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October 25, 1985

HAND DELIVERED

R. L. Stamets, Director  
Oil Conservation Division  
New Mexico Department of  
Energy and Minerals  
State Land Office Building  
Santa Fe, New Mexico 87501

Re: Application of Union Texas Petroleum Corporation  
for Extension of the West Lindrith Gallup-Dakota  
Pool, Rio Arriba County, New Mexico.

Dear Mr. Stamets:

Enclosed in triplicate is the Application of Union Texas Petroleum Corporation in the above-referenced case. Union Texas Petroleum Corporation respectfully requests that this matter be placed on the docket for the Examiner hearings scheduled on November 21, 1985.

Very truly yours,



William F. Carr

WFC/cv  
enclosures

cc: (w/enclosure)  
Mr. Mike Pippin

RECEIVED  
OCT 24 1985  
OIL CONSERVATION DIVISION  
Case 8768

# Memo

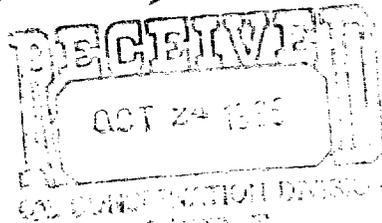
From

ERNIE BUSCH  
Geologist - Field Rep.

To Mike Stoguer,

10-22-85

Mike,



Attached is a map showing  
the relationship of the west  
half of the Gallup Dakota Pool  
to the Otero Gallup. The  
area in question is the N/2 of  
Section 182 of 24N-5W.  
Call me and we'll discuss  
it in more detail.

Thanks  
Ernie

Oil Conservation

Aztec, New Mexico

Rio Arriba

County,

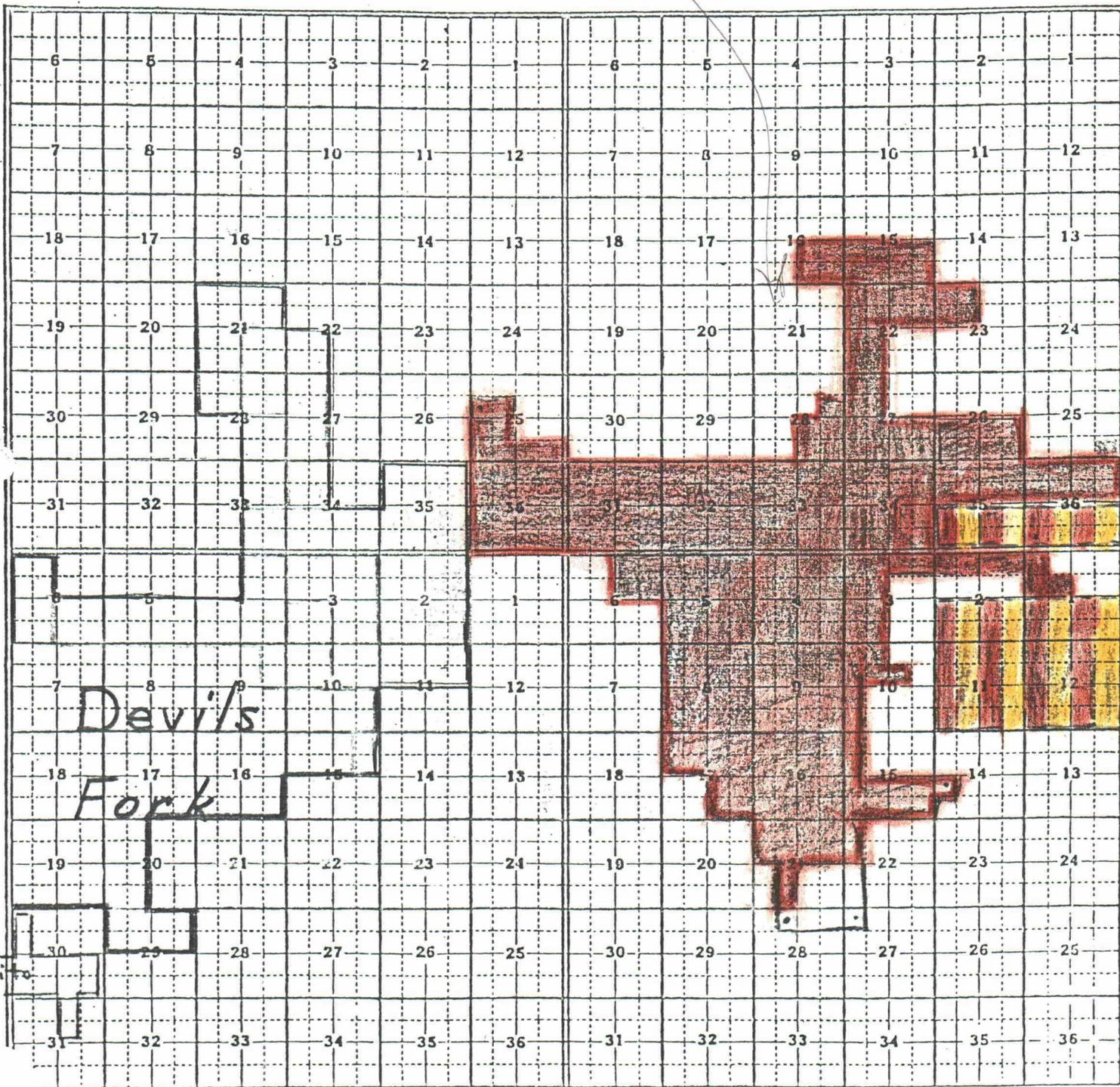
Township 25 N Range 6 W

Township 25 N Range 5 W

Township 24 N Range 6 W

Township 24 N Range 5 W

Form 104-(Four on Township)



W. Under, H. Gallup

25 West Under Gallup Patent

24

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Escrito

Devil's Fork





STATE OF NEW MEXICO  
**ENERGY AND MINERALS DEPARTMENT**  
OIL CONSERVATION DIVISION

TONEY ANAYA  
GOVERNOR

January 20, 1986

POST OFFICE BOX 2088  
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SANTA FE, NEW MEXICO 87501  
(505) 827-5800

Mr. William F. Carr  
Campbell & Black  
Attorneys at Law  
Post Office Box 2208  
Santa Fe, New Mexico

Re: CASE NO. 8768  
ORDER NO. R-8106-A

Applicant:

Union Texas Petroleum Corporation

Dear Sir:

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Sincerely,

R. L. STAMETS  
Director

RLS/fd

Copy of order also sent to:

Hobbs OCD   x    
Artesia OCD   x    
Aztec OCD   x  

Other \_\_\_\_\_  
\_\_\_\_\_

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

6 21 November 1985

7 EXAMINER HEARING

8 IN THE MATTER OF:

9 Application of Union Texas Petro- CASE  
10 leum Corporation for an extension 8768  
11 of the West Lindrith Gallup-Dakota  
12 Oil Pool, and the contraction of  
13 the Otero-Gallup Oil Pool, Rio  
14 Arriba County, New Mexico.

15 BEFORE: Michael E. Stogner, Examiner

16  
17 TRANSCRIPT OF HEARING

18  
19 A P P E A R A N C E S

20  
21 For the Division:

22 Jeff Taylor  
23 Attorney at Law  
24 Legal Counsel to the Division  
25 Energy and Minerals Dept.  
Santa Fe, New Mexico 87501

26 For the Applicant:

27 Willam F. Carr  
28 Attorney at Law  
29 CAMPBELL & BLACK P. A.  
30 P. O. Box 2208  
31 Santa Fe, New Mexico 87501

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I N D E X

STATEMENT BY MR. CARR 4

MIKE PIPPIN

Direct Examination by Mr. Carr 7

E X H I B I T S

Union Exhibit One, Plat 9

Union Exhibit Two, Plat 11

Union Exhibit Three, Cross Section 11

Union Exhibit Four, Structure Map 13

Union Exhibit Five, Cross Section A-A' 13

Union Exhibit Six, Cross Section B-B' 13

Union Exhibit Seven-A, Log 14

Union Exhibit Seven-B, Log 15

Union Exhibit Eight, Curve 15

Union Exhibit Nine-A, Curve 15

Union Exhibit Nine-B, Curve 15

Union Exhibit Ten, Curves 16

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E X H I B I T S

Union Exhibit Eleven, Data	18
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1  
2 MR. STOGNER: Call next Case  
3 8768.

4 MR. TAYLOR: The application of  
5 Union Texas Petroleum Corporation for an extension of the  
6 West Lindrith Gallup-Dakota Oil Pool and contraction of the  
7 Otero-Gallup Oil Pool, Rio Arriba County, New Mexico.

8 MR. CARR: May it please --

9 MR. STOGNER: Call for appear-  
10 ances.

11 MR. CARR: May it please the  
12 Examiner, my name is William F. Carr, with the law firm  
13 Campbell & Black, P. A., appearing on behalf of Union Texas  
14 Petroleum Corporation.

15 I have one witness.

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

18 There being none, will the wit-  
19 ness please stand and be sworn.

20  
21 (Witness sworn.)  
22

23 MR. CARR: May it please the  
24 Examiner, initially, we originally applied to extend the  
25 West Lindrith Gallup-Dakota Pool into a certain area in Rio

1 Arriba County.

2                   Following certain meetings with  
3 representatives in the Aztec District Office, it became ap-  
4 parent that the way we had proposed this pool expansion  
5 would result in certain acreage that is now within the Gal-  
6 lup-Otero Pool being segregated from that pool. There would  
7 be non-contiguous acreage that would still be Otero-Gallup,  
8 in the Otero-Gallup Pool.

9                   For that reason we are contrac-  
10 ting our application to exclude from our proposed extension  
11 the southeast quarter of Section 34 in Township 25 North,  
12 Range 5 West, and the northeast quarter of Section 3.

13                   MR. STOGNER: I'm sorry, what?

14                   MR. CARR: And the northeast  
15 quarter, directly below the other one, of Section 3.

16                   MR. STOGNER: Okay, I got the  
17 southeast quarter of 34, 25, 5; the northeast quarter of 3.

18                   MR. CARR: Three, and that's in  
19 24 North, 5 West. It's the 60 acres directly south.

20                   MR. STOGNER: All right.

21                   MR. CARR: This will -- this  
22 change will result in there not being non-contiguous acreage  
23 in the Otero-Gallup Pool. We have met with representatives  
24 of the Aztec District Office and it is my understanding that  
25 they are in concurrence with this amendment of the applica-

1 tion.

2 MR. STOGNER: Mr. Carr.

3 MR. CARR: Yes, sir.

4 MR. STOGNER: In looking at No.  
5 3, Section 3, I'm sorry, it appears to me only the north  
6 half of the northeast quarter of Section 3 is included in  
7 the Otero-Gallup, is that correct?

8 MR. CARR: That is correct.

9 MR. STOGNER: Okay.

10 MR. CARR: And, Mr. Stogner, if  
11 you would like to refer to our Exhibit Number One, it might  
12 be easier to show what we're attempting to do.

13 MR. STOGNER: Okay.

14 MR. CARR: You can see the  
15 Otero-Gallup Pool with a hatched line in this area and what  
16 we are trying to do is avoid a situation where the north  
17 half of the north half of 2 would not be contiguous with the  
18 rest of that pool, and so we have just proposed to take out  
19 of our proposed extension area those two 160-acre tracts im-  
20 mediately to the west of Section 2, thereby connecting that  
21 acreage back up with the Otero-Gallup.

22 MR. STOGNER: Thank you, Mr.  
23 Carr.

24 MR. CARR: And, Mr. Stogner, I  
25 would also note that we just recently reached this agree-

1 ment with the Aztec Office and therefore our exhibits will  
2 have to be amended by reference to that extent because they  
3 do show all of the proposed extension as we originally re-  
4 quested it.

5 MR. STOGNER: Thank you, Mr.  
6 Carr.

7  
8 MIKE PIPPIN,  
9 being called as a witness and being duly sworn upon his  
10 oath, testified as follows, to-wit:

11  
12 DIRECT EXAMINATION

13 BY MR. CARR:

14 Q Will you state your full name and place  
15 of residence?

16 A Mike Pippin, spelled P-I-P-P-I-N, and I  
17 live in Farmington, New Mexico.

18 Q Mr. Pippin, by whom are you employed?

19 A By Union Texas Petroleum Corporation.

20 Q And in what capacity are you employed?

21 A I'm a petroleum engineer.

22 Q Have you previously testified before this  
23 Division?

24 A No, I have not.

25 Q Would you review for Mr. Stogner your

1 educational background and your work experience?

2 A I received a Bachelor of Science degree  
3 in engineering from Southern Illinois University in August,  
4 1970.

5 I was employed by Texaco, Incorporated,  
6 from September, 1970, to December of 1977. With Texaco I  
7 worked the Illinois Basin for seven years.

8 I then was employed by Northwest Pipeline  
9 Corporation for five years and worked the San Juan Basin.

10 In January of '83 I went to work for  
11 Union Texas Petroleum Corporation, again working San Juan  
12 Basin, and I've been in that job for two and a half years.

13 I am a Registered Professional Petroleum  
14 Engineer in New Mexico and my registration number is 6626.

15 Q Mr. Pippin, does your area of  
16 responsibility with Union Texas include the portion of Rio  
17 Arriba County, New Mexico, which is the subject of today's  
18 hearing?

19 A Yes, it does.

20 Q Are you familiar with this acreage?

21 A Yes.

22 Q Are you familiar with the application  
23 filed in this case on behalf of Union Texas?

24 A Yes.

25 MR. CARR: We tender Mr. Pippin

1 as an expert witness in petroleum engineering.

2 MR. STOGNER: Mr. Pippin is so  
3 qualified.

4 Q Mr. Pippin, will you briefly state what  
5 is being sought by Union Texas in this case?

6 A By this application Union Texas Petroleum  
7 Corporation is requesting an extension of the West Lindrith  
8 Gallup-Dakota Pool, which will give us blanket approval to  
9 commingle Dakota and Gallup production and fix the drilling  
10 block dedication at 160 acres on our Jicarilla "L" and "N"  
11 lease, located in Townships 24 North, 25 North, Range 5  
12 West, of Rio Arriba County, New Mexico.

13 Q Now, Mr. Pippin, you will be able to  
14 downhole commingle and also increase the spacing because you  
15 will come under the special pool rules for the West Lindrith  
16 Gallup-Dakota if this application is in fact granted, is  
17 that correct?

18 A That is correct.

19 Q And you have reviewed this proposal with  
20 the Aztec District Office, have you not?

21 A Yes, I have.

22 Q Would you now refer to what has been mar-  
23 ked for identification as Union Texas Exhibit Number One,  
24 identify it, and review it for Mr. Stogner?

25 A Okay. Exhibit Number One is a map

1 showing UTPC acreage, which is shaded, in Rio Arriba County,  
2 New Mexico.

3 The area enclosed in orange is the exist-  
4 ing West Lindrith Gallup-Dakota Pool. The area enclosed by  
5 the blue hatching is the Otero-Gallup Pool. The area en-  
6 closed in yellow is our proposed extension to the West Lin-  
7 drith Gallup-Dakota Pool.

8 Of course, this has been modified as pre-  
9 viously stated.

10 Also represented are the Gallup-Dakota  
11 commingled wells. Those in the West Lindrith Gallup-Dakota  
12 Pool were commingled by State Order R-4314 and those in the  
13 UTP shaded acreage were commingled by Order R-5354.

14 The map also represents Gallup-Dakota  
15 dual wells and all of the Dakota single wells.

16 The offsetting wells and leases are shown  
17 and the ownership of each, and this is -- all of our acreage  
18 is Federal lease.

19 Q And are you familiar with the rules gov-  
20 erning the West Lindrith Gallup-Dakota Pool?

21 A Yes, I am.

22 Q And do these -- what is the spacing pro-  
23 vided for in these pool rules?

24 A The spacing is 160 acres. The Gallup and  
25 Dakota are treated as one pool in the commingle.

1           Q           What is the spacing for the Otero-Gallup  
2 Oil Pool?

3           A           The Otero-Gallup has a 40-acre well spac-  
4 ing which applies only to the Gallup formation.

5           Q           Has in fact the Otero-Gallup formation  
6 been developed on 40-acre spacing, on a 40-acre spacing pat-  
7 tern?

8           A           No, it has not. At the best I would say  
9 160-acre spacing when it's economical. In many places it's  
10 not even 160.

11          Q           Would you now refer to what has been mar-  
12 ked as Union Texas Petroleum Exhibit Number Two and identify  
13 this and review it, please?

14          A           Similar to Exhibit Number One, this plat  
15 shows all the Dakota wells, along with the existing pool and  
16 the proposed pool extensions.

17                       Otherwise it's the same as Exhibit One.

18          Q           All right. Would you now go to Exhibit  
19 Number Three and review that, please?

20          A           This is a composite of the previous two  
21 maps and we show UTPC acreage in Rio Arriba County, New Mex-  
22 ico.

23                       This is our cross section index map and  
24 the cross sections which we will present later are repre-  
25 sented here.

1           Q           Mr. Pippin, are there certain wells de-  
2           picted on this map that have been drilled by Union Texas for  
3           which no connection has been obtained?

4           A           Yes. We have a well in the southeast  
5           quarter of Section 4 which we drilled in 1984. It's the  
6           Jicarilla "N" No. 1-E, Unit letter O. We drilled this in  
7           '84 and we've been unable to get the pipeline to connect the  
8           well.

9           Q           Do you anticipate that you could encoun-  
10          ter similar problems with a pipeline for additional wells  
11          that you may drill in this area?

12          A           Yes, I do.

13          Q           Do you have any plans at this time for  
14          additional development within the extension area?

15          A           After a series of demands and appeals, we  
16          have been ordered to drill a well on this acreage. We plan  
17          on drilling a well in the southeast quarter of Section 33,  
18          25 North, 5 West.

19          Q           And who has made these demands on you?

20          A           The BLM.

21          Q           Will granting this application avoid the  
22          potential for further demands to develop this acreage on a  
23          40-acre spacing pattern?

24          A           Yes, it will.

25          Q           Will you -- is the ownership common in

1 the Gallup and Dakota formations under the entire area into  
2 which you propose to extend the West Lindrith Gallup-Dakota  
3 Pool?

4 A Yes.

5 Q Would you now refer to what has been mar-  
6 ked as Exhibit Number Four and review this for the Examiner?

7 A Exhibit Number Four is a map of the same  
8 UTPC acreage in Rio Arriba County, New Mexico. It indicates  
9 structure using the top of the Dakota as datum. Although  
10 the structure is not really important in making a well in  
11 this area, the map indicates that the UTPC State acreage and  
12 West Gallup-Dakota acreage are not separated structurally in  
13 any way.

14 Q Will you now go to your cross section A-  
15 A', which is Exhibit Number Five, and review this?

16 A This is a cross section from our Jicaril-  
17 la "L" No. 4 through Jicarilla "L" No. 6-E.

18 It indicates that both Gallup and Dakota  
19 are the same continuous zones throughout the length of this  
20 cross section.

21 Q Now would you take out Exhibit Number B  
22 and review that quickly also -- cross section B-B', which is  
23 marked Exhibit Six?

24 A Exhibit Six is a three-well cross section  
25 which may be seen on the index map, Exhibit Three. The

1 cross section, Exhibit Six, is from Jicarilla "L" No. 5  
2 through Jicarilla "L" No. 2. This also indicates that both  
3 Gallup and Dakota formations are the same continuous zone  
4 throughout the length of the cross section.

5 Q And, Mr. Pippin, both your cross sections  
6 examine the formations within the extension area.

7 Would you now take out Exhibit Seven-A  
8 and using that compare the formations as they exist within  
9 the West Lindrith Gallup-Dakota Pool with these formations  
10 as they exist in the proposed extension area?

11 A Okay. Please correlate Exhibit Seven-A  
12 with Exhibit Five. Exhibit Seven-A should go to the right  
13 of Exhibit Five next to the Jicarilla "L" 6-E.

14 Consistent with the structure map the  
15 Gallup and Dakota producing intervals are continuous from  
16 the UTPC acreage into the West Lindrith Gallup-Dakota Pool.  
17 Therefore, geologically there is no reason to treat our ac-  
18 reage differently from West Lindrith Gallup-Dakota.

19 Q And Exhibit A, the log of the Jicarilla  
20 Tribal 35 A No. 1 Well, this is a log of a well within the  
21 West Lindrith Gallup-Dakota Pool.

22 A That is correct.

23 Q Would you now please refer to what has  
24 been marked Exhibit Seven-B and correlate the intervals on  
25 this log with those depicted on your B-B' cross section,

1 being Exhibit Number Six?

2 A Exhibit Number Seven-B needs to be  
3 correlated with the righthand side of Exhibit Six.

4 Exhibit Seven-B is the Jicarilla Gas Com  
5 35 C No. 1, which is in the West Lindrith Gallup-Dakota  
6 Pool. It's approximately 3863 feet from our Jicarilla L No.  
7 2.

8 This is also consistent with the struc-  
9 ture map. It shows the Gallup and Dakota producing inter-  
10 vals are continuous from the UTPC acreage into the West Lin-  
11 drith Gallup-Dakota Pool.

12 Q Mr. Pippin, I'd now like to direct your  
13 attention to what has been marked Union Texas Exhibit Number  
14 Eight and ask that you identify this and then review the in-  
15 formation on this exhibit with Mr. Stogner.

16 A Exhibit Number Eight is a production com-  
17 posite curve of the six UTPC wells commingled by Order R-  
18 5354 in July of 1977.

19 Note the production increase in July of  
20 '77 when we actually commingled the wells.

21 Q Will you now refer to Exhibits Nine-A and  
22 Nine-B?

23 A Exhibits Nine-A and B are individual pro-  
24 ducing curves from the dual well Jicarilla N No. 2. Al-  
25 though we have commingling authorization under Order R-5354,

1 we could not commingle this well due to different pipelines  
2 dedicated to each producing interval. We therefore have in-  
3 dividual flows from the respective formations.

4 Exhibit Nine-A shows the Dakota in Jica-  
5 rilla N-2. It shows the Dakota. It indicates a consistent  
6 decline rate with the exception of pipeline curtailment in  
7 late '82 and 1983.

8 Exhibit Number Nine-B shows the Gallup  
9 production from the same dual well. Instead of a consistent  
10 decline this well started producing erratically in 1981. I  
11 would conclude that commingling would have helped stabilize  
12 this well's production.

13 Q In your opinion based on your experience  
14 in the area, does the Gallup perform in a more stable  
15 fashion if it is commingled with the Dakota?

16 A Yes, it does.

17 Q Would you go to Exhibit Number Ten, iden-  
18 tify Exhibit Ten, which consists of a number of sets of  
19 curves, and review at least the first couple of curves for  
20 us?

21 A Exhibit Ten has three curves from each of  
22 the six wells that we commingled in 1977.

23 The first of each of these six sets is  
24 the Gallup and Dakota production added together.

25 The first page in Exhibit Ten is the

1 Jicarilla L-6. It shows the commingled Gallup-Dakota pro-  
2 duction. Please note the increase in July of '77 when the  
3 well was commingled.

4 On the next page we have indicated indi-  
5 vidual Gallup and Dakota production for the same time  
6 period. The top curve, the Dakota, produced consistently  
7 before the commingling but the bottom curve, the Gallup, was  
8 very inconsistent before we commingled. They are producing  
9 more hydrocarbons after the commingling. They're producing  
10 more efficiently due to commingling.

11 The next page shows the Gallup-Dakota  
12 production added together in our Jicarilla N No. 1. Please  
13 note the increased production in July of '77 when the well  
14 was commingled.

15 The page after that shows the individual  
16 Dakota and Gallup production from Jicarilla N-1. Again the  
17 Dakota shows a consistent decline but the Gallup is very in-  
18 consistent before we commingled; thus we are making more hy-  
19 drocarbons and producing more efficiently.

20 I won't go through all these curves and I  
21 don't want to give the impression that the advantages of  
22 commingling are always as obvious as they appear in these  
23 two wells.

24 Q But can you say, though, as a general  
25 rule that the Gallup performs better once it has been com-

1 mingled with the Dakota in this area?

2 A Yes, very definitely.

3 Q Would you now refer to what has been mar-  
4 ked Exhibit Eleven and review this for Mr. Stogner?

5 A Exhibit Eleven shows production figures  
6 from all Gallup and/or Dakota wells in the six sections  
7 which will be affected by this proposal.

8 Please note the average Gallup production  
9 is 21.5 MCF per day, 1.2 barrels of oil per day. This would  
10 be an uneconomical well if drilled as a single.

11 The Dakota average production is 84 MCF  
12 per day and 1.5 barrels of oil per day. This would be only  
13 a marginal well if drilled as a single.

14 Together these wells make a more economi-  
15 cal venture.

16 Q Would you now refer to UTP Exhibit  
17 Twelve, identify this and review it?

18 A Exhibit Number Twelve is an analysis of a  
19 water sample taken from both the Gallup and Dakota producing  
20 streams from our dual well on our acreage, the Jicarilla N  
21 No. 2.

22 It shows that the Gallup and Dakota  
23 waters from the well are compatible; that is, there should  
24 be no detrimental effects when we mix them, such as a  
25 precipitate. This is consistent with what we have observed

1 since July of 1977 in the six wells we've commingled.

2 Q Will you now go to Exhibit Thirteen and  
3 review that?

4 A Exhibit Thirteen shows a gas analysis of  
5 both Gallup and Dakota gas from gas samples taken from the  
6 dual well, Jicarilla N No. 2. The results indicate that the  
7 gas is very similar in gravity and BTU content.

8 Q And now go to Exhibit Number Fourteen.

9 A Exhibit Fourteen is an analysis of both  
10 Gallup and Dakota oil from samples taken from our dual well,  
11 Jicarilla N No. 2. The main results are on the second page.  
12 It states that there should be no detrimental effects, such  
13 as precipitates, when the oils are mixed.

14 This again is consistent with what we  
15 have observed in our six commingled wells in the area since  
16 July of 1977.

17 Q And you anticipate no compatibility prob-  
18 lems from commingling either water, gas, or oil in these  
19 wells.

20 A I do not.

21 Q All right. At the present time are you  
22 flowing the Dakota and the Gallup or are they being artifi-  
23 cially lifted?

24 A We are flowing both zones.

25 Q Do you anticipate any problem with any

1 cross flow between either the -- between the Gallup and the  
2 Dakota if in fact commingling authority is granted?

3 A I do not anticipate any cross flow prob-  
4 lems.

5 Q Are the reservoir characteristics of each  
6 of these pools such that underground waste would not be  
7 caused by commingling?

8 A No.

9 Q And in your opinion will granting this  
10 application result in the increased recovery of hydrocar-  
11 bons?

12 A Yes, it will.

13 Q Will the value of the commingled produc-  
14 tion in the extension area exceed the values of the produc-  
15 tion from each of the individual zones?

16 A Yes, it will.

17 Q And in your opinion will economic savings  
18 result if in fact this application is granted?

19 A Very definitely. We won't have to drill  
20 unnecessary wells and we should be able to increase the ul-  
21 timate reserves from any future Gallup-Dakota wells drilled.

22 Q In your opinion will granting this appli-  
23 cation be in the best interest of conservation, the preven-  
24 tion of waste, and the protection of correlative rights?

25 A Yes, it will.



## 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 (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. 8768, heard by me on 21 November 1985.

Walter E. Stevens, Examiner  
Oil Conservation Division