

NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARINGSANTA FE, NEW MEXICOHearing Date APRIL 10, 1985 Time: 8:00 A.M.

NAME	REPRESENTING	LOCATION
H. A. Keadish	El Paso Natural Gas Co.	El Paso
Karen Quisenberry	Kellaker + Kellaker	Santa Fe
Scott Hall	Campbell & Clark	SF
Bob Fisher	Byrum	Santa Fe
T. Bruce Pettitt	Reading & Bates Petr. Co.	Denver
R. B. Shindler	Reading & Bates Petroleum Co.	Denver
Jim Rouse	Arkle Law Firm	Santa Fe
Kary Hammett	Sunburst Exploration, Inc.	Roswell
James Manning	Jennings & Christy	Roswell
Bill HORNE	J. M. Huber Corp	Midland
Bob Watson	J. M. Huber Corp	Midland
BOB REIF	HEYCO	Roswell
Chad Dickerson	Dickerson, Fisher + Vandiver	Alameda
Ernie Busch	NMOCB	Aztec
Bill Minterlin	MESA PETROLEUM CO.	AMARILLO, TEXAS
Ray Graham	SLO	SF

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NAME	REPRESENTING	LOCATION
Bob Thompson	HEYCO	Midland TX
Ferrill DAVIS	HARBEN. DAVIS	Midland, TX
JOHN F. NANCE	EL PASO NATURAL GAS CO.	EL PASO, TX

1 STATE OF NEW MEXICO
2 ENERGY AND MINERALS DEPARTMENT
3 OIL CONSERVATION DIVISION
4 STATE LAND OFFICE BUILDING
5 SANTA FE, NEW MEXICO

6
7 10 April 1985

8 COMMISSION HEARING

9 IN THE MATTER OF:

10 Application of Reading and Bates
11 Petroleum Co. for salt water dis-
12 posal, San Juan County, New Mexico.

CASE
8530

13 BEFORE: Gilbert P. Quintana, Examiner

14 TRANSCRIPT OF HEARING

15
16 A P P E A R A N C E S

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19 For the Oil Conservation
20 Division:

Jeff Taylor
Attorney at Law
Legal Counsel to the Division
State Land Office Bldg.
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21
22
23 For the Applicant:

Scott Hall
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CAMPPBELL & BLACK P.A.
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I N D E X

BRUCE PETITT

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E X H I B I T S

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3 MR. QUINTANA: We'll call next
4 Case 8530.

5 MR. TAYLOR: The application of
6 Reading and Bates Petroleum Company for salt water disposal,
7 San Juan County, New Mexico.

8 MR. HALL: Mr. Examiner, Scott
9 Hall from the law firm of Campbell and Black in Santa Fe.

10 I have one witness who needs to
11 be sworn this morning.

12 MR. QUINTANA: Are there other
13 appearances in Case 8530?

14 If not, sir, would you please
15 stand and remain standing to be sworn in at this time?

16 (Witness sworn.)

17 BRUCE PETITT,
18 being called as a witness and being duly sworn upon his
19 oath, testified as follows, to-wit:

20 DIRECT EXAMINATION

21 BY MR. HALL:

22 Q Would you state your name?

23 A My name is Bruce Petitt.

24 Q And where do you reside?

25 A I reside in Jefferson County, Colorado.

1

2

Q By whom are you employed and in what capacity?

3

4

A I'm employed by Reading and Bates Petroleum Company as a Division Engineer in the Northwest Division.

5

6

7

Q Does your area of supervision include the San Juan Basin of New Mexico?

8

9

A Yes.

10

Q Mr. Petitt, have you previously testified before the examiner?

11

A No.

12

Q Would you please give a brief background of your education and work experience?

13

14

A I received a Bachelor of Science in petroleum engineering from the University of Oklahoma in December, 1977.

15

16

I was employed by Cities Service Company in Houston, Texas, from January of 1978 until August of 1979.

17

18

I've been employed by Reading and Bates Petroleum Company since August of 1979 in Houston, Denver, and Santa Barbara, California.

19

20

21

Q Mr. Petitt, are you familiar with the application and the subject well for this case?

22

23

A Yes.

24

MR. HALL: Mr. Examiner, we would offer Mr. Petitt as a qualified witness.

25

1
2 MR. QUINTANA: Mr. Petitt is
3 considered as qualified.

4 You may proceed.

5 Q Mr. Petitt, please briefly state what
6 Reading and Bates is seeking with this application.

7 A We seek to be able to dispose of water
8 produced by the Navajo Tocito No. 1, which we operate, into
9 the Navajo Tocito No. 4 Well.

10 Q All right. I'm going to ask you to refer
11 to what's been marked as the applicant's Exhibit One and ex-
12 plain to the Examiner what exhibit is intended to show.

13 A Exhibit One is a Form C-108 and all at-
14 tachments, showing the required data.

15 Q Does Exhibit One show the injection zone?

16 A Yes.

17 Q And about where does that show?

18 A On page five, the injection interval is
19 shown from 6382 to 6386 feet.

20 Q All right, and when was the subject well
21 first drilled?

22 A The well was spudded November 30th, 1968,
23 and completed December 31st, 1968.

24 Q And what is the present status of that
25 well?

A The well is shut in.

26 Q All right. I'd ask you to refer to page
27 six of Exhibit One and ask you to explain what that's in-

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ended to reflect.

A That well shows -- that exhibit shows the wells in the Tocito Dome area.

The smaller circle is a half mile radius area of review showing the subject well, the Navajo Tocity No. 4, two wells within that area of review, the Airco No. 3 and the Mobil No. 5.

The larger circle is a two mile radius.

Q All right, I'd ask you now to turn to pages 7 and 8 of Exhibit One and ask you what those figures are intended to reflect.

A Page 7 shows -- is a schematic of the Airco Navajo Tocito No. 3, showing its condition after it was plugged and abandoned.

Page 8 is a schematic of the Mobil Navajo No. 5, showing its condition after plugging.

Q All right, I'm going to ask you to refer to what's been marked as Exhibit Three, numbered out of order, and what is Exhibit Three intended to reflect?

A Exhibit Three is tabular data on the two wells within the area of review, the Mobil Navajo No. 5, showing its location, construction, data of drilling, location, depth, and referring to the pages seven and eight of the previous exhibit.

And the Airco Navajo No. 3, the same information.

Q All right. Let's turn back to Exhibit

1
2 One, now, page five of that exhibit, which shows schematic
3 drawing of the No. 1 Well.

4 Would you care to elaborate on that
5 briefly?

6 A It's a schematic of a well. We propose
7 to use it as an injection well. We would have plastic-lined
8 tubing set with a packer at approximately 6332 feet. The
9 well is plugged back to 6396 feet. The current perforations
10 are 6,382 to 386 and we propose to use those for injection.

11 Q Is it possible that you would at some
12 point care to inject as far as 6392?

13 A Yes.

14 Q All right. Will the annulus be filled
15 with fluid?

16 A Yes, it will be filled with fluid treated
17 with corrosion inhibitor bacteriacide.(sic)

18 Q All right, will Reading and Bates agree
19 to pressure testing of the fluid?

20 A Yes.

21 Q Mr. Petitt, what is the source of the
22 water you propose to inject into the well?

23 A The water comes from the Navajo -- from
24 the Pennsylvanian E formation. That's the North Tocito Dome
25 Pennsylvanian Associated Pool from the Navajo Tocito No. 1
Well.

26 Q What's the location of that well?

27 A The Navajo Tocito No. 1 Well is located

1
2 1980 feet from the north line, 1980 feet from the east line
3 of Section 9, Township 26 North, Range 18 West, San Juan
4 County.

5 Q Is that well reflected on page six of Ex-
6 hibit One?

7 A Yes. That well's found directly north-
8 west of the Navajo Tocito No. 4.

9 Q All right. What are you presently doing
10 with the water from that well?

11 A That well is shut in at present. We pre-
12 viously had an arrangement to dispose of that water into
13 Amoco's Navajo No. 2 Well, located in Section 20.

14 Q All right, what are the volumes you ex-
15 pect to inject into the No. 4?

16 A We estimate the average daily volume now
17 at 1500 barrels a day.

18 Q All right. What do you propose to be the
19 maximum daily injection for that well?

20 A We estimate the maximum daily injection
21 rate to 2500 barrels per day.

22 Q Will that be an open system for the in-
23 jection well?

24 A Yes.

25 Q Will you be injecting under pressure?

A Yes.

Q What would be a satisfactory pressure
limit for injection?

1
2 A We believe 1275 psi would be satisfac-
3 tory.

4 Q At this point I'd ask you to turn to page
5 nine of Exhibit One and ask you to explain what that exhibit
6 is intended to reflect.

7 A Page nine of Exhibit One is a water ana-
8 lysis of water produced from the Navajo Tocito No. 1, show-
9 ing it has a total dissolved solids of 108,422.

10 Q All right. Mr. Petitt, if you reinject
11 the water into the producing formation, is that water com-
12 patible with the injection zone?

13 A Yes. That water is produced from the
14 same zone that it would be injected into.

15 Q All right, Mr. Petitt, are there any
16 fresh water zones in the area?

17 A Yes.

18 Q What are those?

19 A At this particular location the Gallup is
20 found at the surface. The Dakota is found at 757 feet.

21 The basinal Dakota -- excuse me, the
22 Brushy Basin is found at 1140 feet. The base of the Brushy
23 Basin is at 1455 feet. The Todilto is found at 2098 feet
24 and the Entrada is found at 2208 feet.

25 Q Are any of the water-bearing formations
you've identified below the proposed injection interval?

 A No.

 Q Are there any fresh water wells within a

1
2 mile of the proposed injection well?

3 A No.

4 Q Mr. Petitt, I'd ask you to refer to
5 what's been marked as Exhibit Two and ask you to identify
6 that and explain what that exhibit is intended to reflect.

7 A That exhibit is the induction electric
8 log from the Navajo Tocito No. 4 from approximately 6400
9 feet up to approximately 17 -- 1664 feet. It shows the
10 spontaneous potential and resistivity, conductivity of for-
11 mations in this well, everything below the surface casing
12 down to and including the Pennsylvanian E formation.

13 Q All right. Now please refer to page 10
14 through 13 in Exhibit One, identify that and explain what
15 that's intended to reflect.

16 A Those pages reflect that we have sent
17 copies of this application to the offset operators, Mobil
18 Oil Corporation, and Amoco Production Company and to the
19 owner of the surface, the Navajo Nation.

20 Page 11 is a waiver we received from Amo-
21 co in this regard.

22 Page 12 are copies of the return receipts
23 on the certified mail of these applications sent to Mobil
24 and the Navajo Nation.

25 Page 13 is an affidavit of publication
26 showing the advertisement we published in the newspaper.

27 Q All right, Mr. Petitt, are you aware of
28 any similar applications which have been granted for injec-

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tion wells in the same general area or pool as this well?

A No.

Q In fact, is Reading and Bates the only operator in that pool?

A Yes, we're the only operator, and the Navajo Tocito No. 1 and the Navajo Tocito No. 4 are the only two wells in that pool.

Q Mr. Petitt, have you examined available geologic and engineering data and have you found as a result of that examination any evidence for open faults or any other hydrologic connections between the disposal zone in any underground source of drinking water?

A I found no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

Q Mr. Petitt, will the granting of this application prevent waste, protect correlative rights, and be in the best interest of conservation?

A Yes.

Q Were Exhibits One through Three prepared by you or under your direction?

A Yes.

MR. HALL: At this point, Mr. Examiner, we'd move the admission of Exhibits One through Three.

MR. QUINTANA: Exhibits One through Three will be entered as evidence.

1
2 MR. HALL: And that concludes
3 our direct.

4 CROSS EXAMINATION

5 BY MR. QUINTANA:

6 Q Mr. Pettitt, I have a question for you.

7 Turn to Exhibit One, page eight, is that
8 a plugging and abandon schematic for Mobil Navajo No. 5?

9 A Yes.

10 Q There's a difference between the plugging
11 of the well on page eight and the well on page seven, which
12 is the Airco Navajo Tocito No. 3 and there is a large dif-
13 ference in the plugging technique and do you believe in your
14 professional opinion that this is adequate plugging for the
15 Mobil Navajo No. 5?

16 A Yes, I do. The difference is that on the
17 Airco Navajo Tocito No. 3 they did not run pipe. They mere-
18 ly drill stem tested that well, plugged and abandoned it
19 without running pipe.

20 The Mobil Navajo No. 5 has 5-1/2 inch
21 casing run in it. They perforated it and fraced the well.
22 The test results aren't available but they plugged and aban-
23 doned the well like that. So it's a difference between pro-
24 duced -- or plugging a drilled dry hole and a well that's
25 been cased and tested.

And I believe that it's adequate plug-
ging.

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Q Did you say they -- according to Exhibit Number Three, Mobil (not understandable) from 6408 to approximately 6460. I notice that there's no cement laid across those perforations that are in the well. Is that a standard practice for plugging?

A I don't think so.

Q There's no cement placed across those perforations. Is it possible that fluids from the reservoir might get into the wellbore of the Navajo Mobil Well No. 5 and eventually cause corrosion of some kind?

A I'd say that possibility does exist.

Q Do you know who plugged and abandoned that well, the last known operator?

A The Mobil Navajo No. 5? I'd assume it would be Mobil.

Mr. Examiner, I'd say it's highly unlikely that there's not cement across those perforations and I think we can look into that further and find that out.

Q If the possibility -- I would appreciate if you would look into this further. The possibility may be -- and I'm going to look into this a little bit further. This well may have to have some cement across the perforations. Would it be not -- would your company agree to plugging this in a more adequate manner before injecting into that well?

A No, we couldn't agree to that.

Q Couldn't agree with that.

1
2 A We're not the operator of that well. We
3 don't have the lease on it.

4 Q Can you provide me further information on
5 that well?

6 A Yes.

7 CROSS EXAMINATION

8 BY MR. TAYLOR:

9 Q Mr. Pettitt, do you know where the closest
10 fresh water well is to this?

11 A No, I don't.

12 Q Are there any within two miles?

13 A Not to my knowledge.

14 MR. QUINTANA: Any further
15 questions of Mr. Pettitt?

16 If not, Mr. Pettitt, you may be
17 excused.

18 If there is nothing further in
19 Case 8530, Case 8530 will be taken under advisement.

20 (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 that the foregoing Transcript of Hearing before the Oil Conservation Division 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. 8530 heard by me on APRIL 10 1985.

Gilbert P. Quintana, Examiner
Oil Conservation Division

1 STATE OF NEW MEXICO
2 ENERGY AND MINERALS DEPARTMENT
3 OIL CONSERVATION DIVISION
4 STATE LAND OFFICE BUILDING
5 SANTA FE, NEW MEXICO

6 27 March 1985

7 EXAMINER HEARING

8 IN THE MATTER OF:

9 Application of Reading and Bates Petro- CASE
10 leum Company for salt water disposal, 8530
11 San Juan County, New Mexico.

12 BEFORE: Michael E. Stogner, Examiner

13 TRANSCRIPT OF HEARING

14 A P P E A R A N C E S

15
16 For the Oil Conservation
17 Division:

18 Jeff Taylor
19 Attorney at Law
20 Legal Counsel to the Division
21 State Land Office Bldg.
22 Santa Fe, New Mexico 87501
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MR. STOGNER: Call next Case
No. 8530.

MR. TAYLOR: The application of
Reading & Bates Petroleum Company for salt water disposal,
San Juan County, New Mexico.

I believe the applicant has re-
quested that this case be continued.

MR. STOGNER: Case No. 8530
will be continued to an Examiner's Hearing scheduled for
April 10, 1985.

(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 that the foregoing Transcript of Hearing before the Oil Conservation Division 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 true and correct transcript of the hearing in Case No. 8530 heard by me on 27 March 1985.
Michael E. Hogan, Examiner
Oil Conservation Division