witness please stand to be sworn at
22 this time?

23 (Thereupon, the witness was sworn.)

24 EXAMINER STOGNER: You may be seated.

25 Mr. Carr?

1 A. Yes, sir, I am.

2 Q. You are, in fact, the engineer who is
3 responsible for this CO₂ pilot project?

4 A. Yes, sir, I am.

5 MR. CARR: Are the witness's qualifications
6 acceptable?

7 EXAMINER STOGNER: Mr. Fant is so qualified.
8 How do you spell your last name, sir?

9 THE WITNESS: F-a-n-t.

10 EXAMINER STOGNER: I got it right. Okay,
11 thank you.

12 Q. (By Mr. Carr) Mr. Fant, what does Yates seek
13 with this Application?

14 A. We seek the approval of our West Loco Hills
15 Grayburg Number 4 Sand Unit CO₂ pilot project for the
16 recovered oil tax rate.

17 Q. And this project is located in the West Loco
18 Hills Grayburg Number 4 Unit?

19 A. Yes, sir.

20 Q. And when was that unit approved?

21 A. That unit was approved in January, to be
22 exact, January 17th of 1966, and it was Order R-2166.

23 Q. Could you identify the plat -- the boundaries
24 of the pilot project, which is attached to Yates
25 Exhibit Number 1?

1 A. Yes, Exhibit Number 1 is our Application in
2 this matter, and the last page is a plat of the project
3 area. This is, in fact, is the same plat that was
4 filed in our Application earlier this year for approval
5 of the pilot project.

6 Basically, we have a 640-acre project area,
7 comprising the west half of Section 7 and the east half
8 of Section 12. Now, those are in Township 18 South, 29
9 and 30 East. The project area splits the township
10 boundary.

11 They are within the Loco Hills Queen Grayburg
12 San Andres Pool, and production is from the Grayburg
13 formation.

14 Q. Could you review the proposed pilot project
15 for Mr. Stogner?

16 A. Our project is a CO₂ WAG injection project.
17 Our anticipated injection rates are 1000 MCF per day
18 per well for two months, followed by 400 barrels of
19 water per day per well for one month, with a total
20 anticipated CO₂ injection of approximately 27,500 tons.

21 Q. And what is the current status of your
22 efforts to implement this project?

23 A. We have drilled the two new injection wells
24 that were part of the original Application for the CO₂
25 pilot project. Those are drilled and completed.

1 We have repaired all but two of the older
2 wells within the project area, as required by that
3 project.

4 Q. And how soon do you propose to commence the
5 injection of carbon dioxide?

6 A. We anticipate injection November 1 of this
7 year, 1992.

8 Q. Was this project approved after March 6th,
9 1992?

10 A. Yes, sir. The Order was R-2178-D, and that
11 was approved on July 9th of 1992.

12 Q. Could you identify for Mr. Stogner the
13 producing wells in the pilot project area?

14 A. Okay. If we will turn to page 3 of our
15 Exhibit 1, each of the producing wells is identified by
16 footage locations.

17 Q. And does this exhibit, on page 3, also
18 identify the two injection wells?

19 A. Yes, sir.

20 Q. What are the estimated additional capital
21 costs to be incurred in this project?

22 A. Our anticipated new drilling costs are
23 \$665,200; well repair, \$745,000; and facilities,
24 \$587,500.

25 Q. And what are the total project costs?

1 A. Total project costs are anticipated to be
2 around \$4 million.

3 Q. What is the estimated total value of the
4 additional production that will be recovered as a
5 result of the pilot project?

6 A. Right now we're looking at on the pilot about
7 65,000 barrels over the next three years. If we took
8 that at \$20 a barrel, we'd be looking at \$1.3 million.

9 Now obviously, gentlemen, this is not going
10 to pay for the \$4-million project cost.

11 Q. If this is in fact a successful pilot
12 project, what are Yates' plans?

13 A. Our plans upon having a successful pilot
14 project would be a five-stage expansion of this project
15 resulting in an anticipated 14 million barrels of oil
16 over the next 25 years. Now, if you take that same
17 amount, it's considerably more valuable.

18 Q. And in fact, you would have project costs
19 that would be less than a third of what you would hope
20 to recover; isn't that fair?

21 A. Yeah, we'd be looking at about \$280 million
22 at that same \$20 a barrel for project costs of less
23 than a third of that amount. So the economics become
24 very good at that point.

25 Q. Now, Mr. Fant, in this hearing you're only

1 seeking approval of the pilot project. If you go to a
2 five-stage program and expand the project, you would
3 come back and seek authority to expand the project and
4 then qualify it again for the tax rate; is that
5 correct?

6 A. Yes, sir.

7 Q. At the May 14, 1992, Examiner Hearing on this
8 pilot project, did you review the production history of
9 the wells in the project area?

10 A. Yes, we did.

11 MR. CARR: Mr. Stogner, that was Case 10,476,
12 and we would request that the record in that case be
13 incorporated into this proceeding today.

14 EXAMINER STOGNER: The record in Case Number
15 10,476, which Order R-2178-D, as in dog, was issued.

16 MR. CARR: Or as in dynamite.

17 EXAMINER STOGNER: Or -- Never mind, Mr.
18 Carr.

19 Q. (By Mr. Carr) Mr. Fant, should the
20 application of carbon dioxide to the project area
21 result in an increase in the amount of crude of crude
22 oil ultimately recovered therefrom?

23 A. Yes, sir.

24 Q. Has the project area been so depleted so that
25 it is prudent to implement a carbon dioxide flood to

1 maximize the ultimate recovery of crude oil from the
2 project area?

3 A. Yeah, we are -- It is quite depleted in this
4 area.

5 The original water flood was implemented in
6 1966, and that was essentially the end of the primary
7 phase. And so we are looking at -- We are well beyond
8 the heyday of the secondary recovery project. In fact,
9 we might be a little behind schedule in getting a
10 tertiary flood implemented in this project.

11 Q. So this project in this Application has not
12 been prematurely filed?

13 A. No, sir, it has not been prematurely filed.

14 Q. In your opinion, is the implementation of this
15 CO₂ project economically and technically feasible?

16 A. Yes, sir, both Yates Petroleum and the
17 working interest owners in the project feel that we
18 have a technically and economically feasible project.

19 As mentioned before, the total project, when
20 you -- If you just were to put it at a \$20-per-barrel
21 price, you would be looking at \$280 million in revenue
22 for the project, as versus costs of less than a third
23 of that, which would give stellar economic...

24 Q. Have you reviewed Exhibit Number 1, and can
25 you testify to its accuracy?

1 this small project area as of this time, just to have
2 some additional information?

3 A. We can provide that to you.

4 Q. Now, as far as -- You were talking about if
5 this thing becomes the five-stage expansion that you're
6 talking about, that it's about \$280 million in total
7 oil revenue at \$20 a barrel?

8 A. Uh-huh.

9 Q. And of course that has a discounted value --

10 A. Yes, sir.

11 Q. -- based upon a 25-year period?

12 A. Uh-huh.

13 Q. What about your costs? Where are they in the
14 time line?

15 A. Well, the costs are essentially spread out,
16 essentially over the 25 years at about five-year
17 intervals across that, because the costs are primarily
18 new drilling, repair of old wells and gathering systems
19 and the purchase of CO₂. So those project costs are
20 also spread out throughout the project on essentially
21 five-year increments also.

22 Q. So we can -- We're really comparing the same
23 age of dollars against each other, for the most -- give
24 or take?

25 A. Roughly, yeah, you'd be dealing in more like

1 a five-year discount instead of a 25-year discount, so
2 the discount is much smaller.

3 Q. I assume your additional costs over the new
4 well -- new drilling and well repair and facilities is
5 the CO₂ and the actual operating costs?

6 A. Yes, sir, that's CO₂ operating costs and
7 rentals and things of that nature for the project
8 itself.

9 EXAMINATION

10 BY EXAMINER STOGNER:

11 Q. Mr. Fant, in looking at your description of
12 the project area and the total acreage and such as
13 that, that seems to differ than what the Order R-2178-
14 D, as in dynamite, authorized for the project area.

15 Are there plans to include other CO₂
16 injection wells?

17 A. Not at this time, no, sir.

18 Q. If I remember right, the Order -- How should
19 you say that? -- authorized --

20 A. -- southeast and northeast.

21 Q. And even then it was just constricted to
22 those particular six wells that would be affected by
23 the injection?

24 A. Yes, sir.

25 Q. You're not --

1 A. Okay, we may be dealing in a minor -- in a
2 case of semantics.

3 The State asked us, and we agreed to repair
4 all wells within this inner circle on the project area,
5 which is, you know, basically the east half of the one
6 and the west half of the other, as part of the project,
7 because those are the wells within a half mile of the
8 injection wells, and to repair those wells and monitor
9 them as part of a -- part of the original Application.

10 Q. So that was done to satisfy certain UIC and
11 Division requirements --

12 A. Yes, sir.

13 Q. -- for injection?

14 A. Yes, sir, and you are correct in that the
15 technical pilot project itself, as defined in the
16 Order, is approximately 160 acres, comprising the
17 central four quarter quarter sections of the area we
18 just spoke of, of that 640.

19 Q. Now, presently there's five producing wells,
20 two injection wells, and, if I remember right, also
21 there was a finding or something in the original Order
22 talking about a sixth producing well, if it be
23 necessary. Is that --

24 A. Yes, sir. Yes, sir. Our plans are, and that
25 is the West Loco Hills Grayburg Number 4 Sand Unit.

1 Tract 13, Well Number 12 would be its location. It
2 would essentially complete the patterns, the inverted
3 five-spot patterns for us.

4 Q. Now, if that well is not drilled, it is not
5 your contention that -- When I look at Exhibit A on
6 your Exhibit 1 today -- that's the last page of Exhibit
7 1 --

8 A. Uh-huh.

9 Q. -- if I look at that map and look directly to
10 the west, I see a well designated Number 11.

11 A. Uh-huh.

12 Q. You're not suggesting today that that well
13 would be affected by the CO₂ injection project?

14 A. No, I -- It could be. That is still within
15 the pilot project area. That would still be -- That
16 well is still within that quarter quarter section
17 designation on the pilot project.

18 But, you know, and our plans are to later
19 this year drill that 13-12 prior to CO₂ getting over
20 there.

21 MR. STOVALL: How many additional wells would
22 be brought into the certified project area under this
23 Application today, as opposed to wells -- I'm
24 specifically concerned about production wells since
25 they're only -- the two injection wells are right in

1 the center.

2 How many additional production wells are
3 being brought into it by expanding that area from 160
4 to 640 acres?

5 THE WITNESS: There will be no more, because
6 we have temporarily abandoned all wells, all other
7 wells. The -- except for the -- Mr. Stogner pointed
8 out well number 11. That well is producing. And well
9 number -- tract number 1, well number 6 is also
10 producing. Those are within the project area.

11 They are not considered project wells because
12 when we -- they are outside of the patterns of
13 injection for CO₂.

14 MR. STOVALL: But they are within the
15 proration units that are affected by the pattern of
16 injection; is that correct?

17 THE WITNESS: If you're talking about the 40-
18 acre proration units, yes, sir. And since -- They
19 being outside of the pattern area, they will not
20 receive CO₂.

21 All other wells within the 640-acre area that
22 we're speaking of today have been temporarily abandoned
23 and are not producing or -- There are some wells that
24 are injecting in that area to maintain control of the
25 fluids. As we spoke of in the original Application

1 there, what we are terming boundary injection wells,
2 barrier injection wells.

3 Q. (By Examiner Stogner) Now, it's my
4 understanding we can consider this a tertiary recovery
5 project?

6 A. Yes, sir.

7 Q. So therefore it would fall under the seven-
8 year rule for positive production response; is that
9 your understanding?

10 A. Yes, sir.

11 EXAMINER STOGNER: And in that I'm referring
12 to the rules and procedures as laid out by Order Number
13 R-9708, under Positive Production Response
14 Certification, Part 2, Subpart C2. For tertiary
15 recovery project, the application for certification of
16 a positive production response must occur not later
17 than seven years from the date the Division issues the
18 certification of approval for the enhanced recovery
19 project or expansion.

20 MR. STOVALL: That is the applicable section,
21 that's what --

22 MR. CARR: That is correct.

23 MR. STOVALL: I guess that's the question.

24 Okay.

25 Now, Mr. Fant, I hope you understand, we're

1 going through this exercise because this is the first
2 such project we've dealt with under the new rules.

3 THE WITNESS: Yes, sir.

4 MR. STOVALL: And normally the Oil
5 Conservation Division is concerned with proration units
6 and wells and production as recorded on a well basis
7 within the -- for the Division.

8 However, the Taxation and Revenue Department
9 is concerned with lands as well as wells, and so it's
10 sort of a dual identification.

11 I have some concern about the 640-acre
12 project area as being the certified area.

13 I'll tell you also that we understand -- You
14 know, the nature of these things is sometimes you don't
15 know where you're going to affect until you do.

16 My inclination is to say that we certify the
17 160 acres approved as the project because I think,
18 first, that's the approved project. And really all
19 you're doing in this hearing today is ask us to certify
20 to Tax and Rev for a project which has already been
21 approved.

22 THE WITNESS: Yes, sir.

23 MR. STOVALL: And in the future, these types
24 of hearings are actually not going to be necessary
25 because this information should be covered in the

1 project application first. That's our intent.

2 THE WITNESS: Yes, sir.

3 MR. CARR: Right.

4 MR. STOVALL: But I'm inclined to think that
5 we're going to have to certify the 160 acres, the four
6 quarter quarters surrounding the pattern, rather than
7 the full 640.

8 THE WITNESS: That's fine, that would be very
9 good.

10 MR. STOVALL: And incidentally, again for
11 information, that would not preclude, if you were to
12 have success beyond that range of -- I think we would
13 entertain applications to expand an area based upon
14 response rather than activity, if it showed that --

15 THE WITNESS: Okay.

16 MR. STOVALL: -- we are experimenting with
17 this thing to --

18 EXAMINER STOGNER: Are you familiar with the
19 term "positive production response" as it applies to
20 this procedure?

21 THE WITNESS: Yes, sir.

22 EXAMINER STOGNER: I'm not sure I am.

23 MR. STOVALL: Mr. Examiner, that's why I was
24 asking him to give us some production data on the
25 project area, and you can cut that down to the 160-acre

1 area so that we have sort of a baseline today.

2 And then I understand what you're going to do
3 is waterflood that project area for a short time to
4 kind of establish a rate in there, using the existing
5 -- the proposed pattern --

6 THE WITNESS: Yes, to --

7 MR. STOVALL: -- and then go your CO₂.

8 THE WITNESS: Yes, that's to be sure that
9 there is not any additional secondary oil within this
10 project that would be considered a -- That's to
11 eliminate that from being considered the positive
12 production response in relation to the CO₂, such that
13 when we do see a CO₂ response, we know that that is due
14 to CO₂ and not just due to water flow.

15 Q. (By Examiner Stogner) Also with such a big
16 area, if the 640-acre were approved, how many producing
17 wells are in that area?

18 A. Oh, there's a total of -- If we changed the
19 area from the 160 acres originally approved to the 640
20 acres, there is no change in the number of production
21 wells, because we have abandoned, temporarily
22 abandoned, all of those other wells within that 640-
23 acre project area that we're speaking of.

24 So there would be no change, no additional
25 wells brought in.

1 Q. Do you foresee that any of those wells within
2 this 640-acre area that we're talking about would be
3 brought back on production?

4 A. Not until such time as we brought the project
5 back for expansion into the five-stage project. We
6 would not -- I do not anticipate bringing any of those
7 wells back on line during the, quote, unquote, pilot
8 project.

9 Q. So in this particular case, just in looking
10 at that 640 acres, if I was to guess, there would be --
11 Well, let me ask this: How many potential producer
12 wells, producing wells, are within that 640 acres?
13 Just a rough estimate.

14 A. Rough estimate should be 16 --

15 Q. So with this --

16 A. -- you know, basically on a 40-acre pattern
17 basis that we would bring the project back on.

18 Q. So with these 16 producing wells we'd have a
19 certain production decline. And if you had five wells
20 that was actually seeing some sort of response, the
21 remainder of these wells, the decrease for production
22 could not -- or your increase in production could not
23 substantiate or dilute the regular production decline,
24 if you were to see some sort of an abnormal decline
25 over that period.

1 There again, positive production response
2 talks about a rate of oil production from the wells
3 affected by the enhanced recovery project.

4 So if you say 640 and you have 16 producing
5 wells, and you had a sharper decline than normal, that
6 wouldn't offset the five wells in which you had a
7 response later, so it could be looked at that you
8 didn't receive a response over the 640 acres?

9 A. Well --

10 Q. Believe me, I've sat here lots of times and
11 thought about that.

12 A. Well, okay, yeah, I guess I'm understanding
13 what you're saying. I believe I am.

14 In the instance of this project, there's only
15 two of those wells within that area that have actually
16 been producing within the last year, and we abandoned
17 those a couple of months ago.

18 And when we established the baseline of
19 production for this project over this waterflood
20 period, the only wells that are producing are these
21 pilot project wells, are the -- basically the five that
22 are listed here plus the two that are right outside.
23 They all go into the same battery.

24 We have metering and production monitoring on
25 each and every one of those wells, and those are the

1 only wells that even have a chance of seeing the
2 response, and we will have a baseline for those wells
3 under this particular production scenario.

4 Q. So the scenario which I've just described, or
5 tried to describe, or attempted to or may not have made
6 much sense, does not hold true in this particular
7 instance?

8 A. I don't think it will hold in this instance
9 because of the time in which those wells were
10 abandoned. They were abandoned -- Well, I say
11 temporarily abandoned, not plugged and abandoned.
12 Abandoned in a temporary sense.

13 And we will have a solid several-month
14 baseline of production on the actual wells within the
15 project, albeit a 640-acre project or the 160. It will
16 be -- It's the same producing wells either way.

17 MR. STOVALL: Mr. Examiner, I think again
18 this reaffirms the idea that perhaps we ought to stick
19 at the 160.

20 I would suggest that it may be appropriate to
21 include those two other wells that are within that 160-
22 acre area, in that part, because I don't know how you
23 exclude wells that are within a project area and
24 proration unit and not address them in the
25 certification.

1 THE WITNESS: That would -- You know, the 160
2 acres, as I said before, would be fine, and there would
3 be no problem in including those two outside wells, the
4 tract 13, number 11, and the tract 1, number 6, in that
5 production response. In fact, I think that would be
6 good.

7 MR. STOVALL: And that is the -- Though that
8 is the proper description of those wells without the
9 footage calls; is that correct?

10 THE WITNESS: Yes, sir.

11 MR. STOVALL: And you can supplement that
12 with the footage, the description, as you have in the
13 Application exhibit?

14 MR. CARR: Yes, sir, we can.

15 MR. STOVALL: Add those wells to the --

16 MR. CARR: We'll file an Amended Application
17 identifying those two additional wells.

18 MR. STOVALL: And reduce the area?

19 MR. CARR: Yes, sir.

20 EXAMINER STOGNER: I can't think of any
21 additional questions of this witness at this time,
22 although we are --

23 MR. STOVALL: I think, Mr. Examiner, the one
24 thing we ought to bear in mind, and the Order ought to
25 reflect it, is that as we start implementation there

1 may be some requests for additional information which
2 can be done administratively, and -- to assure that we
3 have all that we need for Taxation and Revenue,
4 particularly with respect to production.

5 I think that's where it may be the -- Again,
6 get some established history as of this time,
7 established history after you do your waterflood, the
8 test period, and then we'll do our best to determine
9 how best to do the positive production response,
10 assuming you get one.

11 MR. CARR: Mr. Examiner, I might note that
12 when we start getting what we believe is a positive
13 production response at that time, probably we're all
14 going to figure out what is meant. We'll probably know
15 it when we see it, or at least we'll get closer to it
16 at that time.

17 Furthermore, I would request that if the
18 project is approved, that it immediately be certified
19 to Taxation and Revenue, because Yates is targeting a
20 November commencement of injection of CO₂.

21 MR. STOVALL: Well, the project has
22 technically been approved. You're really just -- All
23 you're requesting in this hearing is the certification.

24 MR. CARR: We are requesting approval of the
25 project, and that it -- Well, actually that's right,

1 just the certification.

2 But instead of -- As was done in the Texaco
3 case, asking us to separately advise you when we were
4 ready to go forward, we're to a point where we will be
5 ready to go forward and would ask that it immediately
6 be certified.

7 MR. STOVALL: What we're doing in this
8 hearing today will be done by administrative process in
9 the future, is, I guess, what we're saying.

10 EXAMINER STOGNER: Does anybody else have
11 anything further for this witness?

12 MR. STOVALL: I bet we could confuse it more
13 if we tried.

14 EXAMINER STOGNER: I don't think we want to
15 like to do that. You may be excused.

16 Anything further in Case Number 10,564?

17 MR. CARR: Nothing further.

18 EXAMINER STOGNER: This case will be taken
19 under advisement.

20 (Thereupon, these proceedings were concluded
21 at 10:35 a.m.)

22 * * *

23

24

25

1 CERTIFICATE OF REPORTER

2

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

5

6 I, Steven T. Brenner, Certified Court
 7 Reporter and Notary Public, HEREBY CERTIFY that the
 8 foregoing transcript of proceedings before the Oil
 9 Conservation Division was reported by me; that I
 10 transcribed my notes; and that the foregoing is a true
 11 and accurate record of the proceedings.

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

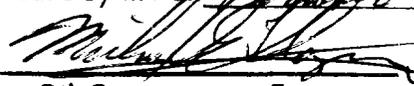
16 WITNESS MY HAND AND SEAL October 8th, 1992.

17 
 18 STEVEN T. BRENNER
 19 CCR No. 7

20 My commission expires: October 14, 1994

21

22 I do hereby certify that the foregoing is
 23 a complete record of the proceedings in
 the Examiner hearing of Case No. 105646
 24 heard by me on 10/14/92 1992.

25 
 Examiner
 Oil Conservation Division