

CASE 7480: ARCO OIL AND GAS COMPANY FOR  
POOL CREATION, LEA COUNTY, NEW MEXICO

DOCKET MAILED

Date 2/5/82

CASE NO.

7480

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APPLICATION,  
TRANSCRIPTS,  
SMALL EXHIBITS,  
ETC.

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

EXAMINER HEARING

IN THE MATTER OF:

Application of ARCO Oil & Gas Com-  
pany for pool creation, Lea County,  
New Mexico.

CASE  
7480

and

Application of ARCO Oil & Gas Com-  
pany for amendment of Order No.  
R-6792, Lea County, New Mexico.

CASE  
7481

BEFORE: Richard L. Stamets

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:

William F. Carr, Esq.  
CAMPBELL, BYRD, & BLACK P.A.  
Jefferson Place  
Santa Fe, New Mexico 87501

## I N D E X

B. L. STOKELY

Direct Examination by Mr. Carr

4

E. R. DOUGLAS

Direct Examination by Mr. Carr

11

## E X H I B I T S

Applicant Exhibit One, Map

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Applicant Exhibit Two, Pressure Test

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Applicant Exhibit Three, Log

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Applicant Exhibit Four, Gas Analysis

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Applicant Exhibit Five, Application

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Applicant Exhibit Six, Structure Map

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Applicant Exhibit Seven, Report

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Applicant Exhibit Eight, Cross Section

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Applicant Exhibit Nine, Stipulation

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1  
2 MR. STAMETS: We'll call next Case  
3 Number 7480.

4 MR. PEARCE: Application of ARCO Oil &  
5 Gas Company for pool creation, Lea County, New Mexico.

6 MR. CARR: May it please the Examiner,  
7 my name is William F. Carr, with the law firm Campbell, Byrd,  
8 and Black, P. A., Santa Fe, appearing on behalf of the ap-  
9 plicant.

10 We would request that you also call  
11 Case 7481 and consolidate the cases for the purpose of  
12 hearing, inasmuch as they involve the same well and the same  
13 acreage.

14 MR. STAMETS: If there is no objection,  
15 we will now call Case 7481 and consolidate them for purposes  
16 of testimony.

17 MR. PEARCE: Case 7481. Application of  
18 ARCO Oil & Gas Company for amendment of Order No. R-6792,  
19 Lea County, New Mexico.

20 MR. CARR: I have two witnesses who  
21 need to be sworn.

22  
23 (Witnesses sworn.)  
24  
25

B. L. STOKELY

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

DIRECT EXAMINATION

BY MR. CARR:

Q Will you state your name and place of  
residence?

A. My name is B. L. Stokely. I reside in  
Midland, Texas.

Q Mr. Stokely, by whom are you employed  
and in what capacity?

A. I'm employed by ARCO Oil and Gas Com-  
pany as a Senior Petroleum Engineer.

Q Have you previously testified before  
this Commission or one of its Examiners and had your creden-  
tials as a petroleum engineer accepted and made a matter of  
record?

A. Yes, I have.

Q Are you familiar with the applications  
filed in each of these cases on behalf of ARCO Oil and Gas?

A. Yes, I am.

Q Are you familiar with the Custer Wells  
No. 1 Well?

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A. Yes, I am.

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Q Are you also familiar with the subject acreage?

5

A. Yes, I am.

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7

Q Are the witness' qualifications acceptable?

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MR. STAMETS: They are.

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Q Will you briefly summarize the history of the Custer Wells No. 1 Well?

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A. If you will refer to Exhibit One, you'll see an area map, which shows the Custer Wells No. 1 with its dedicated acreage outlined in red.

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It also shows all the other wells completed in the Devonian in the Custer Field.

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This will give you an idea of the area we're talking about. And to bring us up to date, ARCO Oil and Gas Company has recently drilled and completed the ARCO Custer Wells No. 1 as a Devonian gas well.

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The surface location of the well is 1810 from the north and 2164 from the west of Section 6, Township 25 South, Range 37 East, Lea County, New Mexico.

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The well was perforated in the Devonian formation, 9435 to 9482 measured depth, and completed in January, 1982, after acidizing with 11,000 gallons.

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2 A calculated open flow potential of the  
3 well was 23.8 million cubic feet a day.

4 The attached Exhibit Two is a multipoint  
5 back pressure test for gas wells, showing the completion of  
6 this well. It gives the observed pressures and volumes.

7 The well was first drilled straight down  
8 and encountered the Woodford formation on the downthrown side  
9 of the fault. ARCO was granted permission to directionally  
10 drill the hole to a nonstandard location in the Devonian, so  
11 the well was plugged back to 6200 feet and sidetracked, re-  
12 sulting in successful completion mentioned above.

13 A hearing was held to set a limited  
14 allowable for the Custer Wells No. 1, resulting in an allow-  
15 able limit 93 percent.

16 Conoco requested a de novo hearing to  
17 appeal the ruling, but while awaiing the hearing, evidence  
18 was developed which proved to Conoco that the completion in  
19 Custer Wells No. 1 was not in the same reservoir that was  
20 being produced in Conoco Wells B-1 No. 5.

21 Accordingly, attorneys for the two  
22 companies have executed a stipulation agreeing that production  
23 from present perforations in ARCO Custer Wells No. 1 does  
24 not affect production from Conoco Wells B-1 No. 5, and Conoco  
25 waives objection to a full allowable for Custer Wells No. 1.

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2 MR. CARR: Mr. Stamets, a copy of the  
3 stipulation entered between Conoco and ARCO is attached to  
4 the exhibits and has been marked for purposes of identifica-  
5 tion as Exhibit Number Nine, and we will ask that it be in-  
6 cluded in the record of this hearing.

7 It does provide that Conoco waives ob-  
8 jection to production of the well without penalty and it also  
9 imposes certain conditions on ARCO concerning any efforts to  
10 complete the well in other Devonian horizons.

11 Q Now, Mr. Stokely, will you state brief-  
12 ly what ARCO is seeking with this application?

13 A. ARCO requests removal of the allowable  
14 penalty from its Custer Wells No. 1 and by virtue of the  
15 additional exhibits to follow, ARCO will seek to prove that  
16 the ARCO Custer Wells No. 1 is in a separate gas pool and  
17 requests that the Oil Conservation Commission grant ARCO an  
18 application for a new pool creation for the Custer Southeast  
19 Devonian Pool, to include Section 6, Township 25 South,  
20 Range 37 East, Lea County, New Mexico.

21 Exhibit Number Five is included and is  
22 an application for a new pool creation.

23 Exhibit Number Three, which you also  
24 have, is a log of the Custer Wells No. 1 with the formation  
25 tops and the perforations shown on the log.

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Q Mr. Stokely, will you now refer back to Exhibit Number One and review this exhibit for Mr. Stamets?

A Yes. If you will look at Exhibit Number One, you will see several wells there and you will notice some numbers written by the wells. These numbers are bottom hole pressures of the wells and the dates that those bottom hole pressures were taken.

Summarized, the original bottom hole pressure of this formation was when the Shell State B-36 No. 1 was drilled in 1975, and it showed a bottom hole pressure of 4278 pounds.

In March, 1980, Conoco Wells B No. 5 was drilled, and it showed a 3369 pound bottom hole pressure, showing that the reservoir had reduced in pressure with the production of gas.

Later, in June of 1981, Shell State B Community No. 2 was completed and its bottom hole pressure was 2818 pounds. This indicated that all these wells were connected together in the same reservoir and that as production was taken from the reservoir, the pressure dropped in all the wells.

And at the bottom -- I mean at the Custer Wells No. 1, in January, 1982, just last month, this well was completed with 4490 pounds per square inch of bottom

1  
2 hole pressure, which is higher than any pressure indicated  
3 at any time in the Custer Devonian Field.

4 This is pressure evidence that the two  
5 reservoirs are separate and not connected.

6 Q Will you now refer to what has been  
7 marked Exhibit Number Two and review this for the Examiner?

8 A Exhibit Number Two, the back point --  
9 multipoint back pressure test, shows the completion data on  
10 our well. It shows that it had a bottom hole -- I mean had  
11 a open flow potential of 438 -- 23.8 million cubic feet a  
12 day.

13 It shows the perforations, which I've  
14 pointed out on the log, and indicates that the well has been  
15 completed and tested and is ready to produce.

16 Q Will you now refer to Exhibit Number  
17 Four, which is the gas analysis, and review this for the  
18 Examiner?

19 A Exhibit Number Four is a collection of  
20 three pages stapled together, and it gives the gas analysis  
21 on the Custer Wells No. 1 and on the Devonian production  
22 from two of the other wells in the field.

23 You will notice in the lower righthand  
24 side of the page on each one, a red circle. This red circle  
25 indicates the hydrogen sulfide content, and it shows that the

1  
2 Custer Wells No. 1 was tested and found to have no hydrogen  
3 sulfide content. It was a sweet gas well.

4 Both of the other wells contained  
5 hydrogen sulfide, 40 grains of hydrogen sulfide in the  
6 Conoco Wells B-5 -- B-1 No. 5, and 60 grains in the Shell  
7 State B Com, and this should be No. 2, it was not No. 1,  
8 but since sour gas is being produced in all the wells from  
9 the Custer Devonian Field and sweet gas is being produced  
10 from the Custer Wells No. 1, it is evidence that they are  
11 coming from a separate reservoir.

12 Q Mr. Stokely, were Exhibits One through  
13 Five prepared by you or can you testify as to their accuracy?

14 A Yes.

15 MR. CARR: Mr. Stamets, at this time  
16 we would offer into evidence ARCO Exhibits One through Five.

17 MR. STAMETS: Exhibit Five is the Form  
18 C-123?

19 A Yes, sir.

20 MR. STAMETS: Yes, these exhibits will  
21 be admitted.

22 MR. CARR: We would also like to offer  
23 the stipulation that was entered between the companies,  
24 which is marked as Exhibit Number Nine, which is the last  
25 exhibit.

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2 MR. STAMETS: Yes, Exhibit Number Nine  
3 will also be admitted.

4 MR. CARR: And I have nothing further  
5 of this witness on direct.

6 MR. STAMETS: Are there any questions  
7 of this witness? He may be excused at this time. We may  
8 have some additional questions later.

9 MR. CARR: At this time I'd call Mr.  
10 E. R. Douglas.

11  
12 E. R. DOUGLAS  
13 being called as a witness and being duly sworn upon his oath,  
14 testified as follows, to-wit:

15  
16 DIRECT EXAMINATION

17 BY MR. CARR:

18 Q Will you state your name and place of  
19 residence?

20 A My name is E. R. Douglas and I reside  
21 in Midland, Texas.

22 Q By whom are you employed and in what  
23 capacity?

24 A I am a geologist for ARCO Oil and Gas  
25 Company, located in Midland.

Q Have you previously testified before this Commission or one of its Examiners and had your credentials accepted and made a matter of record?

A Yes, I have.

Q Are you familiar with the applications filed on behalf of ARCO in each of these cases?

A Yes, I am.

Q Are you familiar with the Custer Wells Well No. 1 and the surrounding acreage?

A Yes.

MR. CARR: Are the witness' qualifications acceptable?

MR. STAMETS: They are.

Q Mr. Douglas, will you refer to what has been marked for identification as ARCO Exhibit Number Six and review this for Mr. Stamets?

A Exhibit Number Six is a subsurface structure map of the Custer Field area, contoured on the top of the Devonian formation. The scale is one inch equal 1000 feet. The contour interval is 100 feet to the 7000 foot subsea contour and 500 feet below the 7000 foot subsea contour.

The map is supported by seismic work done in the area and conforms to the seismic interpretation.

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2 ARCO Custer Wells No. 1, drilled in the  
3 northwest quarter of Section 6, 25 South, 37 East, and  
4 drilled to a depth of 10,312 feet in the Woodford shale.  
5 The hole was sidetracked to the west to reach a point 1775  
6 feet from north and 1523 feet from west lines of Section 6,  
7 at a depth of 9450 feet in the Devonian. The vertical depth  
8 of the hole at the Devonian is 9350 feet, for a subsea depth  
9 of 6093 feet.

10 Exhibit Six shows the sidetracked hole  
11 to the west and the depth at which the Devonian was encountered.

12 At 9440 feet there was a gain of 150  
13 barrels of mud in seven minutes. The well was shut in and  
14 reopened on a 3/8ths inch choke. It flowed gas at a rate  
15 of 7-million cubic feet of gas per day.

16 After conditioning mud, drilling con-  
17 tinued with a total mud loss of 600 barrels in the Devonian.  
18 Drilling continued to a depth of 13,060 feet in the Simpson,  
19 and at this measured depth the vertical depth is 12,830 feet.  
20 A fish in the hole prevented drilling to the Ellenburger.  
21 The drilling ceased and the hole was plugged back to 9494  
22 feet to complete from the Devonian.

23 Exhibit Three is the electric log pre-  
24 viously introduced by Mr. Stokely, and this shows the Devon-  
25 ian at 9430 feet.

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2 Q Mr. Douglas, will you now refer to Ex-  
3 hibit Number Seven and review this for the Examiner?

4 A Exhibit Number Seven is an Insoluble  
5 Residue Report for the ARCO Custer Wells No. 1. This identi-  
6 fies the Devonian in the sidetracked hole between 9450 and  
7 9500 feet. The 20 foot difference in depth between samples  
8 of cuttings and the electric log depth is due to time re-  
9 quired for the cut samples to reach the surface.

10 Residue Research Laboratory of Midland,  
11 Texas, did the analysis.

12 Q Will you now review Exhibit Number  
13 Eight for the Examiner?

14 A Exhibit Number Eight is a cross section  
15 from west to east across the Custer Field structure. It  
16 shows the position of the ARCO Custer Wells No. 1 and the  
17 sidetracked hole to the structure.

18 The Devonian reservoir is colored in  
19 yellow. The reverse fault, thrust to the east, overrides  
20 the downthrown east block.

21 The section below the first Devonian  
22 was of normal sequence from the Mississippian to the Simpson.  
23 A dipmeter run in the original hole measured east dip of  
24 45 degrees in the Mississippian and Woodford sections.  
25 These dips are expected to grow steeper in the section ap-

1  
2 proaching the fault.

3 Due to the hole conditions at the time  
4 of logging the sidetracked hole, a dipmeter was not run to  
5 the total depth of the well.

6 The fault shown to the west displaces  
7 the formations about 200 feet. Other smaller faults possibly  
8 exist within the block that separate the Devonian reservoirs.  
9 The thrusting on the fault from west to east caused lesser  
10 faults in the uppermost part of the block.

11 The Devonian pay is a dolomite and  
12 chert section. The reservoir consists of secondary porosity  
13 and fracture porosity.

14 Q. What conclusions can you reach from the  
15 data you've presented?

16 A. It is a separate reservoir, as indi-  
17 cated by the structure map.

18 Q. Would approval of this application im-  
19 pair the correlative rights of any other operator in the  
20 area?

21 A. No.

22 Q. Is there any way that approval of this  
23 application could result in the waste of hydrocarbons?

24 A. No.

25 Q. By bottoming the well where you did,

1  
2 are you producing reserves that otherwise would not have  
3 been recovered?

4 A. Yes, we are. We are producing a separ-  
5 ate fault block in a separate reservoir. These would not  
6 have been recovered otherwise.

7 Q Were Exhibits Six through Eight pre-  
8 pared by you or can you testify as to their accuracy?

9 A. Yes.

10 MR. CARR: At this time, Mr. Stamets,  
11 we would offer ARCO Exhibits Six through Eight.

12 MR. STAMETS: These exhibits will be  
13 admitted.

14 MR. CARR: And that concludes my direct  
15 examination of this witness.

16 MR. STAMETS: Mr. Douglas, is the  
17 stipulation -- in the stipulation Conoco withdraws any ob-  
18 jection to your production at perforations between 9435 and  
19 9482 in the subject well. Is that a measured depth?

20 A. Yes, that is the measured depth of the  
21 hole.

22 Q Now, how, explain to me how this --  
23 how by the insoluble residue process you were able to deter-  
24 mine that you had penetrated another Devonian section.

25 A. The age determinations that we have

1  
2 available to us are usually based on paleontology or in-  
3 soluble residues.

4 Paleontology is the skeletal remains  
5 in the formation. In this case our lower sections in the  
6 Paleozoic do not have enough fossils to identify, so we use  
7 a method of insoluble residues, which means that the rock  
8 itself is reduced to those parts that will not dissolve.  
9 In other words, the carbonates are dissolved with acid, and  
10 those parts that remain are the telltale symbols of what  
11 that rock is.

12 So we have been able to make age deter-  
13 minations through an insoluble residue process of correlating  
14 between wells across the Permian Basin.

15 MR. STAMETS: Okay. Were any tests  
16 conducted in the second Devonian section penetrated in this  
17 well?

18 A. No, there were no tests done at all be-  
19 cause of the hole condition at the time.

20 MR. STAMETS: Do you have any indication  
21 based on logging or any other indications that might be  
22 productive?

23 A. It is possible that it could be pro-  
24 ductive and at this point we would not be able to say defi-  
25 nitely one way or the other. We did not have any significant

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shows while drilling through it.

MR. STAMETS: Even if it is productive, based on your analysis here, it's not connected with the old reservoir in any way, is it?

A. No. It is completely a separate block.

MR. STAMETS: Without drilling yet another sidetracked hole, is there any way that -- that ARCO could achieve production from the original Devonian reservoir in this Custer Wells well? And I'm speaking of --

A. No.

MR. STAMETS: -- the original Custer Devonian reservoir.

A. Yes.

No, I don't feel that we could have.

MR. STAMETS: The stipulation in this case requires that ARCO seek another order of the Oil Conservation Division before producing any other Devonian formation out of this well. Based on what I see here, that hardly seems necessary.

Is there any representative of Conoco here to --

MR. KELLAHIN: Yes, sir, it's necessary for the settlement, Mr. Stamets.

MR. STAMETS: Whether or not it's tech-

1  
2 nically required, as a matter of agreement it's required.

3 MR. KELLAHER: That's right, sir.

4 MR. CARR: And the idea is to be certain  
5 that once the penalty is waived in this producing horizon,  
6 that that isn't construed as a waiver of any other Devonian--  
7 of producing any other sand in the Devonian without at least  
8 giving Conoco the opportunity to come in and request that  
9 an appropriate penalty be imposed.

10 MR. STAMETS: Okay. I believe Mr.  
11 Stokely requested that the -- this new Devonian pool consist  
12 of the entire Section 6.

13 Based on the structural map, which is  
14 what ever exhibit that is, it would appear that the west  
15 half of Section 6 is more properly the boundary of this new  
16 reservoir.

17 MR. STOKELY: Of course, this is based  
18 on information which can't be proved. The only way you can  
19 prove this is by drilling the well and we have no objection  
20 to limiting it, but we used Section 6 since this is the  
21 section that we're working in. That's the only reason for  
22 defining it that way. We don't really have a good way to  
23 say this is the limit.

24 MR. STAMETS: Any other questions of  
25 either of these two witnesses? They may be excused.

1 Have these other exhibits been offered?

2 MR. CARR: If we didn't, we'd like to  
3 offer Six through Eight.  
4

5 MR. STAMETS: And if I didn't approve  
6 them, they are approved and admitted.

7 Anything further in this case?

8 MR. CARR: Nothing further.

9 MR. STAMETS: The case will be taken  
10 under advisement.

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12 (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 Conserva-  
tion 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 C.S.R.

I do hereby certify that the foregoing is  
a complete record of the proceedings in  
the Examiner hearing of Case No. 7480-7461  
heard by me on 2-17 1982.

Richard P. [Signature], Examiner  
Oil Conservation Division

SALLY W. BOYD, C.S.R.

Rt. 1 Box 191-B  
Santa Fe, New Mexico 87501  
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BRUCE KING  
GOVERNOR  
LARRY KEHOE  
SECRETARY

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

March 5, 1982

POST OFFICE BOX 2088  
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(505) 827-2434

Mr. William F. Carr  
Campbell, Byrd & Black  
Attorneys at Law  
Post Office Box 2209  
Santa Fe, New Mexico

Re: CASE NO. 7480  
ORDER NO. R-6914

Applicant:

ARCO Oil & Gas Company

Dear Sir:

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

Yours very truly,

  
JOE D. RAMEY  
Director

JDR/fd

Copy of order also sent to:

Hobbs OCD \_\_\_\_\_  
Artesia OCD \_\_\_\_\_  
Aztec OCD \_\_\_\_\_

Other \_\_\_\_\_

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
DIVISION FOR THE PURPOSE OF  
CONSIDERING:

CASE NO. 7480  
Order No. R-6914

APPLICATION OF ARCO OIL & GAS COMPANY  
FOR POOL CREATION, LEA COUNTY,  
NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on February 17, 1982, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 5th day of March, 1982, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

- (1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Arco Oil and Gas Company, seeks the creation of a new Upper Devonian gas pool for its Custer Wells Well No. 1 located 1810 feet from the North line and 2164 feet from the West line of Section 6, Township 25 South, Range 37 East, Custer Field, Lea County, New Mexico.
- (3) That said Custer Wells Well No. 1 has discovered a separate common source of supply in the Devonian formation in an isolated fault block at a measured depth of 9435 feet to 9482 feet in the side tracked hole.
- (4) That a new gas pool for Devonian production should be created and designated the East Custer-Devonian Gas Pool, Lea County, New Mexico, with vertical limits to include the Devonian formation (within the same fault block) and horizontal limits to include:

-2-

Case No. 7480  
Order No. R-6914

TOWNSHIP 25 SOUTH, RANGE 37 EAST, NMPM  
Section 6: W/2

(5) That the effective date of this order and of the pool creation contained herein should be February 1, 1982.

IT IS THEREFORE ORDERED:

(1) That effective February 1, 1982, a new gas pool for Devonian production is hereby created and designated the East Custer-Devonian Gas Pool, Lea County, New Mexico, with horizontal limits to include:

TOWNSHIP 25 SOUTH, RANGE 37 EAST, NMPM  
Section 6: W/2

(2) That the vertical limits of the East Custer-Devonian Gas Pool shall be the Devonian formation where such formation is located within the same fault block as the Arco Oil and Gas Company Custer Wells Well No. 1 completed at a measured vertical depth of from 9435 feet to 9482 feet in the side tracked hole in Unit F of said Section 6.

(3) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinafter designated.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

  
  
JOE D. RAMEY,  
Director

NEW MEXICO OIL CONSERVATION COMMISSION  
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form O-122  
Revised 4-1-69

Type Test <input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special		Test Date 1-11-82	
Company ARCO Oil and Gas Company		Connector	
Prod. Undesignated		Formation Devonian	
Completion Date 1-7-82		Total Depth 12964	Plug Back TD 9594
Elevation 3239.1' GR		Farm or Lease Name Custer Wells	
Csg. Size 7"	26	Set At 12651	Perforations From 9435 To 9482
Trq. Size 2.875	6.5	Set At 9412	Perforations From Open To Ended
Type Well - Single - Intensive - G.C. or G.O. Multiple Single		Pressure Set At 9381	County Lea
Producing Time Tbg.	Reservoir Temp. °F 145 @ 12620	Mean Annual Temp. °F 60	Baro. Press. - P <sub>o</sub> 13.2
L 9412	H 9412	G <sub>g</sub> .7334	% CO <sub>2</sub> .87
		% N <sub>2</sub> .85	% H <sub>2</sub> S 0
Prover		Meter Run 4"	Taps Flg.

FLOW DATA					TUBING DATA		CASING DATA		Duration of Flow		
NO.	Prover Line Size	λ	Orifice Size	Press. p.s.i.g.	D.H. h <sub>w</sub>	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI							2335		Pkr.		91.5 Hrs.
1.	4 x 2.250			380	15.0	116	2258	55	Pkr.		1 Hr.
2.	4 x 2.250			378	40.0	99	2198	56	Pkr.		1 Hr.
3.	4 x 2.250			500	70.0	80	2102	59	Pkr.		1 Hr.
4.	4 x 2.250			755	86.0	83	1840	50	Pkr.		1 Hr.
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P <sub>m</sub>	Flow Temp. Factor F <sub>t</sub>	Gravity Factor F <sub>g</sub>	Super. Comp. Factor, F <sub>sp</sub>	Rate of Flow Q, Mcfd
1.	25.64	76.80	393.2	.9501	1.168	1.036	2263.9
2.	25.64	125.09	391.2	.9645	1.168	1.039	3754.1
3.	25.64	189.53	513.2	.9813	1.168	1.060	5904.0
4.	25.64	241.62	768.2	.9786	1.168	1.088	7704.2
5.							

NO.	R	Temp. °R	T <sub>r</sub>	Z	Gas Liquid Hydrocarbon Ratio	Mcf/cbl.
					9.5	
					A.P.L. Gravity of Liquid Hydrocarbons 59 @ 60°	Deg.
1.	.59	576	1.45	.932	Specific Gravity Separator Gas	XXXXXXXXXX
2.	.58	559	1.41	.927	Specific Gravity Flowing Fluid	XXXXXX
3.	.76	540	1.36	.890	Critical Pressure	671 P.S.I.A.
4.	1.14	543	1.37	.845	Critical Temperature	397 °R
5.						

NO.	P <sub>i</sub> <sup>2</sup>	ΔP <sub>w</sub>	P <sub>w</sub> <sup>2</sup>	P <sub>i</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup>
1.	3155.2	19955.3	260.4	
2.	3102.2	9623.6	592.1	
3.	3010.2	9061.3	1154.4	
4.	2894.2	8376.4	1839.3	
5.				

(1)  $\frac{P_i^2}{P_i^2 - P_w^2} = 5.554$

(2)  $\left[ \frac{P_i^2}{P_i^2 - P_w^2} \right]^n = 3.100$

AOF = Q  $\left[ \frac{P_i^2}{P_i^2 - P_w^2} \right]^n = 23,887.7$

\* P<sub>i</sub> 3196.2    P<sub>w</sub><sup>2</sup> 10215.7

Absolute Open Flow	23,887.7	Mcf @ 15.025	Angle of Slope @ 56° 34.5'	Slope, n .660
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Remarks: \*BHP at mid-point of perforations 9458  
via bottom hole pressure bomb. Prod. 86 BO and 10 BW.

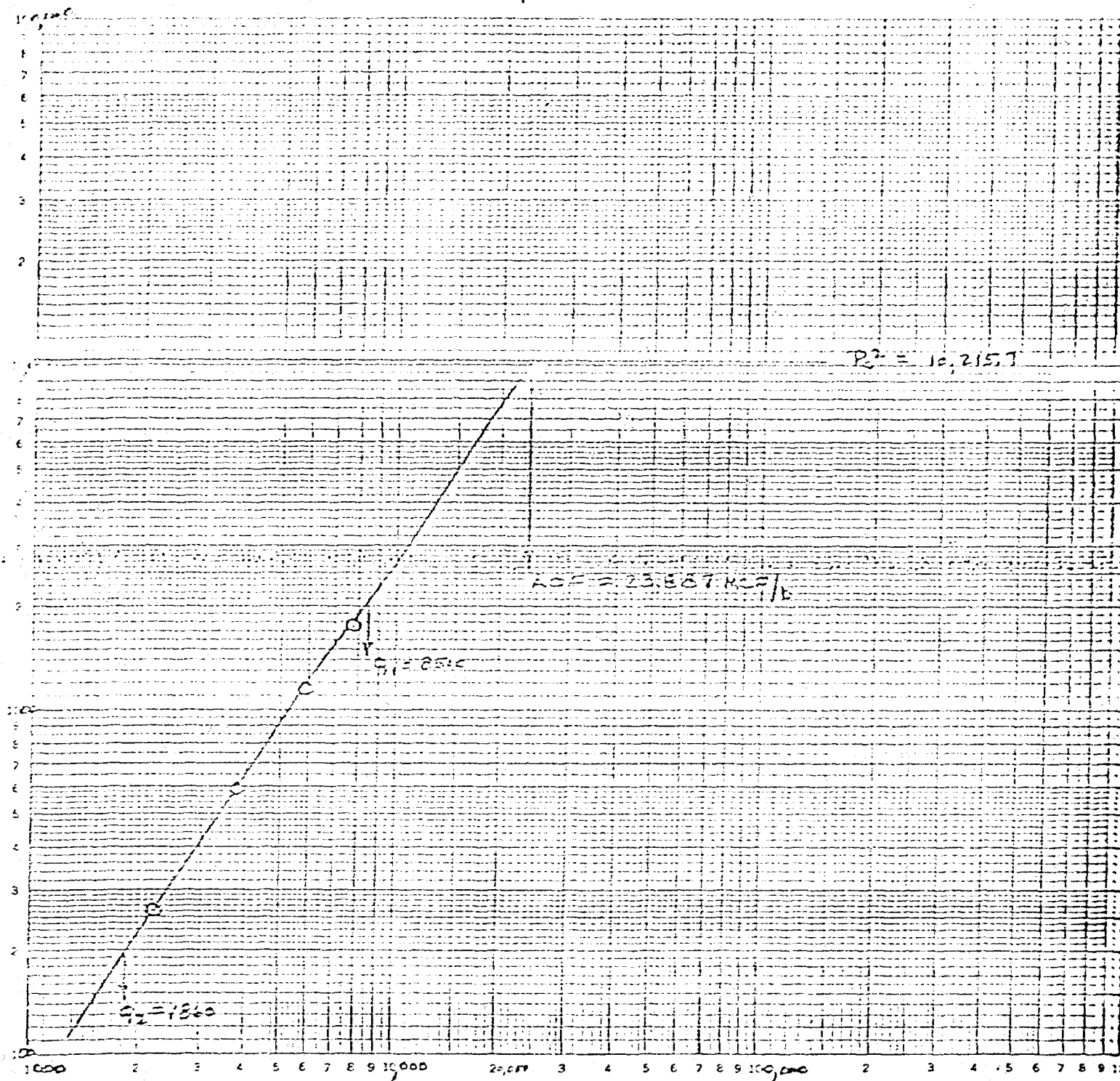
  

Approved By Company	Conducted By	Calculated By	Checked By
	J. D. Cogburn	T.D. McCallister	J. V. Curfew

ARCO OIL & GAS Co.  
 CLUSTER WELLS #1  
 UNIT F, Sec. 6, T25S, R37E  
 LEA COUNTY  
 JANUARY 11, 1982

W.P. 7403

LOGARITHMIC SCALE  
 REGULATION CO. 100-1000



$Q \text{ (MCF/D)}$

$$\log Q = 3.9294189$$

$$\log Q_2 = 3.2695129$$

$$n = 0.659059$$

# NEW-TEX LAB

P. O. BOX 1161  
HOBBS, N.M. 88240

No. 6926  
Run No.  
Date of Run 12-12-82  
Date Secured 12-12-82

## CERTIFICATE OF ANALYSIS

A Sample of CUSTOMER WELL #1  
Secured from \_\_\_\_\_  
A \_\_\_\_\_ Secured by \_\_\_\_\_  
Time \_\_\_\_\_ Date \_\_\_\_\_  
Sampling conditions \_\_\_\_\_ Press \_\_\_\_\_  
Temp. \_\_\_\_\_

### FRACTIONAL ANALYSIS

#### Percentage Composition

	MOL %	LIQ. %	G.P.M.
Carbon Dioxide	.822		
Air	1.682		
Nitrogen			
Oxygen			
Hydrogen sulfide			
Hydrodes			
Methane	85.164		
Ethane	7.671	2.009	
Propane	3.035	.733	
Butanes			
Isobutane	.353	.107	
N-Butane	.035	.011	
Pentanes			
Isopentane	.191	.070	
N-Pentane	.276	.100	
Hexanes	.179	.073	
Heptanes	.300	.138	
Octanes			
TOTAL	100.000	3.663	

Calc. Sp. Gr. — 0.675  
Calc. A.P.I. —  
Calc. Vapor Press — PSIA  
Sp. Gr. —  
Mol. Wt. — 12.57

#### LIQUID CONTENT (GAL/MCF)

Propane Calc. G.P.M. 833  
Butanes Calc. G.P.M. 060  
Pentanes Plus. G.P.M. 321  
Ethane Calc. G.P.M. 2.009  
RVP Gasoline G.P.M.  
B.T.U./Cu. Ft. @ 14.696 P.S.I.A.  
Dry Basis 1158  
Wet Basis 1137  
Sulfur Analysis by Titration  
Gr./100 Cu. Ft.  
Hydrogen Sulfide NONE DETECTED  
Mercaptans  
Sulfides  
Residual Sulfur  
Total Sulfur

Run by [Signature] Checked by \_\_\_\_\_ Approved by \_\_\_\_\_

#### Additional Data and Remarks

# NEW-TEX LAB

P.O. BOX 1161  
HOBBS, N.M. 88240

## CERTIFICATE OF ANALYSIS

A Sample of  
Secured from

*Guano - Wells "B" #1*

At

Secured by

Time

Date

Sampling conditions

Press

Temp

## FRACTIONAL ANALYSIS

### Percentage Composition

MOL %

WGT %

G.P.M.

Carbon Dioxide

*7.50*

Air

*1.160*

Nitrogen

Oxygen

Hydrogen sulfide

Hydrogen

Methane

*85.619*

Ethane

*7.067*

*1.991*

Propane

*2.760*

*.785*

Butanes

*2.90*

*.076*

Iso-Butane

*.999*

*.651*

Pentanes

*.216*

*.077*

Iso-Pentane

*.305*

*.110*

N-Pentane

*.226*

*.093*

Hexanes

*.279*

*.128*

Heptanes

Octanes

TOTAL

*100.000*

*3.531*

Calc. Sp. Gr.

*0.6625*

Calc. A.P.I.

Calc. Vapor Press.

PSIA

Sp. Gr.

Mol. Wt.

*19.37*

### LIQUID CONTENT (GAL/MCF)

Propane Calc. G.P.M.

*.785*

Butanes Calc. G.P.M.

*.347*

Pentanes Plus. G.P.M.

*.408*

Ethane Calc. G.P.M.

*1.991*

RVP Gasoline G.P.M.

B.T.U./Cu. Ft. @ 14.696 P.S.I.A.

Dry Basis

Wet Basis

*1152*

*1132*

Sulfur Analysis by Titration

Gr./100 Cu. Ft.

Hydrogen Sulfide

Mercaptans

Sulfides

Residual Sulfur

Total Sulfur

*40 Grains H<sub>2</sub>S*

*632 PPM*

*0.0632 Mol %*

Run by

Checked by

Approved by

### Additional Data and Remarks

NEW-TEX  
LAB  
P. O. BOX 1161  
HOBBES, N.M. 87406

1116 No. 1 Fuel Oil - 60000 Bbls #1

COPIES TO: 2 Bbls - 60000 Bbls #1

J. T. WALKER  
E. STANLEY  
D. FARRIS  
J. GUY

6428  
Run No.  
Date of Run 1-13-82  
Date Secured 1-13-82

### CERTIFICATE OF ANALYSIS

A Sample of  
Secured from  
A:

Amco

\*Secured by  
Time

Date

Sampling conditions

Press

Temp

### FRACTIONAL ANALYSIS

#### Percentage Composition

MOL % LIQ. % G.P.M.

Carbon Dioxide	.771	
Air		
Nitrogen	1.205	
Oxygen		
Hydrogen sulfide		
Hydrogen		
Methane	87.468	
Ethane	6.516	1.738
Propane	2.203	.605
Butanes		
Iso-Butane	.259	.084
N-Butane	.681	.215
Pentanes		
Iso-Pentane	.164	.060
N-Pentane	.237	.096
Hexanes	.171	.070
Heptanes	.323	.149
Octanes		3.009
TOTAL	100.000	

Calc. Sp. Gr. — 0.6533

Calc. A.P.I. —

Calc. Vapor Press. —

PSIA

Sp. Gr.

Mol. Wt.

18.95

#### LIQUID CONTENT (GAL./MCF)

Propane Calc. G.P.M.

.605

Butanes Calc. G.P.M.

.299

Pentanes Plus. G.P.M.

.365

Ethane Calc. G.P.M.

1.738

RVP Gasoline G.P.M.

B.T.U./Cu. Ft. @ 14.696 P.S.I.A.

Dry Basis

1127

Wet Basis

1107

Sulfur Analysis by Titration

Gr./100 Cu. Ft.

Hydrogen Sulfide

Mercaptans

Sulfides

Residual Sulfur

Total Sulfur

60 grains H<sub>2</sub>S

Run by

R. R. H.

Checked by

D. S. Simpson

Approved by

Additional Data and Remarks

BEFORE EXAMINER STAMETS  
OIL CONSERVATION DIVISION

2000 EXHIBIT NO. 4

CASE NO. 7480-7481

Submitted by STOKELY

Hearing Date 2/17/82

# REQUEST FOR THE EXTENSION OF AN EXISTING POOL

OR

# THE CREATION OF A NEW POOL

TO: The Oil Conservation Commission  
 State of New Mexico

Date: January 21, 1982

The ARCO Oil & Gas Company Custer Wells  
 Name of Operator Name of Lease

1 Located 1810 feet from the North line and 2164 feet  
 Well No.

from the West line of 6 25S 37E  
 Section Township Range

is outside the boundaries of any pool producing from the same formation. On the basis of the information submitted here-  
 with on form C-105, we hereby request that the  
 pool be extended to include the following described area.

or that a new pool be created to include the following described area Section 6, T-25-S, R-37-E

Suggested name: Custer Southeast Devonian

ARCO Oil & Gas Company  
 Operator

Name of Producing Formation: Devonian

B. L. Stokely B. L. Stokely  
 Representative

BEFORE EXAMINER STAMETS	
OIL CONSERVATION DIVISION	
<u>ARCO</u> EXHIBIT NO.	<u>5</u>
CASE NO.	<u>7480-7481</u>
Submitted by	<u>STOKELY</u>
Hearing Date	<u>2/17/82</u>

## RESIDUE RESEARCH LABORATORY

2405 W. INDIANA  
MIDLAND, TEXAS 79701

## INSOLUBLE RESIDUE REPORT

FILE NO.

SECTION	TWN.	RGE.	BLOCK	SURVEY	ELEV.	STATE	COUNTY
6	25-S	37-E			NR	NEW MEXICO	LEA
FOOTAGE.							
1810 FNL & 2164 FNL.							
ISSUED FOR CONFIDENTIAL USE					COMPANY	WELL	FARM
					ATLANTIC RICHFIELD	# 1	CUSTER WELLS

## SECTION EXAMINED:

Orig. Hole: 9200-10330  
skip: 9600-9700:9710-9770  
Side Track Hole: 9200-13060

## TOPS AND CORRELATIONS:

Samples began in PENNSYLVANIAN Shale ----- 9200  
T. BARNETT ----- 9400  
T. MISSISSIPPIAN Lime ----- 9540  
T. WOODFORD ----- 10250

## SIDE TRACK HOLE

Samples began in BARNETT ----- 9200  
T. MISSISSIPPIAN Lime ----- 9280  
B. MISSISSIPPIAN LIME -T. DEVONIAN ----- 9450  
B. 2nd BARNETT ----- 9500  
T. MISSISSIPPIAN Lime -(2nd) ----- 9530  
T. WOODFORD ----- 9740  
T. 2nd DEVONIAN ----- 10170  
T. "UPPER SILURIAN" ----- 10270  
Dolomite ----- 10740-10770  
T. FUSSELMAN ----- 10970  
T. MONTOYA ----- 11560  
T. SIMPSON ----- 12030

## SPECIAL NOTES:

T. Tulip Creek ----- 12170  
T. McKee ----- 12700  
T. McLish ----- 12930

BEFORE EXAMINER STAMETS  
OIL CONSERVATION DIVISION

A200 EXHIBIT NO. 7

CASE NO. 7480-7481

Submitted by W DOUGLAS

Hearing Date 2/17/83

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
DIVISION FOR THE PURPOSE OF  
CONSIDERING:

Case 7304

APPLICATION OF ARCO OIL AND GAS  
COMPANY FOR DIRECTIONAL DRILLING  
AND AN UNORTHODOX GAS WELL LOCATION,  
LEA COUNTY, NEW MEXICO.

STIPULATION OF SETTLEMENT

Come now Arco Oil and Gas Company, the applicant herein,  
and Conoco, the offset operator and an affected party herein,  
and by and through their respective attorneys stipulate and  
agree as follows:

1. That Arco Oil and Gas Company has applied for and  
obtained New Mexico Oil Conservation Division Order R-6792  
which approves for its Custer Wells Well No. 1, an unorthodox  
location and directional drilling, plus a penalty for Devonian  
production from this well.
2. That Conoco is the offset operator of the Conoco  
Wells Federal B-1 Well No. 5, completed and producing from  
the Devonian formation.
3. That the subject order provides for a penalty factor  
on the Arco well for its Devonian production.
4. Subsequent to the Order, Arco drilled, completed,  
and perforated its well from 9435 feet to 9482 feet.

BEFORE EXAMINER STAMETS  
OIL CONSERVATION DIVISION

~~ARCO~~ EXHIBIT NO. 9

CASE NO. 9480-7481

Submitted by \_\_\_\_\_

Hearing Date 2/17/82

5. Based upon information supplied by Arco, it is stipulated and agreed that the perforations from 9435 feet to 9482 feet in the Arco well have encountered a different gas reservoir from that being produced by the Conoco well which has perforations from 9756 feet to 9776 feet.

6. That Conoco hereby withdraws its opposition to Arco producing the Arco Custer Wells Well No. 1 at perforations between 9435 to 9482 feet.

7. That in order to protect the correlative rights of Conoco, Arco Oil and Gas Company agrees that it will not produce its Custer Wells Well No. 1 from any perforations in the Devonian formation other than the present perforations without first obtaining an order from the Oil Conservation Division approving such production. Arco agrees to give Conoco written notice by certified mail of any hearing in which it seeks Oil Conservation Division approval for production from additional perforations in the Devonian formation in the Custer Wells Well No. 1.

Agreed this 29<sup>th</sup> day of January, 1962.

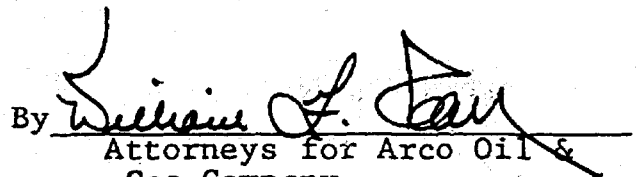
KELLAHIN & KELLAHIN

By

  
Attorneys for Conoco, Inc.

CAMPBELL, BYRD & BLACK, P.A.

By

  
Attorneys for Arco Oil &  
Gas Company

Dockets Nos. 7-82 and 8-82 are tentatively set for March 3 and March 17, 1982. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - FEBRUARY 17, 1982

9 A.M. - OIL CONSERVATION DIVISION CONFERENCE ROOM  
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Richard L. Stamets, Examiner, or Daniel S. Nutter, Alternate Examiner:

- ALLOWABLE:**
- (1) Consideration of the allowable production of gas for March, 1982, from fifteen prorated pools in Lea, Eddy, and Chaves Counties, New Mexico.
  - (2) Consideration of the allowable production of gas for March, 1982, from four prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico.
  - (3) Consideration of purchaser's nominations for the one year period beginning April 1, 1982, for both of the above areas.

**CASE 7445:** (Continued from December 16, 1981, Examiner Hearing)  
(THIS CASE WILL BE CONTINUED TO THE EXAMINER HEARING ON MARCH 17, 1982)

Application of Harvey E. Yates Company for an NGPA determination, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks a new onshore reservoir determination in the San Andres formation for its Fulton Collier Well No. 1 in Unit G of Section 1, Township 18 South, Range 28 East.

**CASE 7479:** Application of Northwest Pipeline Corporation for amendment of Order No. R-2046, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks the Amendment of Division Order No. R-2046, which authorized approval of six non-standard proration units, Basin-Dakota Gas Pool.

The amendment sought is for the creation of the following non-standard proration units to be drilled at standard locations thereon: Township 31 North, Range 6 West, Section 25: N/2 (272.16 acres) and S/2 (273.3 acres); Section 36: N/2 (272.56 acres) and S/2 (272.88 acres); Township 30 North, Range 6 West; Section 1: N/2 (272.81 acres) and S/2 (273.49 acres).

**CASE 7480:** Application of Arco Oil & Gas Company for pool creation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Upper Devonian gas pool for its Custer Well No. 1 located 1810 feet from the North line and 2164 feet from the West line of Section 6, Township 25 South, Range 37 East, Custer Field.

**CASE 7481:** Application of Arco Oil & Gas Company for amendment of Order No. R-6792, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Division Order No. R-6792, which authorized the directional drilling of applicant's Custer Wells Well No. 1 to an unorthodox location in the Devonian and Ellenburger formations and imposed a penalty in the Devonian. By stipulation applicant and the offset operator have agreed that the subject well is not affecting the offsetting property and applicant herein seeks removal of the penalty imposed for so long as the well produces only from the present perforated interval in the Upper Devonian.

**CASE 7459:** (Continued from January 20, 1982, Examiner Hearing)

Application of Red Mountain Associates for the Amendment of Order No. R-6538, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-6538, which authorized applicant to conduct waterflood operations in the Chaco Wash-Mesa Verde Oil Pool. Applicant seeks approval for the injection of water through various other wells than those originally approved, seeks deletion of the requirement for packers in injection wells, and seeks an increase in the previously authorized 68-pound limitation on injection pressure.

**CASE 7410:** (Continued from January 20, 1982, Examiner Hearing)

Application of B.O.A. Oil & Gas Company for two unorthodox oil well locations, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of a well to be drilled 2035 feet from the South line and 2455 feet from the East line and one to be drilled 2455 feet from the North line and 1944 feet from the East line, both in Section 31, Township 31 North, Range 15 West, Verde-Gallup Oil Pool, the NW/4 SE/4 and SW/4 NE/4, respectively, of said Section 31 to be dedicated to said wells.

EXAMINER HEARING - WEDNESDAY - FEBRUARY 17, 1982

CASE 7457: (Continued from January 20, 1982, Examiner Hearing)

Application of E. T. Ross for nine non-standard gas proration units, Harding County, New Mexico. Applicant, in the above-styled cause, seeks approval for nine 40-acre non-standard gas proration units in the Prater-Lane Carbon Dioxide Area. In Township 19 North, Range 30 East: Section 12, the NW/4 NW/4 and NE/4 NW/4; Section 14, the NW/4 NE/4, SW/4 NE/4, and SE/4 NE/4. In Township 20 North, Range 30 East: Section 11, the NE/4 SW/4, SW/4 SE/4, SE/4 SW/4, and NW/4 SE/4.

CASE 7482: Application of Wiser Oil Company for an unorthodox oil well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox location 1295 feet from the South line and 1345 feet from the West line of Section 32, Township 21 South, Range 37 East, Penrose-Skelly Pool.CASE 7483: Application of Adams Exploration Company for salt water disposal, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the San Andres formation in the perforated interval from 4176 feet to 4293 feet in its Griffin Well No. 4 located in Unit A, of Section 10, Township 8 South, Range 32 East, Chaveroo-San Andres Pool.CASE 7462: (Continued from February 3, 1982, Examiner Hearing)

Application of Marathon Oil Company for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of the Drinkard and Blinbry production in the wellbore of its C. J. Saunders Well No. 3, located in Unit C of Section 1, Township 22 South, Range 36 East.

CASE 7474: (Continued from February 3, 1982, Examiner Hearing)

Application of Union Oil Company of California for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Strawn, Atoka and Morrow formations underlying the E/2 of Section 25, Township 19 South, Range 33 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7484: Application of Anadarko Production Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Atoka and Morrow formations underlying the E/2 of Section 1, Township 19 South, Range 25 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.CASE 7485: Application of Berge Exploration for compulsory pooling, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Abo formation underlying two 160-acre proration units, the first being the NW/4 and the second being the SW/4 of Section 27, Township 7 South, Range 26 East, each to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said wells and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the wells and a charge for risk involved in drilling said wells.CASE 7486: Application of MGF Oil Corporation for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests down through and including the Abo formation underlying the NE/4 NE/4 of Section 6, Township 20 South, Range 39 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well.CASE 7487: Application of MGF Oil Corporation for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests down through and including the Abo formation underlying the SE/4 SE/4 of Section 31, Township 19 South, Range 39 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well.

**CASE 7488:** Application of Burkhart Petroleum Company for compulsory pooling, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the San Andres formation underlying the SW/4 NW/4 of Section 13, Township 8 South, Range 37 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well.

**CASE 7073:** (Reopened and Readvertised)

In the matter of Case 7073 being reopened pursuant to the provisions of Order No. R-6558, which order promulgated special rules for the South Elkins-Fusselman Pool in Chaves County including provisions for 80-acre spacing units and a limiting gas-oil ratio of 3000 to one. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing units with a limiting gas-oil ratio of 2000 to one.

**CASE 7074:** (Reopened and Readvertised)

In the matter of Case 7074 being reopened pursuant to the provisions of Orders Nos. R-6565 and R-6565-B, which created the South Elkins-Fusselman Gas Pool in Chaves County. All interested parties may appear and present evidence as to the exact nature of the reservoir, and more particularly, as to the proper rate of withdrawal from the reservoir if it is determined that said pool is producing from a retrograde gas condensate reservoir.

**CASE 6373:** (Reopened and Readvertised)

In the matter of Case 6373 being reopened pursuant to the provisions of Orders Nos. R-5875 and R-5875-A, which created the East High Hope - Abo Gas pool in Eddy County, and promulgated special rules therefor, including a provision for 320-acre spacing units. All interested parties may appear and show cause why said pool should not be developed on 160-acre spacing units.

**CASE 7489:** Application of Curtis J. Little for designation of a tight formation, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks the designation of the Chacra formation underlying portions of Township 25 North, Range 6 West, containing 6,720 acres, more or less, as a tight formation pursuant to Section 107 of the Natural Gas Policy Act and 18 CFR Section 271.701-705.

**CASE 7490:** Application of Harvey E. Yates Company for compulsory pooling, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests down through and including the Atoka-Morrow formation, underlying the N/2 of Section 19, Township 8 South, Range 30 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well.

**CASE 7491:** Application of Harvey E. Yates Company for designation of a tight formation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the designation of the Atoka formation underlying portions of Townships 12, 13, and 14 South, Ranges 35 and 36 East, containing 46,720 acres, more or less, as a tight formation pursuant to Section 107 of the Natural Gas Policy Act and 18 CFR Section 271.701-705, said area being an eastward and westward extension of previously approved tight formation area.

**CASE 7492:** Application of Harvey E. Yates Company for designation of a tight formation, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks the designation of the Atoka-Morrow formation underlying all or portions of Townships 7, 8, and 9 South, Ranges 29, 30, and 31 East, containing 115,200 acres, more or less, as a tight formation pursuant to Section 107 of the Natural Gas Policy Act and 18 CFR Section 271.701-705.

**CASE 7493:** In the matter of the hearing called by the Oil Conservation Division on its own motion for an order creating and extending certain pools in Chaves, Eddy, Lea, and Roosevelt Counties, New Mexico.

(a) CREATE a new pool in Lea County, New Mexico, classified as a gas pool for Morrow production and designated as the East Bootleg Ridge-Morrow Gas Pool. The discovery well is Getty Oil Company Getty 15 Federal Well No. 1 located in Unit J of Section 15, Township 22 South, Range 33 East, NNPM. Said Pool would comprise:

TOWNSHIP 22 SOUTH, RANGE 33 EAST, NNPM  
Section 15: S/2

(b) CREATE a new pool in Lea County, New Mexico, classified as an oil pool for Devonian production and designated as the North King-Devonian Pool. The discovery well is Samadan Oil Corporation Speight Well No. 1 located in Unit B of Section 1, Township 13 South, Range 37 East, NMPM. Said pool would comprise:

TOWNSHIP 13 SOUTH, RANGE 37 EAST, NMPM  
Section 1: NE/4

(c) CREATE a new pool in Eddy County, New Mexico, classified as a gas pool for Atoka production and designated as the North Loving-Atoka Gas Pool. The discovery well is Gulf Oil Corporation Eddy GR State Well No. 1 located in Unit E of Section 16, Township 23 South, Range 28 East, NMPM. Said pool would comprise:

TOWNSHIP 23 SOUTH, RANGE 27 EAST, NMPM  
Section 12: N/2

TOWNSHIP 23 SOUTH, RANGE 28 EAST, NMPM  
Section 4: S/2  
Section 7: All  
Section 8: All  
Section 9: All  
Section 16: All  
Section 17: All  
Section 18: E/2

(d) CREATE a new pool in Lea County, New Mexico, classified as an oil pool for Drinkard production and designated as the Teague-Drinkard Pool. The discovery well is Alpha Twenty-One Production Company Lea Well No. 1 located in Unit B of Section 17, Township 23 South, Range 37 East, NMPM. Said pool would comprise:

TOWNSHIP 23 SOUTH, RANGE 37 EAST, NMPM  
Section 17: NE/4

(e) EXTEND the West Atoka-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 25 EAST, NMPM  
Section 23: All  
Section 24: W/2

(f) EXTEND the Atoka-Pennsylvanian Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 26 EAST, NMPM  
Section 16: W/2

(g) EXTEND the Avalon-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 21 SOUTH, RANGE 26 EAST, NMPM  
Section 2: Lots 1 through 8

(h) EXTEND the Brunson-Fusselman Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM  
Section 5: SE/4

(i) EXTEND the BrushyDraw-Delaware Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 26 SOUTH, RANGE 29 EAST, NMPM  
Section 26: E/2

(j) EXTEND the Buffalo Valley-Pennsylvanian Gas Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 15 SOUTH, RANGE 27 EAST, NMPM  
Section 23: All  
Section 26: All

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EXAMINER HEARING - WEDNESDAY - FEBRUARY 17, 1982

(k) EXTEND the Cary-Montoya Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 17 EAST, NMPM  
Section 4: W/2 SW/4  
Section 5: SE/4  
Section 9: W/2 W/2

(l) EXTEND the Crow Flats-Morrow Gas Pool in Eddy County, New Mexico to include therein:

TOWNSHIP 16 SOUTH, RANGE 27 EAST, NMPM  
Section 35: E/2  
Section 36: W/2

(m) EXTEND the South Culebra Bluff-Bone Spring Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 23 SOUTH, RANGE 28 EAST, NMPM  
Section 25: S/2 SW/4  
Section 27: SW/4

(n) EXTEND the Elkins-San Andres Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 7 SOUTH, RANGE 28 EAST, NMPM  
Section 21: NE/4

(o) EXTEND the Empire-Abo Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 29 EAST, NMPM  
Section 19: S/2 SW/4

(p) EXTEND the Henshaw-Queen Grayburg-San Andres Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 16 SOUTH, RANGE 31 EAST, NMPM  
Section 19: NE/4 NW/4

(q) EXTEND the Indian Flats-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 21 SOUTH, RANGE 28 EAST, NMPM  
Section 26: W/2

(r) EXTEND the West Madine-Blinbry Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM  
Section 8: NW/4

(s) EXTEND the Peterson-Mississippian Pool in Roosevelt County, New Mexico, to include therein:

TOWNSHIP 4 SOUTH, RANGE 33 EAST, NMPM  
Section 28: NW/4

(t) EXTEND the Race Track-San Andres Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 10 SOUTH, RANGE 28 EAST, NMPM  
Section 7: S/2 SW/4  
Section 18: NW/4 and N/2 SW/4 and SW/4 SW/4

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EXAMINER HEARING - WEDNESDAY - FEBRUARY 17, 1982

(u) EXTEND the Railroad Mountain-San Andres Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 8 SOUTH, RANGE 28 EAST, NMPM  
Section 2: NE/4 and E/2 NW/4

(v) EXTEND the Red Lake-Queen-Grayburg-San Andres Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 28 EAST, NMPM  
Section 7: S/2  
Section 8: SW/4  
Section 18: E/2 NW/4

(w) EXTEND THE West Sawyer-San Andres Pool in Lee County, New Mexico, to include therein:

TOWNSHIP 10 SOUTH, RANGE 37 EAST, NMPM  
Section 5: SW/4

(x) EXTEND the Turkey Track-Atoka Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 29 EAST, NMPM  
Section 15: All

(y) EXTEND the Twin Lakes-San Andres Associated Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 8 SOUTH, RANGE 28 EAST, NMPM  
Section 13: SE/4  
Section 24: NE/4

TOWNSHIP 9 SOUTH, RANGE 28 EAST, NMPM  
Section 12: S/2 NE/4

TOWNSHIP 9 SOUTH, RANGE 29 EAST, NMPM  
Section 7: S/2  
Section 8: NW/4

CAMPBELL, BYRD & BLACK, P.A.  
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January 26, 1982

Mr. Joe D. Ramey  
Division Director  
Oil Conservation Division  
New Mexico Department of  
Energy and Minerals  
Post Office Box 2088  
Santa Fe, New Mexico 87501

*Case 7480*

Re: Application of Arco Oil & Gas Company for  
Pool Creation, Lea County, New Mexico

Dear Mr. Ramey:

Enclosed in triplicate is the application of Arco Oil &  
Gas Company in the above-referenced matter.

The applicant requests that this matter be included on the  
docket for the examiner hearing scheduled to be held on  
February 17, 1982.

Very truly yours,



William F. Carr

WFC:lr

Enclosures

cc: Mr. Horace N. Burton  
Mr. Ben Stokely

BEFORE THE  
OIL CONSERVATION DIVISION  
NEW MEXICO DEPARTMENT OF ENERGY AND MINERALS

IN THE MATTER OF THE APPLICATION  
OF ARCO OIL & GAS COMPANY FOR  
POOL CREATION, LEA COUNTY,  
NEW MEXICO.

CASE 7480

APPLICATION

Comes now ARCO OIL & GAS COMPANY, by and through its undersigned attorneys and hereby makes application for an order designating a new pool as a result of the discovery of hydrocarbons in the Upper Devonian formation in its Custer Wells Well No. 1, located 1810 feet from the North line and 2164 feet from the West line of Section 6, Township 25 South, Range 37 East, Custer Field, Lea County, New Mexico, and in support of this application would show the Division:

1. That applicant has recently completed its Custer Wells Well No. 1 in the Upper Devonian formation capable of producing oil and gas in paying quantities at a bottom hole location 1775 feet from the North line and 1523 feet from the West line of Section 6, Township 25 South, Range 37 East, Custer Field, Lea County, New Mexico.
2. Said well is producing through perforations from 9435 feet to 9482 feet and was potentialized as capable of producing 258 barrels of oil per day and 8.7 million cubic feet of gas per day and 27 barrels of water.
3. Applicant believes that the following described lands are reasonably proven to be productive of oil and gas in

paying quantities from the Upper Devonian formation and should be included in the original definition of the new pool to be created because of this discovery:

Township 25 South, Range 37 East, N.M.P.M.  
Section 6: N/2

4. That granting the application will be in the best interest of conservation, the prevention of waste and the protection of correlative rights.

WHEREFORE, Arco Oil & Gas Company requests that this application be set for hearing before a duly appointed examiner of the Oil Conservation Division on February 17, 1982, and that notice be given as required by law and the rules of the Division and that the application be approved.

Respectfully submitted,  
CAMPBELL, BYRD & BLACK, P.A.

By William F. Carr  
William F. Carr  
Post Office Box 2208  
Santa Fe, New Mexico 87501  
Attorneys for Arco Oil & Gas  
Company

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

*RLH*  
IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
DIVISION FOR THE PURPOSE OF  
CONSIDERING:

*JAR*  
*[Signature]*  
*WBP*  
*M.S.*  
CASE NO. 7480

Order No. R- 6914

APPLICATION OF ARCO OIL & GAS COMPANY  
FOR POOL CREATION, LEA COUNTY,  
NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on February 17, 1982, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this \_\_\_\_\_ day of February, 1982, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Arco Oil and Gas Company, seeks the creation of a new Upper Devonian gas pool for its Custer Wells Well No. 1 located 1810 feet from the North line and 2164 feet from the West line of Section 6, Township 25 South, Range 37 East, Custer Field, Lea County, New Mexico.

(3) That said Custer Wells Well No. 1 has discovered a separate common source of supply in the Devonian formation in an isolated fault block at a measured depth of 9435 feet to 9482 feet in the side tracked hole.

(4) That a new gas pool for Devonian production should be created and designated the East Custer-Devonian Gas Pool, Lea County, New Mexico, with vertical limits to include the Devonian formation (within the same fault block) and horizontal limits to include:

TOWNSHIP 25 SOUTH, RANGE 37 EAST, NMPM

Section 6: W/2

(5) That the effective date of this order and of the pool creation contained herein should be February 1, 1982.

IT IS THEREFORE ORDERED:

(1) That effective February 1, 1982, a new gas pool for Devonian production is hereby created and designated the East Custer-Devonian Gas Pool, Lea County, New Mexico, with horizontal limits to include:

TOWNSHIP 25 SOUTH, RANGE 37 EAST, NMPM

Section 6: W/2

(2) That the vertical limits of the East Custer-Devonian Gas Pool shall be the Devonian formation where such formation is located within the same fault block as the Arco Oil and Gas Company Custer Wells Well No. 1 completed at a measured vertical depth of from 9435 feet to 9482 feet in the side tracked hole in Unit F of said Section 6.

(3) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO

OIL CONSERVATION DIVISION

JOE D. RAMEY,

Director

S E A L