

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION  
STATE LAND OFFICE BLDG.  
SANTA FE, NEW MEXICO  
26 May 1982

EXAMINER HEARING

IN THE MATTER OF:

APPLICATION of Yates Drilling Com-  
pany for statutory unitization,  
Eddy County, New Mexico.

CASE  
7596

and

Application of Yates Drilling Com-  
pany for a waterflood project, Eddy  
County, New Mexico.

CASE  
7597

BEFORE: Daniel S. Nutter

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation  
Division:

W. Perry Pearce, Esq.  
Legal Counsel to the Division  
State Land Office Bldg.  
Santa Fe, New Mexico 87501

For the Applicant:

Chad Dickerson, Esq.  
LOSEE, CARSON, & DICKERSON P.A.  
Artesia, New Mexico

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2 MR. NUTTER: Call next Case Number 7596.

3 MR. PEARCE: That is the application of  
4 Yates Drilling Company for statutory unitization, Eddy County,  
5 New Mexico.

6 MR. DICKERSON: Mr. Examiner, I'm Chad  
7 Dickerson of Artesia, New Mexico, on behalf of the applicant.  
8 We have two witnesses.

9  
10 (Witnesses sworn.)

11  
12 MR. DICKERSON: Mr. Examiner, I wonder if  
13 we could consolidate this case with 7597 and put on the testi-  
14 mony at the same time?

15 MR. NUTTER: We'll also at this time call  
16 Case Number 7597.

17 MR. PEARCE: That is the application of  
18 Yates Drilling Company for a waterflood project, Eddy County,  
19 New Mexico.

20 MR. DICKERSON: Chad Dickerson, Mr. Examiner,  
21 appearing on behalf of the applicant. We have the same two  
22 witnesses as in the preceding case.

23 MR. NUTTER: Cases Numbers 7596 and 7597  
24 will be consolidated for purpose of hearing.  
25

KATHY H. COLBERT

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

DIRECT EXAMINATION

BY MR. DICKERSON:

Q Will state your name, your occupation, and  
by whom you are employed, please?

A. My name is Kathy H. Colbert. I'm employed  
as a landman by Yates Petroleum Corporation in Artesia, New  
Mexico.

Q And, Ms. Colbert, you're appearing on be-  
half of Yates Drilling Company in this proceeding?

A. Yes, sir, I am.

Q What are your duties on behalf of the appli-  
cant?

A. I am a landman, I work in the Land Depart-  
ment, as I have for five years. Among my various duties I  
take part in leasing units, farm outs, and all other activities  
in the Land Department.

Q And are you familiar with the matters in-  
volved in these applications?

A. Yes, I am.

Q Will you briefly state the purposes of the applications by Yates Drilling Company in this proceeding?

A In Case Number 7596 applicant as operator seeks an order unitizing for the purposes of a secondary recovery project all mineral interests in a certain interval underlying the South Loco Hills Grayburg Unit, encompassing 1060 acres, more or less, of Federal land underlying portions of Sections 19, 20, 29, and 30, of Township 18 South, Range 29 East.

The unitized interval would be from the top of the Grayburg formation to a point 30 feet below the base of the Loco Hills sand formation, that being the interval at 2272 feet to 2429 feet as found in the Yates Alscott Federal No. 1 Well, which is located in Unit A of said Section 30.

In Case Number 7597 applicant seeks authority to institute secondary recovery project on its South Loco Hills Grayburg Unit Area by the injection of water into the Grayburg formation through eight wells located in the Sections 19, 20, 29, and 30, Township 18 South, Range 29 East.

Q Ms. Colbert, would you please refer to what is marked Exhibit Number One and please describe what it shows?

A Exhibit One is a land plat of the area surrounding the proposed unit. The unit boundaries are out-

lined in red and this reflects the surrounding leasehold ownership. More detailed information regarding these matters will be given in testimony by another witness.

Q. Now refer to what has been marked as Exhibits Two and Three and tell the Examiner what those instruments are.

A. Exhibit Number Two is the proposed unit agreement, South Loco Hills Grayburg Unit, Eddy County, New Mexico, and Exhibit Three is the unit operating agreement covering the same proposed unit.

Q. And are you familiar with both these agreements?

A. Yes, I am.

Q. Now refer to Exhibit Number Four and state what that exhibit is.

A. Exhibit Four are copies of various and pertinent correspondence extending over a 7-year period reflecting our attempts to get this unit together.

Q. So Exhibit Number Four reflects the efforts which Yates has made to obtain voluntary unitization?

A. Yes.

Q. Now, Ms. Colbert, would you please refer to Exhibit B of the unit agreement and briefly state the nature of the operator's attempts to secure voluntary uniti-

1  
2 zation and the present status of the royalty and working  
3 interest owners commitments to the unit?

4 A With the exceptions of Tracts 1, 2, 3, 7,  
5 and 7B, all the working interest owners have indicated that  
6 they would join the unit.

7 MR. NUTTER: Okay, let me mark those as  
8 you go through them again, please.

9 A Yes, sir.

10 MR. NUTTER: Tract 1.

11 A Yes, Tracts 1, 2, 3, 7, and 7B. With those  
12 exceptions the working interest owners have indicated that  
13 they will join the unit.

14 MR. NUTTER: Well, actually those tracts  
15 represent a considerable portion of the total surface acres  
16 in the unit.

17 A Yes, sir, but I'm getting to the next point  
18 that will --

19 MR. NUTTER: Yeah. Yeah.

20 A In Tract 1, which is the Kelly and Hewitt  
21 interest, 1.2281165 percent of the unit, they have not com-  
22 mitted this but Yates Drilling is continuing to negotiate  
23 them.

24 Now, in the Tracts 2, 3, 7, and 7B, the  
25 interest of Southland Royalty Company, which amounts to

15.024576 percent of the unit, is not committed, but our latest information is that Southland is selling this interest to Anadarko and Anadarko has informed us that they will commit upon their acquisition of this interest, will commit this to the unit.

MR. NUTTER: So the noncommitted interest is only a portion of these tracts, then.

MR. DICKERSON: Mr. Examiner, if you would look at Exhibit E to Exhibit Three, which is the unit operating agreement, a breakdown of the tract participation factors is given in that exhibit.

Q So, Ms. Colbert, it is your testimony that all working interest owners with the exception of the Kelly and Hewitt interest and the Southland Royalty Company interest have orally committed to join this unit.

A. That's right.

Q And Southland Royalty Company has only approximately 15 percent of the unit and the Hewitts only approximately 1.2 percent, so you have well in excess of 75 percent commitment at this time.

A. And in addition to that we believe that in excess of 75 percent of the royalty and overriding royalty interests, which are reflected on this same Exhibit B to the unit agreement, will either join or ratify. The unit is:



1  
2 composed entirely of Federal lands and the royalty to the  
3 United States is committed.

4 Q Are those commitments in writing at this  
5 time?

6 A No. Preliminary approval of the final form  
7 of this unit agreement has just recently been received from  
8 the U. S. Minerals Management and Yates Drilling sent out the  
9 unit agreement and unit operating agreement for final execu-  
10 tion on May 20th, 1982.

11 Q In view of this situation, what does the  
12 applicant propose that the Division do with regard to final  
13 approval of the unit agreement and unit operating agreement?

14 A We recommend that the Division allow us  
15 a reasonable period of time, not to exceed six months from  
16 the date on which the order approving unit operation is made,  
17 to obtain this formal written approval by persons owning the  
18 required percentage of interest within the unit area, and at  
19 such time enter a supplemental order finding that a plan for  
20 unit operations have so been approved.

21 Q And you do really feel, don't you, that  
22 virtually all working interest and a substantial majority of  
23 the royalty interest will ultimately join the unit?

24 A Yes.

25 Q And you stated there are no State or fee

lands located in the unit area.

A. That's correct.

Q. Ms. Colbert, would you refer to the provisions in the unit operating agreement, or let me just ask you a question.

Have you reviewed these instruments and compared them with the required provisions to be set forth in the Statutory Unitization Act of the State of New Mexico, and do Exhibits Two and Three contain all the provisions required by our statute to be included within those units?

A. They contain everything necessary for those provisions.

MR. DICKERSON: Mr. Examiner, the witness is prepared to cite you to these various provisions but we're happy with that if you're happy.

Q. Ms. Colbert, now look at what is marked as Exhibit Number Five and state what that is.

A. Exhibit Five are affidavits reflecting the mailings of the C-108, the application for authority to inject water for a waterflood project in Case Number 7597. These were sent by certified mail to the owners of the surface and to all leasehold operators within the one-half mile of the proposed injection well. This was done pursuant to the OCD Rule 701.

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MR. DICKERSON: Mr. Examiner, at this time we'd move admission of Exhibits One through Four.

MR. NUTTER: Exhibits One through Four will be admitted in evidence.

MR. DICKERSON: And that's all the questions I have of this witness.

CROSS EXAMINATION

BY MR. NUTTER:

Q Ms. Colbert, I see --

MR. DICKERSON: One through Five, excuse me, Mr. Examiner, Exhibits One through Five.

MR. NUTTER: Exhibits One through Five will be admitted in evidence.

Q Ms. Colbert, I notice here on Exhibit Five that you did mail -- that you state that you mailed a copy of the application and the docket to Southland Royalty. I don't see that Kelly and Hewitt listed here, however.

MR. DICKERSON: There are two affidavits, Mr. Examiner. This is the -- the surface owners, the BLM, and these other owners listed are all other operating interest owners within the boundaries within one-half mile of any injection well, pursuant to Rule 704.

A. Some of them are in the proposed unit but

others that you do not see in the unit are outside the unit boundaries but within one-half mile of the proposed injection well.

Q. Okay, so this is the affidavit in response to the requirement of Rule 704.

MR. DICKERSON: That's right.

A. Yes.

Q. And not for the statutory unitization.

MR. DICKERSON; That's correct, but, Ms. Colbert, you also, did you not, know of your own knowledge that notice has in fact been mailed to Southland Royalty Company, the Hewitt interest and the Kelly interest, --

A. Yes.

MR. DICKERSON: As required?

A. Yes, under Exhibit Number Four, Mr. Examiner, there are letters right on top of it that were sent certified, return receipt, that all parties in the unit whether working interest or override were sent all pertinent information.

MR. DICKERSON: That affidavit is contained in part of that Exhibit Number Four, Mr. Examiner.

Q. Okay, I see where you mailed one to Kelly and Hewitt.

A. Yes, sir.

MR. NUTTER: Were you through with Ms.

Colbert?

MR. DICKERSON: Yes, sir.

Q Ms. Colbert, on your Exhibit Number Three, that Exhibit E on the back of that, it shows the participation percentage and cumulative production through 1980 of these various tracts. Are these -- is the participation based only on cumulative production through 1980?

MR. DICKERSON: Mr. Examiner, our next witness is going to go into those.

MR. NUTTER: As to participation factors?

MR. DICKERSON: That's correct.

MR. NUTTER: Are there any further questions of Ms. Colbert?

MR. DICKERSON: No, sir.

MR. NUTTER: She may be excused.

MR. DICKERSON: At this time we'll call Mr. David Boneau, Mr. Examiner.

DAVID F. BONEAU

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

DIRECT EXAMINATION

BY MR. DICKERSON:

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Q Will you state your name, your occupation,  
and by whom you are employed, please?

A My name is David F. Boneau. I am employed  
by Yates Petroleum Company as Engineering Manager.

Q And, Mr. Boneau, you're appearing in this  
proceeding on behalf of Yates Drilling Company?

A Yes, sir, I am.

Q Have you not previously testified before  
the New Mexico Oil Conservation Division as an expert witness  
and your qualifications have been made a matter of record?

A Yes, that's correct.

Q Are you familiar with the matters involved  
in these applications?

A Yes, I am.

MR. DICKERSON: Mr. Examiner, we will tender  
Mr. Boneau as an expert witness.

MR. NUTTER: Mr. Boneau is qualified.

Q Mr. Boneau, in your opinion will the pro-  
posed waterflood operation substantially increase the amount  
of oil to be recovered over that which would be recovered in  
the primary methods alone?

A Yes, sir.

Q Upon what basis is your conclusion reached?

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2 A. That conclusion is reached on the basis  
3 of the matters and information shown in our engineering re-  
4 port and economic evaluation, dated December, 1981, and pre-  
5 pared for this project.

6 Q Now, refer to what is marked Exhibit Number  
7 Six. Is that the report to which you are referring?

8 A. Yes, it is.

9 Q And was that report prepared by you or  
10 under your direction?

11 A. Yes, it was.

12 Q Mr. Boneau, would you describe those factors  
13 which relate to the vertical limits of the zone sought to be  
14 unitized in this proceeding?

15 A. Yes, I'll do that. I would like to put up  
16 this map for my own benefit. Is it the same as the one you  
17 gave them?

18 Q. Yes.

19 A. Do you mind if I tape it here?

20 MR. NUTTER: Not at all.

21 A. It will help me. I don't know if it's too  
22 far away to help you all.

23 The proposed unit contains about 1060  
24 acres, located in portions of Sections 19, 20, 29, and 30, of  
25 Township 18 South, Range 29 East, Eddy County, New Mexico, and

1  
2 the interval to be unitized extends from the top of the Gray-  
3 burg formation to a depth of 30 feet below the base of the  
4 Loco Hills Sand, which is often called the Zone 4 Grayburg  
5 formation. This interval is shown on Figure 3 on page 63 of  
6 the engineering report, if you need to see it. It's shown  
7 on a type log for the Yates Alscott Federal No. 1 Well, loca-  
8 ted in Section 30 of Township 18 South, 29 East.

9           Production in the area under study comes  
10 from two zones in the uppermost portion of the Grayburg form-  
11 ation of Permian age. One producing zone is the Loco Hills  
12 Sand that extends throughout the Loco Hills Field. Loco Hills  
13 is an informal sand name that is used by the operators in the  
14 field. This Loco Hills Sand corresponds to Zone 4 of the  
15 Grayburg, as established by the -- what used to be the U. S.  
16 Geological Survey, in the Maljamar Field to the east.

17           The second producing zone is the Grayburg  
18 dolomite, located immediately above the Loco Hills Sand. This  
19 zone is not continuous over the whole unit.

20           Within the study area the depth to the top  
21 of the Grayburg varies from 2200 to 2400 feet, while the Loco  
22 Hills Sand occurs about 100 feet deeper. This Loco Hills Sand  
23 is a fine grained, silty sandstone, containing sandy dolomite  
24 and minor amounts of shale. The amount of dolomite accumula-  
25 tion appears to be the dominant factor in controlling the



1  
2 porosity. The Grayburg dolomite is a light colored, dense,  
3 fine grained dolomite with some anhydrite; it contains oolitic  
4 porosity, pinpoint porosity, and random fractures, which may  
5 or may not be cemented.

6 Q Mr. Boneau, upon what factors was the  
7 geographical extent of the area sought to be unitized based?

8 A The proposed unit area encloses the south-  
9 west extension of the Loco Hills study field. This extension  
10 is an isolated stratigraphic trap, separated from the main  
11 development of the Loco Hills Sand, which is off to the north-  
12 east.

13 At the edges of the proposed unit both  
14 porosity and permeability in the Loco Hills Sand thin to non-  
15 commercial values. The Loco Hills Sand reservoir is limited  
16 to the proposed unit area by a circle of dry holes and the  
17 engineering report discusses 24 dry holes that surround the  
18 area. Two of these wells produced 628 and 1359 barrels of  
19 oil before being plugged in the mid-1960's. Six wells out-  
20 side the proposed unit area have logs which show some poro-  
21 sity in the Loco Hills Sand and three other wells had oil  
22 shows in the Loco Hills Sand. A completion attempt was made  
23 on only one of these wells and it failed.

24 The proposed unit includes the entire area  
25 where the southwest extension of the Loco Hills Field produces

oil in commercial quantities.

Q. Mr. Boneau, in your opinion has the area sought to be unitized been reasonably defined by development?

A. Yes, and I'll explain that. The discovery well for the southwest extension of the Loco Hills Field was the Denton-Massey No. 1, completed in June 1 of 1955 in Section 10 of 18 South, 29 East. This Denton well is completed in the dolomite for 50 barrels of oil per day.

The first well to produce from the Loco Hills Sand was the Depco Wright No. 1, completed October 1, 1955, in Section 20.

The proposed unit area covers approximately the 1060 acres, contains 28 wells that have produced from the interval to be unitized. Three of these wells were completed in 1955, two in '56, six in '61, 14 in '62, and three in 1963.

The Yates "B" Federal No. 1 in Unit B of Section 19 had been plugged and abandoned. Of the remaining 26 wells, nine wells are completed only the Loco Hills Sand, one well is completed only in the Grayburg dolomite immediately above the sand, and sixteen wells are completed in both the Loco Hills Sand and this Grayburg dolomite.

As of 1-1-81 the cumulative recovery from the 28 wells within the proposed unit area was 607,948 barrels of oil and in 1-1-82 the cumulative had risen to 614,124 bar-

1  
2 rels of oil.

3 There are 19 active producers in 1981 and  
4 7 wells are currently shut-in.

5 Q Mr. Boneau, in your opinion have the pro-  
6 ducing wells located within the area to be unitized reached  
7 an advanced state of depletion?

8 A Yes, the wells are substantially depleted  
9 and have reached their economic limit of productivity through  
10 primary means. All the wells in the proposed unit are oper-  
11 ating right at their economic limit, which I calculate to be  
12 about a barrel and a half per day.

13 During 1980 the average production was  
14 0.92 barrels of oil per producer. By the end of 1981 this  
15 average rate was 0.82 barrels of oil per producer. The best  
16 producing well makes 2-1/2 barrels a day and only five wells  
17 make over a barrel and a half per day.

18 The ultimate primary recovery of 615 to  
19 620,000 stock tank barrels of oil represents only about 11  
20 percent of the total oil originally in the Loco Hills Sand and  
21 in the Grayburg dolomite.

22 Q Mr. Boneau, at this time in preparation for  
23 your next question, would you identify instruments which have  
24 been marked Exhibits Seven and Eight?

25 A Exhibit Seven is the Form C-108, the appli-

1  
2 cation for our authorization to inject, and --

3 Q. That's Eight.

4 A. Well, my copies are mismarked. I hope  
5 yours are not such.

6 Exhibit Seven is an exhibit showing treating  
7 pressures on some wells in the proposed South Loco Hills Unit  
8 and Exhibit Eight is the Form C-108, the authorization for  
9 authority to inject.

10 Q. Mr. Boneau, referring to Exhibit Six, Seven,  
11 and Eight, as you need to, would you briefly outline the pro-  
12 posed secondary recovery project to the Examiner?

13 A. Okay, the map, which is Figure 24 in the  
14 engineering report, shows the recommended pattern of develop-  
15 ment for the proposed waterflood. The basic arrangement is  
16 a 5-spot pattern to be developed in two stages. Initially  
17 eight wells, which are indicated by triangles on Figure 24,  
18 would be converted to water injection wells in order to push  
19 oil toward the remaning 18 producers. later four additional  
20 wells on the northwest periphery would be converted to in-  
21 jection service. This 2-phase plan allows immediate develop-  
22 ment in the main portion of the reservoir while minimizing the  
23 number of nearby abandoned wells that might require remedial  
24 work to prevent loss of injected fluid. When the waterflood  
25 has proved itself, it can be expanded to the more marginal

area of the reservoir.

Exhibit Seven shows instantaneous shutdown pressures for fracture treatments at six Yates wells that were performed in the early 1960's. These instantaneous shutdown pressures run from 1500 to 1900 psi and we believe these values support our request for an average injection pressure of 1500 psi and a maximum injection pressure of 1800 psi.

The Exhibit Eight is the application for authorization to inject, which we call C-108, and we're going to inject for purposes of secondary recovery. Yates proposes to convert the eight producers shown by triangles on the map to water injection status and inject about 200 barrels of water per day per well at a maximum surface injection pressure of 1800 psi. The injection fluid will be fresh water from the Ogallala formation purchased from the Yucca Water Company. This is the same water used at the other waterfloods in the Loco Hills Field which have been operational from 1963.

The injection wells will be equipped with lined tubing and a packer and we intend to stimulate the existing perforations in each injection well with 1000 gallons of acid as a general cleanup treatment.

Prior to the start of injection the wells will be tested to assure the initial integrity of the casing, tubing and packer. Also, the wells will be equipped so that

1  
2 injection pressure and annular pressure can be measured in  
3 the wellhead.

4 In addition we intend to comply with the  
5 maintenance monitoring and reporting requirements outlined  
6 in Commission Rule 702, 703, 704, 705, and 706.

7 As a normal operating practice Yates  
8 Drilling runs yearly injection profiles on all injection wells  
9 to determine exactly where the injected fluids are going.  
10 We intend that these surveys will be run at the South Loco  
11 Hills Unit.

12 On a related topic, there are nine plugged  
13 wells within a half mile of one of the proposed injectors.  
14 It is important that no injected fluids escape by any of these  
15 abandoned wells. We have discussed these nine plugged wells  
16 with the Artesia office of the NMOCD and with members of the  
17 Santa Fe office. Six, or possibly seven of those nine wells  
18 need replugging according to our discussion with the Commis-  
19 sion, and in the end we will replug whatever wells the NMOCD  
20 directs.

21 The C-108 that we're submitting today  
22 covers injection into the eight wells involved in stage one  
23 of our project. We also ask that the future expansion of  
24 the waterflood be subject to administrative approval upon  
25 submission of a necessary C-108 form when that is appropriate.

1  
2 Q. Mr. Boneau, in your opinion, how much  
3 additional oil would be recovered through the proposed second-  
4 ary recovery operations in excess of the amount which would  
5 be recovered under primary methods alone?

6 A. Secondary reserves are predicted to be  
7 609,000 stock tank barrels and this estimate is based on a  
8 comparison with the waterfloods in the nearby West Loco Hills  
9 Unit and Far West Loco Hills Unit.

10 Q. What calculations have you made of the value  
11 of the projected increased production of oil?

12 A. This production will have a value of about  
13 12.8 million dollars over a ten year period. In doing these  
14 calculations I assumed a price of \$30.00 per barrel of oil,  
15 less royalty, severance tax, and windfall profit tax, to give  
16 a net return of \$20.75 per barrel.

17 Q. And that information is reflected in Table  
18 7 to Exhibit Number Six, is it not?

19 A. Yes, sir, that's correct.

20 Q. As amended by your revision of May 20, 1982?

21 A. When the report was -- when the engineering  
22 report was prepared in December, 1981, \$33.00 was a reasonable  
23 oil price. Now \$30.00 seemed like a maybe more appropriate  
24 price and we redid recently those calculations for an oil  
25 price of \$30.00 per barrel and the numbers I quoted were from

1 the table using \$30.00 per barrel as a base oil price.

2 MR. NUTTER: So this is an amended Table  
3 7, to replace the one that's in the book.

4 MR. DICKERSON: That's correct.

5 MR. NUTTER: And this is based on what  
6 gross value oil?

7 A. Gross value, \$30.00 per barrel after taxes  
8 and all, and royalty of \$20.75 per barrel.

9 MR. NUTTER: Okay, and the other one was  
10 based on a gross value of --

11 A. Of \$33.00. It's not all that different,  
12 but, well, half a million dollars.

13 MR. NUTTER: And that's \$22.27.

14 A. Yes, sir, that's correct.

15 Q. Mr. Boneau, what are the projected invest-  
16 ment costs for the proposed waterflood project?

17 A. The investment costs are projected at  
18 \$1.5 million and operating costs over a ten year period are  
19 projected at \$2.1 million.

20 Q. And that is shown in your engineering re-  
21 port, is it not?

22 A. That's shown in the engineering report and  
23 is also shown in this amended Table 7.

24 You've got to add up a couple columns to  
25



1  
2 get those numbers but --

3 Q Mr. Boneau, based on your calculations,  
4 what is the resultant net profitability in excess of the addi-  
5 tional cost to be incurred?

6 A The net earnings are approximately \$9.2  
7 million, again from the same Table 7 amended, and this money  
8 has a present value of about \$4.2 million when it's discounted  
9 at 14 percent, and this works out to an average annual rate  
10 of return of 40 or 50 percent on the money invested.

11 Q So, Mr. Boneau, based on your calculations,  
12 it is your opinion that the estimated additional cost of the  
13 proposed operations will not exceed the estimated value of  
14 the additional oil and gas to be recovered plus a reasonable  
15 profit?

16 A That is my opinion, yes, sir.

17 Q Will you now describe the method by which  
18 the projected additional production is allocated to the various  
19 tracts?

20 A Yes. It is recommended that participation  
21 in the proposed unit be based solely on cumulative production  
22 through 1980. These production figures are a very good repre-  
23 sentation of the ultimate primary recovery, since all wells  
24 are now right at their economic limit. In addition, secondary  
25 recovery should be approximately proportional to primary re-

1  
2 recovery and to cumulative production through 1980. A para-  
3 meter such as acre feet does not seem appropriate since any  
4 calculation of acre feet would be based on what I consider  
5 unreliable gamma ray logs from 20 to 25 years ago.

6 Q Mr. Boneau, in your opinion does the parti-  
7 cipation formula in the proposed unit agreement allocate the  
8 produced and saved unitized substances to these separate  
9 tracts on a fair, reasonable, and equitable basis?

10 A It certainly does in my opinion.

11 Q Is the unitized management operation and  
12 further development of the South Loco Hills Grayburg Unit  
13 reasonably necessary to carry on secondary recovery operations  
14 in order to ultimately increase the recovery of oil?

15 A It is. There is just no fair way to con-  
16 duct a secondary recovery project without first forming a  
17 single unit, so operations can be carried on without regard  
18 to lease boundaries.

19 Q In your opinion, then, is the proposed  
20 unitized method of operation feasible and will it, with reason-  
21 able probability result in the increased recovery of substan-  
22 tially more oil and gas from the unitized portion of the pool  
23 than would otherwise be recovered without unitization?

24 A For the reasons I have stated, the project  
25 is feasible, in my opinion, and will result in the recovery

1  
2 of much greater quantities of oil than would otherwise be  
3 the case.

4 Q Mr. Boneau, in your opinion will the granting  
5 of these applications and the adoption of the proposed unitized  
6 method of operation benefit the owners of working and royalty  
7 interest in the unit area?

8 A It certainly will. I believe it will re-  
9 sult in a profitable operation for all concerned.

10 Q In your opinion, Mr. Boneau, will the  
11 granting of the applications in these cases have any adverse  
12 affect on other portions of the pool?

13 A No, it will not. The South Loco Hills  
14 Area is an isolated stratigraphic trap and is not going to  
15 affect anything else in Loco Hills Pool.

16 Q Mr. Boneau, in your opinion will the granting  
17 of the statutory application for unitization prevent waste and  
18 protect the correlative rights of all owners within the pro-  
19 posed unit area?

20 A It surely will.

21 MR. DICKERSON: Mr. Examiner, at this time  
22 we'd move admission of Applicant's Exhibits Six, Seven, and  
23 Eight.

24 MR. NUTTER: Applicant's Six, Seven, and  
25 Eight will be admitted in evidence.

1  
2 MR. DICKERSON: And that concludes our  
3 direct testimony, Mr. Examiner.  
4

5 CROSS EXAMINATION

6 BY MR. NUTTER:

7 Q Mr. Boneau, your Table 9 shows what the  
8 cumulative production of the various tracts was through 1980,  
9 and also the participation percentage for each of those tracts.  
10 Then when I go to Exhibit -- or the Table 7 I see what your  
11 gross production for the various years would be, and Table 9  
12 shows that the project through 1980 has produced about 608,000  
13 barrels, and then this Table 7 shows that gross production  
14 for an 11-year period is 618,000.

15 Now, how much of this 618,000 that you're  
16 projecting here for '82 through '92 would be secondary recovery  
17 oil and how much would have been primary had it stayed on  
18 primary recovery?

19 A My calculations are that 609,000 of the  
20 618,000 are secondary and approximately 9 or 10,000 are re-  
21 maining primary.

22 Q That's all the remaining primary you can  
23 see there, huh?

24 A Yes, sir, that's correct.

25 Q 10,000 barrels. 610,000, you say?

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A. Yeah, 609,000 is --

Q. 609,000.

A. -- is the number we are using.

Q. Is secondary.

So this is the reason why you've only adopted the one parameter for participation, that the tracts will participate on the basis of primary.

A. The tracts are --

Q. Do you think it's certain that there's going to be just about a one to one ratio?

A. Pretty close to one to one, and that's based, like I said, on the comparison with the surrounding waterfloods, which have done somewhat better than that, but we think our rock is not quite as good as their rock.

Q. And this doesn't make any difference whether the wells are completed in the upper zone or the lower zone or both zones, the secondary is going to be equal kind.

A. Well --

Q. You're going to be flooding all the zones, aren't you?

A. We're going to be flooding the -- whatever zones are presently opened in the wells that we're using for injectors. That's going to be the point at which we start.

We think those zones will flood some people--

1  
2 we're not quite so sure about the dolomite, but we're going  
3 to try to flood it. If we have problems we'll have to plug  
4 it off; if it's successful we'll open the dolomite in the re-  
5 maining wells.

6 Q Now are some of the wells completed only  
7 in the dolomite and not in the other zones?

8 A There is only one well that's completed  
9 only in the dolomite.

10 Q And you don't have it physically open in  
11 the dolomite in those.

12 A Well, if the dolomite floods successfully,  
13 I anticipate opening the dolomite in those.

14 Q I see.

15 A But --

16 Q Let's wait and see.

17 A It may be either way and we think the best  
18 thing to do is to try it and see what happens.

19 Q Now, there are no injection projects im-  
20 mediately offsetting this project, are there? In other words --

21 A Not immediately, but there are some nearby,  
22 three -- three miles to the northeast.

23 Q Well, I meant directly offsetting.

24 A No, there are not. We're surrounded by  
25 dry holes. This is a separate stratigraphic pool.

Q. It's a little separate pool all of its own here.

A. A little separate, all of its own, yes, sir.

Q. And you've pretty much got everything that's in the reservoir in the unit.

A. We think we have everything that's -- that's in it. Like I mentioned, the two wells outside that made 600 and 1300 barrels of oil, there are a few other wells with a little porosity on the logs but one of those was attempted as a completion and failed and nobody's tried to complete the other.

Q. Now what were those wells that were outside that you don't have in the unit, this Westall Unit No. 2 over here in Section 20, is that one of them?

A. Well, that's one of the wells that is not in the unit, yes, and it's not in the unit -- that particular one's not in the unit because they -- well, let me backtrack a minute.

The well -- that well was drilled very recently, in 1981. They tested the San Andres and got some oil production, 50 barrels a day, roughly; plugged it off, came back up and perforated the Loco Hills and some other upper zones and got essentially nothing; went back to the San Andres. So it's a San Andres producer. It doesn't belong in

1  
2 our Grayburg Unit.

3 There are two wells on the west side of  
4 the unit, a Pure Federal Well and a, oh, a Reese and Sims Well,  
5 I think, that produced a tiny bit of oil and were plugged in  
6 1964.

7 Q Okay, that Reese and Sims is this No. 16  
8 down here in the southeast southeast of Section 24, I presume.

9 A I think that's right, and you're much  
10 faster in looking at the exhibit --

11 Q Well, it's on your map.

12 A This one here, yeah, it's right in the --

13 Q Okay, now that produced a small amount and  
14 was P&A'd then. Right?

15 A That is my memory, yes, sir.

16 Q And I think you mentioned another well,  
17 also.

18 A Yes, I mentioned another well. And I even  
19 gave you the name in the testimony. Okay, the Gulf State No.  
20 1, and that's -- that's Number 16 on the map, just off the  
21 west edge of the Alscott Federal lease. It produced 1300  
22 barrels of oil, was plugged in 1966.

23 This Pure Federal Well produced 628 barrels  
24 of oil and was plugged in 1964.

25



1  
2 They are plugged and abandoned. They  
3 don't belong in our unit.

4 Other than little things, minor items like  
5 that, we include everything that's productive in this Loco  
6 Hills Sand.

7 Q I see. Now you said I'd have to add some  
8 columns here to come up with your economics. What are those  
9 totals again you ran through so quickly, on total cost of  
10 development versus --

11 A. Okay.

12 Q -- anticipated revenues.

13 A. You have page seven there, I believe.

14 Q Right. Table 7.

15 A. Table 7, okay. Anticipated revenue, I  
16 said \$12.9 million. Well, that says -- or did I say \$12.8  
17 million? The figure there is \$12,835,920, the sum of column  
18 three, the total of column three. Okay.

19 Q Okay, that's revenue.

20 A. That's revenue. The other number I quoted  
21 was expenses and I believe I said investment of \$1.5 million,  
22 which is the sum of the totals of columns six and seven, in-  
23 tangible expense and capital expense.

24 Q Okay, and those two together add up to  
25 what?

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A. I said \$1.5 million, approximately. I have trouble adding up that many digits in my head exactly.

And then I also said operating costs of approximately \$2.1 million and there I was referring to the sum of the totals of the operating costs and the water costs, which are \$2,028,600 plus water costs of \$113,700.

And then I said that was net earnings of \$9.2 million and the total under column 11 is \$9,186,346, and then I also a discounted value, which is the total under the far right column, \$4.2 million.

Q. So actually what we've got is, in summation, would be revenues, column three, minus expenses, which is column ten.

A. Yes, sir, that's correct.

Q. And that gives you net earnings then.

A. Yes, sir, that's correct.

Q. And you show a positive figure there. You're going to make money.

A. That's what the numbers show, yes, sir.

Q. All right. That's what we've got to have in these statutory unitizations, you got to make money.

MR. NUTTER: Are there any other questions of Mr. Boneau?

MR. DICKERSON: None.

1  
2 MR. NUTTER: He may be excused.

3 Do you have anything further, Mr. Dickerson?

4 MR. DICKERSON: No, Mr. Nutter.

5 MR. NUTTER: Does anyone have anything  
6 they wish to offer in Cases 7596 and 7597?

7 We'll take the cases under advisement.

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9 (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. 7596-7597 heard by me on 5/26 1982

[Signature], Examiner  
Oil Conservation Division

SALL. BOYD, C.S.R.

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