

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO

30 April 1986

EXAMINER HEARING

IN THE MATTER OF:

Application of Yates Petroleum Cor- CASE
poration for salt water disposal, 8882
tion, Lea County, New Mexico.

BEFORE; Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation
Division:

Jeff Taylor
Legal Counsel to the Division
Oil Conservation Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant:

William F. Carr
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I N D E X

RAY STALL

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E X H I B I T S

Yates Exhibit One, C-108 5

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MR. STOGNER: Call next Case
Number 8882.

MR. TAYLOR: The application of
Yates Petroleum Corporation for salt water disposal, Lea
County, New Mexico.

MR. STOGNER: Call for appear-
ances.

MR. CARR: May it please the
Examiner, my name is William F. Carr with the law firm Camp-
bell and Black, P. A., of Santa Fe, appearing on behalf of
Yates Petroleum Corporation.

I have one witness.

MR. STOGNER: Are there any
other appearances in this matter?

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

(Witness sworn.)

RAY STALL,
being called as a witness and being duly sworn upon his
oath, testified as follows, to-wit:

1 DIRECT EXAMINATION

2 BY MR. CARR:

3 Q Will you state your full name and place
4 of residence?

5 A Albert Raymond Stall. Artesia.

6 Q Mr. Stall, by whom are you employed and
7 in what capacity?

8 A Yates Petroleum Corporation as an engin-
9 eer.

10 Q Have you previously testified before this
11 Division?

12 A Yes, I have.

13 Q And were your credentials as a petroleum
14 engineer accepted and made a matter of record at that time?

15 A They were.

16 Q Are you familiar with the application
17 filed in this case on behalf of Yates Petroleum Corporation?

18 A Yes, I am.

19 Q Are you familiar with the subject area
20 and the proposed salt water disposal well?

21 A Yes.

22 MR. CARR: Are the witness'
23 qualifications acceptable?

24 MR. STOGNER: Mr. Stall is so
25 qualified.

1 Q Mr. Stall, would you briefly state what
2 Yates Petroleum Corporation seeks with this case?

3 A We're seeking the Division's approval to
4 allow us to dispose of produced water into the Lower Abo and
5 Upper Wolfcamp formations in our Freeman ACF No. 1 Well,
6 located in Section 22, 16 South, 37 East, Lea County.

7 Q Mr. Stall, would you refer to what has
8 been marked for identification as Yates Petroleum Corpora-
9 tion Exhibit Number One and identify this, please, for Mr.
10 Stogner?

11 A Yes, sir. This is the State C-108, salt
12 water disposal application and all of the required supple-
13 ments.

14 Q Is this exhibit identical to the applica-
15 tion that was previously filed with the Oil Conservation Di-
16 vision?

17 A There are a few additions to this exhi-
18 bit. These include a log of the well, which is page 47, and
19 xeroxed copies of the receipt of notice to all the mineral
20 interest owners, operators, and surface landowners that we
21 did not have at the time it was submitted to the Commission.

22 Q Other than those two changes, is this the
23 same application that was previously filed?

24 A Yes, it is, sir.

25 Q What is the current status of the Freeman

1 ACF Well No. 1?

2 A The Freeman ACF No. 1 is a producing Penn
3 well, a very marginally producing Penn Well. I don't have
4 completely up to date production figures. We were producing
5 the well at the time we prepared this C-108 at about 6 bar-
6 rels every 10 days. Our pumper has since told me that it's
7 not even doing that well.

8 Q When was the well originally drilled?

9 A Just a moment, please. The well was
10 spudded in April, on April 2nd, 1985, and completed June
11 11th, 1985.

12 Q Would you now refer to the plat which is
13 the first page in Exhibit Number One and review the informa-
14 tion contained thereon for Mr. Stogner?

15 A Yes, sir. The plat is centered around
16 the Freeman Well, located in the southwest southwest of Sec-
17 tion 22. It shows lease ownership in the area. It has a
18 half mile -- a circle of half mile radius showing the area
19 of review and it also has a circle of two mile radius around
20 the well.

21 Q Would you now refer in this exhibit to
22 the tabular data on all wells within the area of review that
23 penetrate the injection zone, and perhaps you could provide
24 the examiner a page number of that particular portion of the
25 exhibit?

1 A Yes, that's page 13 and this page
2 summarizes the seven wells with the area of review. It
3 gives spud and completion dates, casing setting depths and
4 sizes, cementing program, and then completion attempts.

5 Q Are there any plugged and abandoned wells
6 within the area of review?

7 A Yes, there are two plugged and abandoned
8 wells within the area.

9 Q Does this exhibit contain schematic
10 drawings showing the plugging detail on those wells?

11 A Yes, sir, these plugging details --
12 schematics are shown on pages 17 and 18.

13 The first is the C & K Petroleum Monteith
14 No. 1 Well, which is located in Section 21. It is just west
15 of our Freeman well. This schematic shows that it was
16 spudded in December of '76 and P&A'd in January of '77.

17 The schematic shows again casing and
18 cementing programs. I might point out that the surface and
19 intermediate casing are both circulated with cement, the
20 intermediate being set at 8-5/8ths -- being 8-5/8ths set at
21 4327 feet.

22 The well reached a total depth of 11,680
23 feet and the subsequent plugging program is shown on this
24 schematic.

25 The next well is just northwest of our

1 Freeman well, northeast, pardon me. It's the Magnolia Pet-
2 rolum Company "BE" Shipp No. 1 Well. It was spudded in,
3 looks like May of '53 and P&A'd in October of '53.

4 Again, this schematic illustrates the
5 casing program, sizes, setting depths, and also points out
6 that both strings were circulated with cement with the 9-
7 5/8ths intermediate set at 4820 feet.

8 The well reached a total depth of 12,540
9 feet and again the subsequent plugging program is shown on
10 this schematic.

11 Q Now these are the only two plugged and
12 abandoned wells within the area of review that penetrated
13 the subject interval.

14 A That's correct.

15 Q Does this exhibit contain schematic draw-
16 ings for the propose injection well showing both its present
17 completion and also Yates proposal for converting it to in-
18 jection?

19 A Yes, these are shown on pages 15 and 16.

20 Q Would you review those for Mr. Stogner,
21 please?

22 A Okay. The exhibit -- or the schematic on
23 page 15 of the exhibit is entitled the present well condi-
24 tion. It reflects that the well was spudded, as I mentioned
25 earlier, in April of '85 and completed in June of '85. It

1 shows the casing program and cementing. The well has 13-
2 3/8ths casing set at 455 feet, cemented with 475 sacks and
3 it did circulate to surface.

4 Intermediate is 8-5/8ths set at 4,294
5 feet, cemented with 1600 sacks plus, well, a total of 1850
6 sacks of cement. It also circulated to surface.

7 The well reached a TD of 11,850 feet. 5-
8 1/2 inch casing was run. It was cemented with 1100 sacks of
9 cement and the bond log shows the cement top at 6,835 feet.

10 This sketch also shows some of the com-
11 pletion work that we did on the well.

12 Q Will you now review Yates' proposed com-
13 pletion?

14 A Okay. To amplify on the present well
15 condition you might say that the proposed disposal well dia-
16 gram shows the same information with the addition of -- the
17 schematic shows a retrievable bridge plug or cast iron
18 bridge plug at 19,925 over the perforations that are
19 presently producing. These are at 10,971, pardon me, 10,973
20 to 11,071-1/2.

21 We probably would prefer to put a cast
22 iron bridge plug there and make the permanent plugback.

23 Then this schematic shows the interval
24 that we propose to perforate and probably treat for dis-
25 posal, this being the interval 10,050 to 10,350 feet.

1 We would then plan to run for injection
2 for disposal a nickel-plated packer and plastic-coated 2-
3 7/8ths tubing string.

4 Q Will the annular space be filled with an
5 inert fluid?

6 A Yes, it will.

7 Q And will the well be equipped with a
8 gauge so that the annular space can be tested?

9 A Yes.

10 Q Does Yates agree to perform all testing
11 of the fluid in this space as required by the Federal
12 Underground Injection Control Program?

13 A Yes.

14 Q Now into exactly what formation are you
15 proposing to dispose water?

16 A This is the Lower Abo and Upper Wolfcamp.

17 Q And what is the general thickness of the
18 interval?

19 A The general thickness is about 300 feet.

20 Q What is the source of the water you
21 propose to inject in this well?

22 A The source of the proposed disposal water
23 is from other Yates wells in the area and these are
24 summarized on pages 7 and 8 of the exhibit. They include
25 three Shipp "ZI" wells, which are in the section immediately

1 south of the section the Freeman well is located in.

2 The Hummingbird Well, ADM State No. 1,
3 which is about three miles north of the Freeman, and the
4 Kochia AAM State No. 1, which is a little farther north,
5 maybe five or six miles.

6 Q What is Yates presently doing with this
7 water?

8 A We're having it trucked out by a commer-
9 cial disposal company.

10 Q What volumes do you anticipate injecting
11 in this well?

12 A We anticipate probably starting with 2000
13 barrels a day up to as much as 5000.

14 Q So 5000 would be your maximum proposed
15 daily injection rate.

16 A Yes.

17 Q Is this going to be an open or a closed
18 system?

19 A It would be a closed system.

20 Q Do you propose to inject by gravity or
21 will you be applying pressure?

22 A We hope to inject by gravity but if -- if
23 need be, we would inject under pressure.

24 Q Would a pressure limitation of .2 pound
25 per foot of depth to the top of the injection interval be

1 satisfactory for Yates' purposes?

2 A Yes, that's what we would plan on for the
3 present time. If that did not prove to be viable, then we'd
4 come back before the Commission.

5 Q Would you now refer to the water analyses
6 of the injection fluids, which are contained in Exhibit Num-
7 ber One?

8 A These are -- a summary is done on page
9 eight of these waters. It's this Item 5, about a third of
10 the way down the page.

11 The chlorides from the water produced by
12 these -- these wells ranges from 6000 to 7400 parts per mil-
13 lion. Individual analyses of waters from these wells can be
14 found on pages 19 through 22.

15 Q Do you anticipate any compatibility prob-
16 lems resulting from the injection of waters as you propose
17 in this application?

18 A No, we do not. The zone has not yet been
19 completed but we expect the waters within the zone to be
20 similar to those of the wells we're obtaining the water
21 from. We will, of course, obtain a sample and have it ana-
22 lyzed before doing any injecting.

23 Q Are there any fresh water wells within
24 one mile of the proposed injection well?

25 A Yes, sir, there are three wells within a

1 mile.

2 Q And from what interval are they produc-
3 ing?

4 A They're producing from a shallow inter-
5 val, the Ogallala, which has a base of about 275 feet from
6 the surface in this area.

7 Q Does Exhibit Number One contain a water
8 analysis of water from these fresh water wells?

9 A Yes. There is an analysis for each of
10 these three wells. They can be seen in the exhibit on pages
11 25, 26, and 27.

12 Q Now I believe you testified that you have
13 attached to Exhibit Number One a log of the injection well.

14 A Yes, sir, that's correct. It can be
15 found on page 47. It is a compensated neutron litho-density
16 log of the well, which shows the well's porosity within the
17 zones that we're interested in.

18 Q And, Mr. Stall, was notice of this appli-
19 cation given to all offsetting property owners and to the
20 surface owner?

21 A Yes, that's correct. We sent registered
22 notice, or a copy of the application by registered mail to
23 each of the operators or mineral interest owners within the
24 area of review, as well as the surface landowner.

25 Additionally we sent copies to the NMOCD

1 office in -- district office in Hobbs, as well as the office
2 in Santa Fe.

3 Q Have you received return receipts back
4 from those interest owners?

5 A Yes, we have, and they can be found -- if
6 I can find the page numbers here --

7 Q 41.

8 A -- 41 through 46 here, showing acknow-
9 ledgment of receipt, except for two parties out of 18 within
10 the area, and our land department informs me that one of
11 these individuals owns .33 acres in Section 27 and the other
12 party owns .25 acres, also in Section 27.

13 Q What are the names of these individuals?

14 A The first one I mentioned is Mrs. Mary K.
15 Risso (sic) and the address or location of this lady is Ok-
16 lahoma City.

17 The second party is Mr. James R. Woods of
18 Socorro, New Mexico.

19 Q When a receipt is received in each of
20 these letters, will you make those available to the Oil Con-
21 servation Division?

22 A Yes, we'd be glad to.

23 Q Are you aware of similar applications
24 which have been granted for disposal in this same general
25 area or pool?

1 A Yes, sir, there are several. I might re-
2 fer to the two closest.

3 The first of these is the Getty Oil Com-
4 pany well located in -- currently operated by Texaco, lo-
5 cated in Unit P of 32 of 16, 37. I believe this is shown on
6 the plat.

7 It was approved in November of '82 by the
8 Commission as Order R-7138, and the disposal interval is in
9 the Abo formation from 8,450 to 9300 feet from the surface.

10 The second well is located in Unit F of
11 Section 31, 16, 37, which I believe is also on the plat.

12 This well is a commercial disposal well
13 operated by Rice Engineering Company. I found two orders
14 approving disposal in this well.

15 The first order is SWD 44, approved Feb-
16 ruary 17, 1964, authorizing disposal into the Seven Rivers
17 formation within the interval 3640 to 3890.

18 The second order number is 44-A, approved
19 June 3rd of 1964, authorizing disposal into the Wolfcamp in-
20 terval form 10,210 to 10,260, and this is at least a portion
21 of the interval that we propose to dispose into.

22 Q Mr. Stall, have you examined the avail-
23 able geologic and engineering data on this area?

24 A Yes, I have.

25 Q And as a result of this examination have

1 you found any evidence of open faults or hydrologic connec-
2 tions between the disposal zone and any underground source
3 of drinking water?

4 A No, sir.

5 Q In your opinion will approval of this ap-
6 plication be in the best interest of conservation, the pre-
7 vention of waste, and the protection of correlative rights?

8 A I believe it will.

9 Q Was Exhibit Number One prepared by you or
10 compiled under your direction and supervision?

11 A Yes.

12 MR. CARR: At this time we would
13 offer into evidence Yates Petroleum Corporation Exhibit Num-
14 ber One.

15 MR. STOGNER: Exhibit Number
16 One will be admitted into evidence.

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

19

20 CROSS EXAMINATION

21 BY MR. STOGNER:

22 Q Mr. Stall, I'd like to begin first by
23 looking at your water samples here and water analyses situa-
24 tion. I believe on page 19 of Exhibit Number One --

25 A Okay.

1 Q -- on the top of the page. Now this is
2 water from the Cisco Canyon Well, a well that you propose to
3 get water to inject -- or produced water which will be
4 injected into the subject well today?

5 A No, Mr. Examiner. I included this analy-
6 sis. It is produced water from the Freeman Well that we're
7 proposing to convert to a disposal well. It's a marginally
8 producing interval right now and I included it to show gen-
9 erally about what the water looks like.

10 Q Okay, now this is Cisco Canyon water, is
11 that right?

12 A That's correct.

13 Q Do you have any water samples from the
14 Upper Wolfcamp or Lower Abo from this particular well?

15 A No, we haven't completed it. We would
16 obtain a sample and have it analyzed prior to commencing any
17 disposal.

18 Q Is there any water sample from either of
19 these zones in the immediate area?

20 A I can't think of any production in the
21 nearby area from these zones.

22 Q So you have no analyses to compare with
23 the water that you're injecting -- going to be injecting.

24 A Not at the present time but we expect it
25 will be similar.

1 Q Do you know when an analysis might be ob-
2 tained to have analyzed?

3 A Yes, as soon as -- when we receive ap-
4 proval of the order, then we would plan to commence recom-
5 pletion operations when this zone is perforated, and probab-
6 ly acidize, and we'll -- we'll obtain a sample at that time.

7 Q Let's go to page 14, in particular the
8 Amerind Oil Carter Well No. 1. In there you show 5-1/2 inch
9 casing set at a depth of 11,592 feet and cemented with 3
10 sacks -- 300 sacks, with the top of the cement at 10,200
11 feet, and this is detected by temperature survey.

12 Is this top of the cement, is this within
13 the injection zone that you propose to be disposing water
14 into?

15 A Yes. I might mention that our preferred
16 -- and referring to a copy of the log on page 47, our prim-
17 ary zone of interest will be in the Wolfcamp. Porosity in
18 this well, the Freeman, is encountered at about 10,250.
19 That's what we'll focus on initially but we wanted to in-
20 clude this porosity up as high as 10,050.

21 Q Do you foresee some problems with open
22 casing in this particular well being exposed to this injec-
23 tion water?

24 A No, I don't think so. I --

25 Q Why?

1 A -- think we'll probably be successful in
2 this lower portion of the well. I've examined all the logs
3 of the wells in this area and generally speaking the poros-
4 ity diminishes in the direction of this Carter Well. It's
5 better to the northeast and southeast, in the direction of
6 the -- I think it's the Magnolia Well and our Shipp No. 1.

7 Q I'm sorry, do you have a log of that par-
8 ticular well showing me --

9 A No, I don't.

10 Q -- that?

11 A I don't have those --

12 Q You don't.

13 A -- contained in the exhibit. No.

14 Q Okay, let's now look at Exhibit Number --

15 A I might mention in regard to the Amerind
16 Well, we have talked to the people at Amerind and they're
17 aware of our plans and have no objection, that I'm aware of.
18 In fact they're hopeful that we'll make a well and be able
19 to amend this later on and possibly take some of their
20 water. Disposal in this area is a big problem.

21 Q I guess a copy of Amerind's letter is in
22 here?

23 A No, sir, but I have it.

24 Q What was actually sent to Amerind and
25 all the offset operators?

- 1 A A copy of this application.
- 2 Q Of all --
- 3 A Yes.
- 4 Q -- fifty-something pages of it?
- 5 A Yes, everything except the, as I men-
- 6 tioned earlier, except the copy of the log, which I'm sure
- 7 they have, and that I added later, and the notices of a re-
- 8 ceipt of notice, which we did not have at the time we sent
- 9 it out, obviously.
- 10 Q Okay. Could you elaborate for me a lit-
- 11 tle bit more about the Abo formation in this area?
- 12 A We can refer to page 7, I think it is,
- 13 and I can give you our geologist's description that has been
- 14 included under Article VIII there, Geological Data.
- 15 Q Okay.
- 16 A He has described the Lower Abo interval
- 17 from 10,050 to 10,131 as you see there.
- 18 Q How about the Upper Abo?
- 19 A No, it's not described here.
- 20 Q Okay. Do you know if there's any kind of
- 21 an impermeable layer that separates the Upper Abo from the
- 22 Lower Abo?
- 23 A No, not offhand.
- 24 Q Is there any Abo production in this area?
- 25 A No.

1 Q Let's refer to page number 17, which is
2 the schematic of the C&K Petroleum Well No. 1, and I show
3 there from -- it would essentially be open in the injection
4 interval from 8,525 to 10,940 feet, is that correct?

5 A Yes, sir, that's correct.

6 Q Or 10,840 feet.

7 A 10,840 would be the top of that plug
8 across the Penn top.

9 Q Okay, do you have any information for me
10 on what -- if there would be any danger or any harm in any
11 of this water that would happen to --

12 A No, I --

13 Q -- seek it's way to some of these other
14 portions of the Abo formation?

15 A No, I'm not sure just exactly what to
16 tell you. I've looked at the Abo interval in our well. We
17 naturally picked the zones that we would thought would be
18 most suitable containing porosity for -- for disposal. I
19 don't recall seeing anything up the hole within the Abo in-
20 terval that would be attractive either for production or
21 disposal. I don't think we'll hurt anything.

22 Q What would be the hardship to Yates if
23 this application wasn't approved?

24 A We'd just have to continue trucking our
25 water commercially at a price of approximately \$1.00 a bar-

1 rel. It would be an economic hardship.

2 Q What would be the effects to Yates
3 Petroleum if Yates had to re-enter that Amerind Oil Carter
4 No. 1 and see that that zone, if it is not satisfactorily
5 cemented across that boundary could be cemented across that
6 injection zoned and also re-entering the old C&K Well to
7 make sure that that Abo zone was plugged properly?

8 A I think going into the Amerind well would
9 probably be an impossible situation because it is operated
10 by another operator and it is a fairly good producing well,
11 I think. I can't cite you numbers but it's similar to our
12 Shipp Wells and they're very good wells.

13 I doubt very much if Amerind would want
14 any part of entering that well and doing that.

15 As far as re-entering the plugged well,
16 we could conceivably do that if management thinks that the
17 expense is justified.

18 I might add, though, that my own thought
19 is that they probably would not want to, and more than like-
20 ly it would kill the project.

21 MR. STOGNER: I have no further
22 questions of Mr. Stall.

23 Mr. Carr, do you have any ques-
24 tions?

25 MR. CARR: No further ques-

1 tions, Mr. Stogner.

2 MR. STOGNER: Does anybody else
3 have any questions of Mr. Stall?

4 If not, he may be excused.

5 Mr. Carr, do you have anything
6 further in this case?

7 MR. CARR: Nothing further.

8 MR. STOGNER: Does anybody else
9 have anything further in Case Number 8882?

10 If not, the case will be taken
11 under advisement.

12

13 (Hearing concluded.)

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C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY
CERTIFY the foregoing Transcript of Hearing before the Oil
Conservation Division (Commission) was reported by me; that
the said transcript is a full, true, and correct record of
the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No. 8882,
heard by me on 30 April 1986.

Michael S. Stogner, Examiner
Oil Conservation Division