

CASE 5588: Appl. of AMOCO PROD.  
CO. for DOWNHOLE COMMINGLING,  
Rio Arriba County

Can to Ex Hg  
9 am Dec 3, 1975

CASE NO.

5588

---

APPLICATION,  
TRANSCRIPTS,  
SMALL EXHIBITS,

ETC.

sid morrish reporting service

General Court Reporting Service  
825 Calle Mayia, No. 122, Santa Fe, New Mexico 87501  
Phone (505) 982-9212

Page 1

BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
December 3, 1975

EXAMINER HEARING

IN THE MATTER OF:

Application of Amoco Production Company ) CASE  
for downhole commingling, Rio Arriba ) 5588  
County, New Mexico. )

BEFORE: Richard L. Stamets, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the New Mexico Oil Conservation Commission: William F. Carr, Esq.  
Legal Counsel for the Commission  
State Land Office Building  
Santa Fe, New Mexico

For the Applicant: Paul Cooter, Esq.  
ATWOOD, MALONE, MANN & COOTER  
Attorneys at Law  
P. O. Drawer 700  
Roswell, New Mexico

Oscar Swan, Esq.  
Amoco Production Company  
Denver, Colorado

For the USGS: Carl Traywick  
United States Geological Survey  
Roswell, New Mexico

**sid morrish reporting service**

General Court Reporting Service  
825 Calle Mejia, No. 122, Santa Fe, New Mexico 87501  
Phone (505) 982-9212

Page 2

EXHIBIT

1		
2		<u>Page</u>
3	<u>TERRY LUCHT</u>	
4	Direct Examination by Mr. Swan	4
5	Cross Examination by Mr. Stamets	10
6	Cross Examination by Mr. Traywick	12

EXHIBIT INDEX

7		
8		
9		
10		
11		
12		<u>Page</u>
13	Applicant's Exhibit No. One, Map	10
14	Applicant's Exhibit No. Two, Wellbore Diagram	10
15	Applicant's Exhibit No. Three, Tests	10
16	Applicant's Exhibit No. Four, Data	10
17	Applicant's Exhibit No. Five, Production Graph	10

**sid morrish reporting service**

General Court Reporting Service  
825 Calle Mejia, No. 122, Santa Fe, New Mexico 87501  
Phone (505) 982-9212

1 MR. STAMETS: We will call the next Case, 5588.

2 MR. CARR: Case 5588, application of Amoco production  
3 Company for downhole commingling, Rio Arriba County, New Mexico.

4 MR. STAMETS: Call for appearances in this Case.

5 MR. COOTER: Mr. Examiner, Paul Cooter with Atwood  
6 and Malone in Roswell appearing on behalf of the Applicant,  
7 Amoco Production. The presentation will be made by Oscar Swan,  
8 a member of Amoco's house counsel in Denver.

9 MR. SWAN: Mr. Examiner, Oscar Swan, Amoco Production  
10 Company, I have one witness and may he be sworn at this time?

11 MR. STAMETS: Are there any other appearances in  
12 this Case? Please swear the witness.

13 (THEREUPON, the witness was duly sworn.)

14 MR. SWAN: Mr. Examiner, before I start in the Case  
15 I would like to apologize for not having been present when  
16 this was last set. Mr. R. B. Giles who signed and verified  
17 the application and who would have been our witness was trans-  
18 ferred to other duties and frankly the man who took over for  
19 him was swamped with a lot of unfamiliar paperwork and he  
20 just flat goofed. I didn't even know the case was set until  
21 I got the call from the Commission staff and I appreciate the  
22 call and the opportunity to continue it. Incidentally the  
23 witness today is not the man who goofed.

24

25

TERRY LUCHT

1  
2 called as a witness, having been first duly sworn, was  
3 examined and testified as follows:  
4

DIRECT EXAMINATION

5  
6 BY MR. SWAN:

7 Q Would you state your name, please?

8 A Terry Lucht.

9 Q Would you spell that last name?

10 A L-u-c-h-t.

11 Q By whom are you employed and what position do you  
12 hold?

13 A Amoco Production Company in Farmington and I'm a  
14 production engineer.

15 Q Have you previously testified before this Commission?

16 A No, I have not.

17 Q Would you state briefly for the record what your  
18 education as an engineer has been and what experience you have  
19 had?

20 A I graduated from the University of North Dakota in  
21 May of '74 with a Bachelor's Degree in mechanical engineering.  
22 I was then employed by Amoco Production in Farmington and have  
23 been there for approximately sixteen months.

24 Q Did you furnish for Mr. Giles the information on  
25 which this application is based?

**sid morrish reporting service**

General Court Reporting Service  
825 Calle Mejia, No. 122, Santa Fe, New Mexico 87501  
Phone (505) 982-9212

Page 5

1 A. Yes, I did.

2 Q And did you either prepare or assist in the preparation  
3 of the exhibits that were attached?

4 A. Yes, I did.

5 Q You are then familiar with the subject matter of this  
6 application?

7 A. Yes, I am.

8 MR. SWAN: May his qualifications be admitted?

9 MR. STAMETS: I presume the line of testimony will be  
10 to his expertise in mechanical engineering and his work?

11 MR. SWAN: In engineering, yes. He is not a  
12 geologist.

13 MR. STAMETS: Yes, the witness is qualified.

14 Q (Mr. Swan continuing.) Before we go into the  
15 exhibits, do you have a corrected exhibit that you would like  
16 to present in lieu of some of the exhibits that were attached  
17 to the application?

18 A. Yes, we do. The Exhibit Number One, the map, just  
19 a few Basin-Dakota wells were added here, they were left out  
20 on the initial copy of the map.

21 Q Is the copy which has been marked for identification  
22 in this Case a correct copy?

23 A. Yes, it is.

24 Q The other exhibits -- how many others do you have?

25 A. I have four other exhibits.

1 Q Are they all the same as the exhibits which were  
2 attached to the application?

3 A Yes, they are.

4 Q There is no change in them?

5 A No.

6 Q Would you state in your own words, just what we are  
7 asking for in this application?

8 A We are requesting to downhole commingle the  
9 Gonzales-Mesaverde and Basin-Dakota formations in our Jicarilla  
10 Contract 146 Number 11 pointed out by the large arrow on it,  
11 Exhibit Number One.

12 Q Has that well been completed and dually completed  
13 prior to this hearing?

14 A Yes, it has.

15 Q Why is it necessary or desirable that we be permitted  
16 to commingle the two producing formations?

17 A This summer the annual packer leakage test was  
18 performed on the well and the zones were found to be communica-  
19 ting.

20 Q Well, can the packer be repaired?

21 A The packer could be repaired but it is an expensive  
22 procedure, the tubing has to be pulled the packer repaired  
23 and run back in the well and also to do this you have to kill  
24 the well with water which leads to possible formation damage  
25 and other work would have to be done and the well could be



**sid morrish reporting service**

General Court Reporting Service  
825 Calle Mejia, No. 122, Santa Fe, New Mexico 87501  
Phone (505) 982-9212

Page 7

1 unrepairable.

2 Q So there is then a risk that the well might be  
3 lost if you attempt to repair the packer?

4 A Yes, there is.

5 Q If the well were lost are there sufficient reserves  
6 in the immediate vicinity here so that you could justify the  
7 drilling of a new well?

8 A We don't believe there are.

9 Q Then if the well is lost in an attempt to repair  
10 the packer, would gas be left that could not be produced by  
11 other wells in the field?

12 A Yes, there most likely would be.

13 Q And in your opinion a well to produce those reserves  
14 could be justified as an economic venture now?

15 A Not presently.

16 Q How do the formation pressures of these two  
17 producing formations compare, is there a wide diversity in  
18 pressure or just what are they?

19 A No, there is not. The last two deliverability tests  
20 on the two zones are shown on Exhibit Three and the two  
21 deliverability tests' pressure showed wellhead shutin pressures  
22 of eight hundred and twenty-three for the Dakota and eight  
23 hundred and thirty-four for the Mesaverde, very close.

24 Q In your opinion if there is a commingling will either  
25 formation thief gas from the other formation?

**sid morrish reporting service**

General Court Reporting Service  
825 Calle Mejia, No. 122, Santa Fe, New Mexico 87501  
Phone (505) 982-9212

1 A. We don't believe so with the pressures being that  
2 close.

3 Q. Are their producing rates also such that it reduces  
4 any possibility of communication between the two formations.  
5 In other words, are they fairly low producing rates?

6 A. Yes, sir, they are. There is a production graph  
7 on Exhibit Number Five showing the last two-and-a-half years  
8 of production from the two wells and the Dakota well produces  
9 approximately a hundred MCF a day, while the Mesaverde well is  
10 in the range of two hundred MCF a day averaged over the last  
11 year-and-a-half or so.

12 Q. Incidentally, you have identified Exhibits One,  
13 Three and Five, what is Exhibit Two?

14 A. Exhibit Two is a wellbore diagram of the tubing  
15 and casing and perforations as it exists now, showing the  
16 location of the packer and also the two zones in a sliding  
17 sleeve just above the packer. It could be opened to communi-  
18 cate the tubing.

19 Q. Is all of the equipment in effect in the well now  
20 so this commingling can be accomplished just as a simple  
21 operation?

22 A. Yes, it is.

23 Q. And is that the purpose of Exhibit Two, to show  
24 just what would be proposed here?

25 A. That's correct.

1 Q One other exhibit that you have there, Exhibit Four,  
2 would you just briefly identify that?

3 A Exhibit Four is the evolution of the Gonzales-  
4 Mesaverde pool, showing the discovery date, discovery well,  
5 the creating order and the extending orders brought into use  
6 after that. The boundary is indicated on Exhibit Number One  
7 by the dotted line.

8 Q That dotted line defines now what we believe to be  
9 the productive limits of that Gonzales-Mesaverde?

10 A That is correct.

11 Q In your opinion, will the commingling affect the  
12 correlative rights of either the royalty owners or any working  
13 interest owners in the area?

14 A No, we don't believe so.

15 Q There are other wells in the area producing from  
16 these two formations are there not?

17 A Yes, there are.

18 Q In the application you state that an allocation of  
19 production between the two formations, on what is that based?

20 A On the average production over the 1974. We believe  
21 the allocation should be in the range of Mesaverde for sixty-  
22 six percent of the gas and forty percent of the liquids, while  
23 the Dakota thirty-four percent of the gas and sixty percent  
24 of the liquids.

25 Q Is the working interest and royalty ownership of the

1 two formations the same?

2 A. Yes, it is.

3 Q So would it be fair to say that really the  
4 allocation is primarily for record keeping and bookkeeping,  
5 rather than to divide production between different owners?

6 A. Yes, that's right.

7 MR. SWAN: Mr. Examiner, I would like to offer at  
8 this time the five exhibits that the witness has identified  
9 and testified from.

10 MR. STAMETS: These exhibits will be admitted.

11 (THEREUPON, Applicant's Exhibits One through Five  
12 were admitted into evidence.)

13 MR. SWAN: I submit the witness for examination.

14  
15 CROSS EXAMINATION

16 BY MR. STAMETS:

17 Q Mr. Lucht, referring to Exhibit Number Three,  
18 looking at the pressures on the Basin-Dakota, you've got a  
19 pretty steady decline until 1969, then you've got a  
20 substantial increase and then it falls back down about 1971  
21 again to the same general type, what is responsible for that?

22 A. There was a re-stimulation of the Dakota in November  
23 of '68 as explained in Exhibit Two. There was a larger frac  
24 job, and we re-stimulated the well with this larger frac job  
25 and did gain some pressure.

**sid morrison reporting service**

General Court Reporting Service  
825 Calle Mejia, No. 122, Santa Fe, New Mexico 87501  
Phone (505) 982-9212

1 Q Was a packer-leakage test taken in 1974?

2 A Yes, there was.

3 Q And did that demonstrate that the two zones were  
4 separated at that time?

5 A At that time it did not indicate that. In '74?

6 Q Yes.

7 A Yes, it did indicate it.

8 Q That they were separated?

9 A No, the test this summer in '75 indicated there was  
10 communication and the test in '74 indicated there was not.

11 Q Okay. Is there any problem of the compatibility of  
12 the liquids between these two zones or any likelihood that if  
13 the wells were shut in for any period of time the liquids  
14 could cause some damage in one or the other of the two zones?

15 A We don't believe so.

16 Q If the tubing and packer were pulled out of this  
17 well for any other reason, would it be an economical project  
18 to repair the tubing and re-run it to achieve separation of  
19 the zones?

20 A In my opinion both zones could see some improvement  
21 by producing just up the tubing with the casing shut in. The  
22 higher volume would help to unload the fluids in the wellbore  
23 more efficiently and I believe the possibility exists that  
24 production would be increased, total production increased, from  
25 the two zones by producing just up the tubing, rather than

**sid morrish reporting service**  
General Court Reporting Service  
825 Calle Mejia, No. 122, Santa Fe, New Mexico 87501  
Phone (505) 982-9212

1 producing up the tubing and the casing.

2 Q In fact, does Amoco have any plans at this time to  
3 pull the tubing and packer out of this hole and just complete  
4 it through the tubing?

5 A There is no reason to pull the packer and the tubing  
6 to produce just up the tubing since there is a sliding sleeve  
7 in the tubing already.

8 Q This will be just as effective?

9 A Right.

10 MR. STAMETS: Any other questions of the witness?

11 MR. TRAYWICK: May I ask some?

12 MR. STAMETS: Yes, Mr. Traywick.

13  
14 CROSS EXAMINATION

15 BY MR. TRAYWICK:

16 Q What acreage is allocated to this well, the south  
17 half or the west half? I don't have your exhibit so I'm at  
18 a disadvantage.

19 A I believe they are one-hundred-and-sixty-acre  
20 spacing.

21 Q Okay, there is no pooling agreement then covering  
22 the acreage that is dedicated to the well; is it all one lease  
23 dedicated to the acreage?

24 A I'm not sure I understand. Can you go over that  
25 again, sir?

1 producing up the tubing and the casing.

2 Q In fact, does Amoco have any plans at this time to  
3 pull the tubing and packer out of this hole and just complete  
4 it through the tubing?

5 A There is no reason to pull the packer and the tubing  
6 to produce just up the tubing since there is a sliding sleeve  
7 in the tubing already.

8 Q This will be just as effective?

9 A Right.

10 MR. STAMETS: Any other questions of the witness?

11 MR. TRAYWICK: May I ask some?

12 MR. STAMETS: Yes, Mr. Traywick.

13

14

CROSS EXAMINATION

15 BY MR. TRAYWICK:

16 Q What acreage is allocated to this well, the south  
17 half or the west half? I don't have your exhibit so I'm at  
18 a disadvantage.

19 A I believe they are one-hundred-and-sixty-acre  
20 spacing.

21 Q Okay, there is no pooling agreement then covering  
22 the acreage that is dedicated to the well; is it all one lease  
23 dedicated to the acreage?

24 A I'm not sure I understand. Can you go over that  
25 again, sir?

1 Q Well, I just need to know whether there are pooling  
2 agreements on the acreage dedicated to the well or whether  
3 it is one lease.

4 A That I don't know for sure.

5 MR. SWAN: I think this is all one lease from the  
6 Apaches.

7 MR. TRAYWICK: Yeah, it could be two different  
8 leases. The reason for my question is that the pooling  
9 agreements that we approve require the actual production to  
10 be allocated to each formation because there are separate  
11 pooling privileges, separate communitization agreements. It  
12 may be a red-tape problem and there is no use to belabor it.

13 MR. SWAN: Well, we sure can find out. Just looking  
14 at the exhibit it would appear that all of the land that is  
15 stippled there, this well and the well to the south are under  
16 contract one, four, six.

17 MR. TRAYWICK: From your exhibit it looks like it  
18 is contract one, four, six.

19 MR. SWAN: Yeah, we didn't anticipate this problem.

20 MR. TRAYWICK. I just hadn't looked at it.

21 MR. STAMETS: Any other questions of this witness?  
22 He may be excused.

23 (THEREUPON, the witness was excused.)

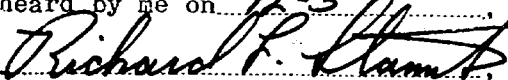
24 MR. STAMETS: Anything further in this case? We will  
25 take the case under advisement.



REPORTER'S CERTIFICATE

I, SIDNEY F. MORRISH, a court reporter, do hereby  
 certify that the foregoing and attached Transcript of Hearing  
 before the New Mexico Oil Conservation Commission was reported  
 by me, and the same is a true and correct record of the said  
 proceedings to the best of my knowledge, skill and ability.

  
 Sidney F. Morrish, Court Reporter

I do hereby certify that the foregoing is  
 a complete record of the proceedings in  
 the Examiner hearing of Case No. 5588  
 heard by me on 12-3, 1975  
  
 Richard P. Stamm, Examiner  
 New Mexico Oil Conservation Commission

**sid morrish reporting service**  
 General Court Reporting Service  
 825 Calle Mejia, No. 122, Santa Fe, New Mexico 87501  
 Phone (505) 982-9212

FLORENE:

WHEN THE DOCKET IS OUT FOR DECEMBER 3RD  
PLEASE SEND A COPY TO:

OSCAR SWAN, ESQ.  
ATTORNEY  
AMOCO PRODUCTION CO.  
SECURITY LIFE BUILDING  
DENVER, COLORADO 80202

THIS IS FOR CASE 5588

*Mailed 11/24/75*



## OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO  
P. O. BOX 2088 - SANTA FE  
87501

DIRECTOR  
JOE D. RAMEY

LAND COMMISSIONER  
PHIL R. LUCERO  
December 17, 1975



STATE GEOLOGIST  
EMERY C. ARNOLD

Paul Cooter  
Atwood, Malone, Mann  
& Cooter  
Attorneys at Law  
P. O. Drawer 700  
Security National Bank Building  
Roswell, New Mexico 88201

Re: CASE NO. 5588  
ORDER NO. R-5133

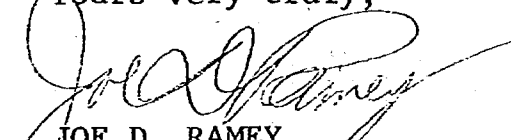
Applicant:

Amoco Production Company

Dear Sir:

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

Yours very truly,

  
JOE D. RAMEY  
Director

JDR/fd

Copy of order also sent to:

Hobbs OCC x  
Artesia OCC             
Aztec OCC x

Other Oscar Swan

BEFORE THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
COMMISSION OF NEW MEXICO FOR  
THE PURPOSE OF CONSIDERING:

CASE NO. 5588  
Order No. R-5133

APPLICATION OF AMOCO PRODUCTION  
COMPANY FOR DOWNHOLE COMMINGLING,  
RIO ARriba COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on December 3, 1975, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 16th day of December, 1975, the Commission, a quorum being present, 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 Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Amoco Production Company, is the owner and operator of the Jicarilla Contract 146 Well No. 11, located in Unit K of Section 4, Township 25 North, Range 5 West, NMPM, Rio Arriba County, New Mexico.

(3) That the applicant seeks authority to commingle Gonzales-Mesaverde and Basin-Dakota production within the wellbore of the above-described well.

(4) That from the Gonzales-Mesaverde zone, the subject well is capable of low marginal production only.

(5) That from the Basin-Dakota zone, the subject well is capable of low marginal production only.

(6) That the proposed commingling may result in the recovery of additional hydrocarbons from each of the subject pools, thereby preventing waste, and will not violate correlative rights.

(7) That the reservoir characteristics of each of the subject zones are such that underground waste would not be caused by the proposed commingling provided that the well is not shut-in for an extended period.

-2-

Case No. 5588  
Order No. R-5133

(8) That to afford the Commission the opportunity to assess the potential for waste and to expeditiously order appropriate remedial action, the operator should notify the Aztec district office of the Commission any time the subject well is shut-in for 7 consecutive days.

(9) That in order to allocate the commingled production to each of the commingled zones in the subject well, 67 percent and 40 percent of the commingled gas and oil production, respectively, should be allocated to the Gonzales-Mesaverde zone, and 33 percent and 60 percent of the commingled gas and oil production, respectively, to the Basin-Dakota zone.

IT IS THEREFORE ORDERED:

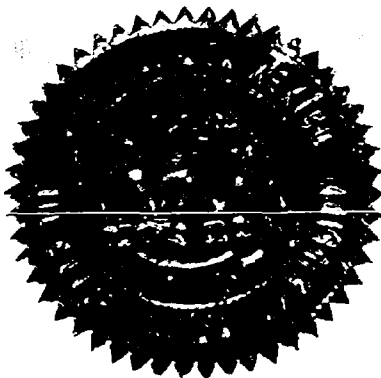
(1) That the applicant, Amoco Production Company, is hereby authorized to commingle Gonzales-Mesaverde and Basin-Dakota production within the wellbore of the Jicarilla Contract 146 Well No. 11, located in Unit K of Section 4, Township 25 North, Range 5 West, NMPM, Rio Arriba County, New Mexico.

(2) That 67 percent and 40 percent of the commingled gas and oil production, respectively, shall be allocated to the Gonzales-Mesaverde zone and 33 percent and 60 percent of the commingled gas and oil production, respectively, shall be allocated to the Basin-Dakota zone.

(3) That the operator of the subject well shall immediately notify the Commission's Aztec district office any time the well has been shut-in for 7 consecutive days and shall concurrently present, to the Commission, a plan for remedial action.

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

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



STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

*Phil R. Lucero*

PHIL R. LUCERO, Chairman

*Emery C. Arnold*

EMERY C. ARNOLD, Member

*Joe D. Ramey*

JOE D. RAMEY, Member & Secretary

S E A L  
jr/

**sid morrish reporting service**

General Court Reporting Service  
825 Calle Mejia, No. 122, Santa Fe, New Mexico 87501  
Phone (505) 982-9212

BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
November 19, 1975

EXAMINER HEARING

IN THE MATTER OF:

Application of Amoco Production Company ) CASE  
for downhole commingling, Rio Arriba ) 5588  
County, New Mexico. )

BEFORE: Richard L. Stamets, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the New Mexico Oil Conservation Commission: William F. Carr, Esq.  
Legal Counsel for the Commission  
State Land Office Building  
Santa Fe, New Mexico

1 MR. STAMETS: The Hearing will please come to  
2 order.

3 We will call at this time Case 5588.

4 MR. CARR: Case 5588, application of Amoco Production  
5 Company for downhole commingling, Rio Arriba County, New Mexico.

6 Mr. Examiner, we have checked with Amoco in Denver  
7 and they have requested that this Case be continued to the  
8 December 3rd, 1975 Examiner Hearing.

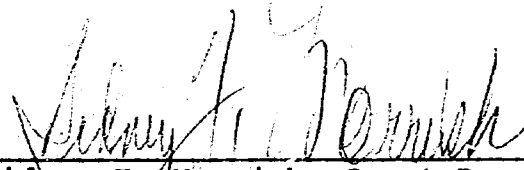
9 MR. STAMETS: Case 5588 will be continued until  
10 December 3, 1975.

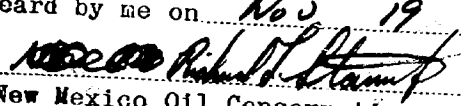
**sid morrish reporting service**

General Court Reporting Service  
825 Calle Mejia, No. 122, Santa Fe, New Mexico 87501  
Phone (505) 982-9212

REPORTER'S CERTIFICATE

I, SIDNEY F. MORRISH, a court reporter, do hereby  
certify that the foregoing and attached Transcript of Hearing  
before the New Mexico Oil Conservation Commission was reported  
by me, and the same is a true and correct record of the said  
proceedings to the best of my knowledge, skill and ability.

  
Sidney F. Morrish, Court Reporter

I do hereby certify that the foregoing is  
a complete record of the proceedings in  
the Examiner hearing of Case No. 5588  
heard by me on Nov 19, 19 75.  
, Examiner  
New Mexico Oil Conservation Commission

**sid morrish reporting service**  
General Court Reporting Service  
825 Calle Mejia, No. 122, Santa Fe, New Mexico 87501  
Phone (505) 982-9212



Docket No. 30-75

Docket No. 31-75 is tentatively set for hearing on December 17, 1975. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - DECEMBER 3, 1975

9 A.M. - OIL CONSERVATION COMMISSION 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:

CASE 5593: Application of Yates Petroleum Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its Caffell FD Well No. 1 to be drilled at a point 660 feet from the South line and 1980 feet from the East line of Section 15, Township 17 South, Range 26 East, Kennedy Farms Field, Eddy County, New Mexico, the E/2 of said Section 15 to be dedicated to the well.

CASE 5594: Application of General American Oil Company of Texas for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of a well to be drilled 330 feet from the South line and 1150 feet from the West line of Section 29, Township 17 South, Range 29 East, Grayburg Gas Field, Eddy County, New Mexico, the W/2 of said Section 29 to be dedicated to the well.

CASE 5595: Application of Harrington Transportation Inc. for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its Higgins Well No. 1 to be drilled 990 feet from the North and East lines of Section 13, Township 18 South, Range 26 East, Atoka-Pennsylvanian Gas Pool, Eddy County, New Mexico, the E/2 of said Section 13 to be dedicated to the well.

CASE 5583: (Continued from November 19, 1975 Examiner Hearing)

Application of Stevens Oil Company for a pilot waterflood project, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pilot waterflood project in the Twin Lakes-San Andres Pool by injection of produced water through its Twinlakes Oil Company Well No. 1, located in Unit D of Section 12, Township 9 South, Range 28 East, Chaves County, New Mexico.

CASE 5591: (Continued from November 19, 1975 Examiner Hearing)

Application of Amoco Production Company for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a well at an unorthodox location 1980 feet from the South line and 1241 feet from the West line of Section 33, Township 17 South, Range 29 East, Grayburg-Morrow Gas Pool, Eddy County, New Mexico, the S/2 of said Section 33 to be dedicated to the well.

CASE 5588: (Continued from November 19, 1975 Examiner Hearing)

Application of Amoco Production Company for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval to commingle Gonzales-Mesaverde and Basin-Dakota gas production in the wellbore of its Jicarilla Contract 146 Well No. 11, located in Unit K of Section 4, Township 25 North, Range 5 West, Rio Arriba County, New Mexico.

CASE 5596: Application of Burk Royalty Company for statutory unitization, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks an order unitizing, for the purpose of secondary recovery, all mineral interests in the Queen formation underlying the following-described lands, Double L-Queen Pool, Chaves County, New Mexico:

TOWNSHIP 14 SOUTH, RANGE 29 EAST, NMPM

Section 23: E/2 SE/4

Section 24: W/2 SW/4

Section 25: NW/4, SW/4 NE/4, N/2 SW/4, SE/4 SW/4,  
W/2 SE/4, & SE/4 SE/4

Section 36: NE/4 NW/4, NE/4, N/2 SE/4, & SE/4 SE/4

TOWNSHIP 14 SOUTH, RANGE 30 EAST, NMPM

Section 31: W/2, W/2 SE/4, & SE/4 SE/4

TOWNSHIP 15 SOUTH, RANGE 29 EAST, NMPM

Section 1: E/2 E/2

Section 12: NE/4 & E/2 SE/4

Section 13: NE/4 NE/4

Among the matters to be considered at the hearing will be the necessity of unit operations and the feasibility of the proposed secondary recovery program; the designation of a unit operator; the determination of the horizontal and vertical limits of the unit area; the determination of a fair, reasonable, and equitable allocation of production and costs of production, including capital investment, to each of the various tracts in the unit area; the determination of credits and charges to be made among the various owners in the unit area for their investment in wells and equipment; and such other matters as may be necessary and appropriate for carrying on efficient unit operations; including, but not necessarily limited to, unit voting procedures, selection, removal, or substitution of unit operator, and time of commencement and termination of unit operations.

CASE 5597: Southeastern New Mexico nomenclature case calling for an order for the creation and extension of certain pools in Eddy County, New Mexico.

(a) CREATE a new pool in Eddy County, New Mexico, classified as a gas pool for Morrow production and designated as the Crow Flats-Morrow Gas Pool. The discovery well is the Samedan Oil Corporation Amoco Federal Well No. 1 located in Unit G of Section 19, Township 16 South, Range 28 East, NMPM. Said pool would comprise:

TOWNSHIP 16 SOUTH, RANGE 28 EAST, NMPM

Section 19: N/2

(b) CREATE a new pool in Eddy County, New Mexico, classified as a gas pool for Morrow production and designated as the Sitting Bull Falls-Morrow Gas Pool. The discovery well is the American Quasar Petroleum Company of New Mexico Huber State Well No. 1 located in Unit F of Section 36, Township 23 South, Range 22 East, NMPM. Said pool would comprise:

TOWNSHIP 23 SOUTH, RANGE 22 EAST, NMPM  
Section 36: W/2

(c) CREATE a new pool in Eddy County, New Mexico, classified as a gas pool for Morrow production and designated as the Little Box Canyon-Morrow Gas Pool. The discovery well is the Cities Service Oil Company Little Box Canyon Unit Well No. 1, located in Unit J of Section 7, Township 21 South, Range 22 East, NMPM. Said pool would comprise:

TOWNSHIP 21 SOUTH, RANGE 22 EAST, NMPM  
Section 7: S/2

(d) CREATE a new pool in Eddy County, New Mexico, classified as a gas pool for Strawn production and designated as the Cottonwood Draw-Strawn Gas Pool. The discovery well is the Robert N. Enfield Cottonwood Draw Unit Well No. 1, located in Unit L of Section 20, Township 25 South, Range 27 East, NMPM. Said pool would comprise:

TOWNSHIP 25 SOUTH, RANGE 27 EAST, NMPM  
Section 20: W/2

(e) CREATE a new pool in Eddy County, New Mexico, classified as a gas pool for Atoka production and designated as the Twin Mills-Atoka Gas Pool. The discovery well is the Perry R. Bass Poker Lake Unit Well No. 42 located in Unit G of Section 10, Township 25 South, Range 30 East, NMPM. Said pool would comprise:

TOWNSHIP 25 SOUTH, RANGE 30 EAST, NMPM  
Section 10: N/2

(f) EXTEND the Atoka San Andres Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 26 EAST, NMPM  
Section 21: N/2 SE/4

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

TOWNSHIP 20 SOUTH, RANGE 27 EAST, NMPM  
Section 29: W/2  
Section 31: N/2  
Section 32: W/2

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

TOWNSHIP 19 SOUTH, RANGE 25 EAST, NMPM

Section 7: E/2

Section 8: W/2

(i) EXTEND the South Empire-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 28 EAST, NMPM

Section 1: S/2

(j) EXTEND the South Empire-Wolfcamp Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 29 EAST, NMPM

Section 30: S/2 SE/4

Section 31: N/2 NE/4

Section 32: N/2 NW/4

(k) EXTEND the South Sand Dunes Lower Penn Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 24 SOUTH, RANGE 31 EAST, NMPM

Section 2: W/2

Section 3: N/2

(l) EXTEND the White City-Pennsylvanian Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 24 SOUTH, RANGE 26 EAST, NMPM

Section 22: All

# GONZALES MESAVERDE

R6W

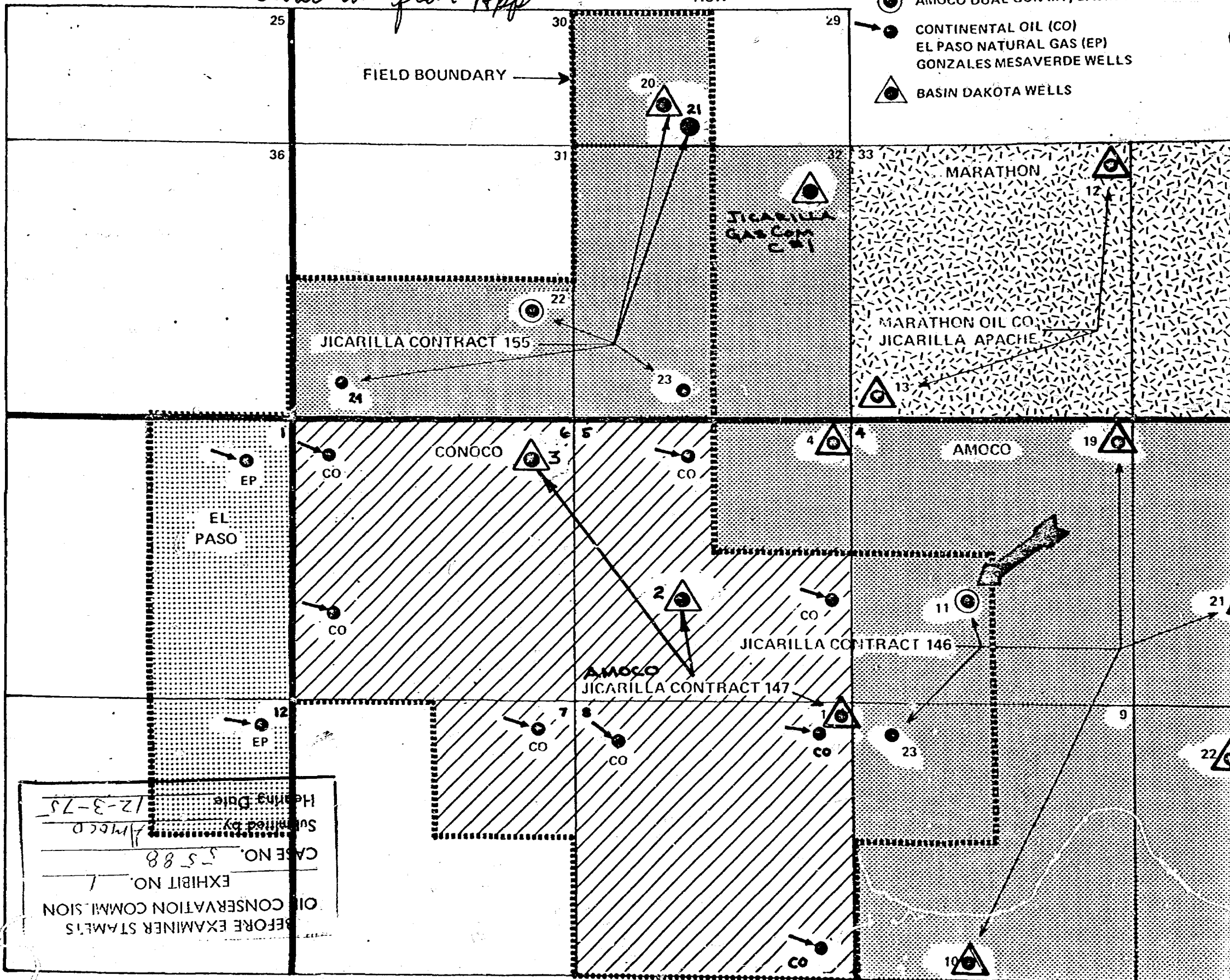
R5W

*Corrected from App'l*

EXHIBIT NO. 1

FIELD BOUNDARY

- AMOCO GON. MV
- ⊙ AMOCO DUAL GON MV, BASIN DAK.
- CONTINENTAL OIL (CO)
- EL PASO NATURAL GAS (EP)
- △ GONZALES MESAVERDE WELLS
- △ BASIN DAKOTA WELLS



GONZALES MESAVERDE

*Corrected from Appl*

R5W

EXHIBIT NO. 1

- AMOCO GON. MV
- ⊙ AMOCO DUAL GON MV, BASIN DAK.
- CONTINENTAL OIL (CO)
- EL PASO NATURAL GAS (EP)
- △ GONZALES MESAVERDE WELLS
- △ BASIN DAKOTA WELLS

FIELD BOUNDARY

JICARILLA CONTRACT 155

MARATHON

MARATHON OIL CO  
JICARILLA APACHE

CONOCO

AMOCO

JICARILLA CONTRACT 146

AMOCO  
JICARILLA CONTRACT 147

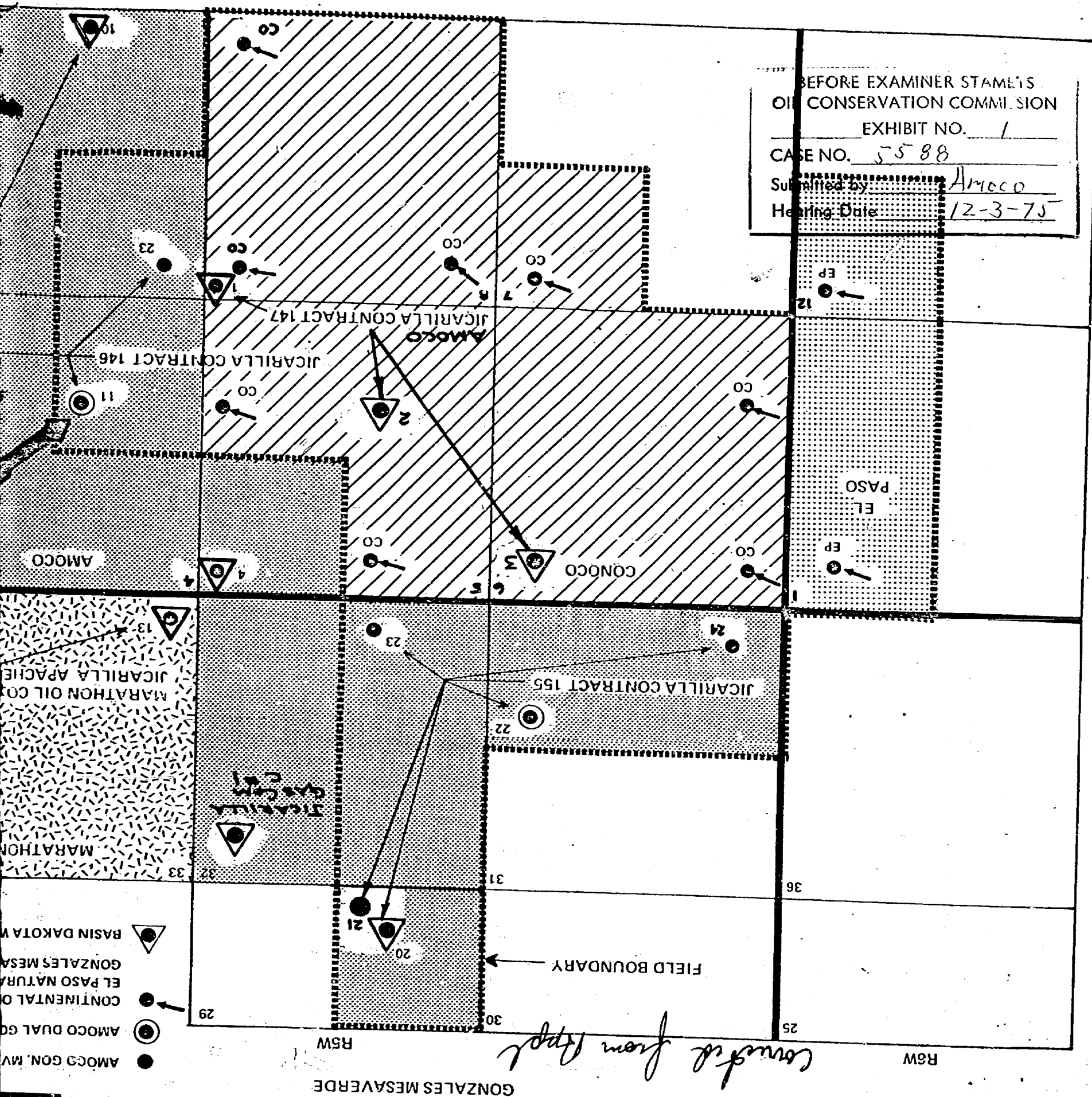
EL PASO

BEFORE EXAMINER  
OIL CONSERVATION  
EXHIBIT NO.  
CASE NO. 5588  
Submitted by  
Hearing Date

T  
26  
N

T  
25  
N





COMMINGLING OF GAS DOWNHOLE  
JICARILLA CONTRACT 146 NO. 11

EXHIBIT NO. 2

WELLBORE DIAGRAM:

\*Original Completion 6--30--61:

Perf with 6 SPF 7109--7115' &  
7125--7129'. SWHYF with 33,600  
gal. 1% CaCl<sub>2</sub> water & 5 lb. J-98/  
1000 gal. & 30,000 lb. sn. 1725  
psi SIP.

\*Restimulation 11--20--68:

Perf with 2 SPF 7240--56', 7280--94'.  
Set select liner 7095--7139' (over  
perfs 7109--7129'). Frac with 36,630  
gal. water & 25,000 lb. 20--40 sn &  
2000 lb. 10--20 sn, sanded off.  
CO to 7149' & attempted to pull  
liner & left 38 1/2' in hole. Drilled  
liner & CO to 7419'.

\*Recompletion in Mesaverde 11--3--72:

Sq. 75 sx cmt @ 5340'.  
Sq. 150 sx cmt @ 5096'.  
Perf 5096--5101', 5129--34', 5178--83',  
5191--96', 5213--18', 5261--66' with  
1 SPF. SWHYF with 34,608 gal. water  
with 0.8% KCl & 10 lb. Gel/1000 gal.  
with 5000 lb. 20--40 sn, 25,000 lb.  
10--20 sn, 8000 lb. 8--12 sn.

8-5/8" 20 lb. CSA 535' with 350 sx.

5096--5101' - 150 sx sq. @ 5096'.

5129--34'

5178--83'

5191--96'

5213--18'

5261--66' - 75 sx sq. @ 5340'.

2-3/8" tubing.

Model "L" Sliding Sleeve @ 7020'.

Model "D" Packer set @ 7055'.

7109--7115'

7125--7129'

Liner 7095--7139' installed for frac & then  
partially pulled & subsequently drilled out.

7240--56'

7280--94'

4" 9.5 lb. CSA 7463', DV @ 3909'.

1st St. - 380 sx w/6% Gel,

Tail-in 100 sx Neat.

2nd St. - 350 sx w/6% Gel,

No tail-in.

BEFORE EXAMINER STAMETS  
OIL CONSERVATION COMMISSION

EXHIBIT NO. 2

CASE NO. 5588

Submitted by Amoco

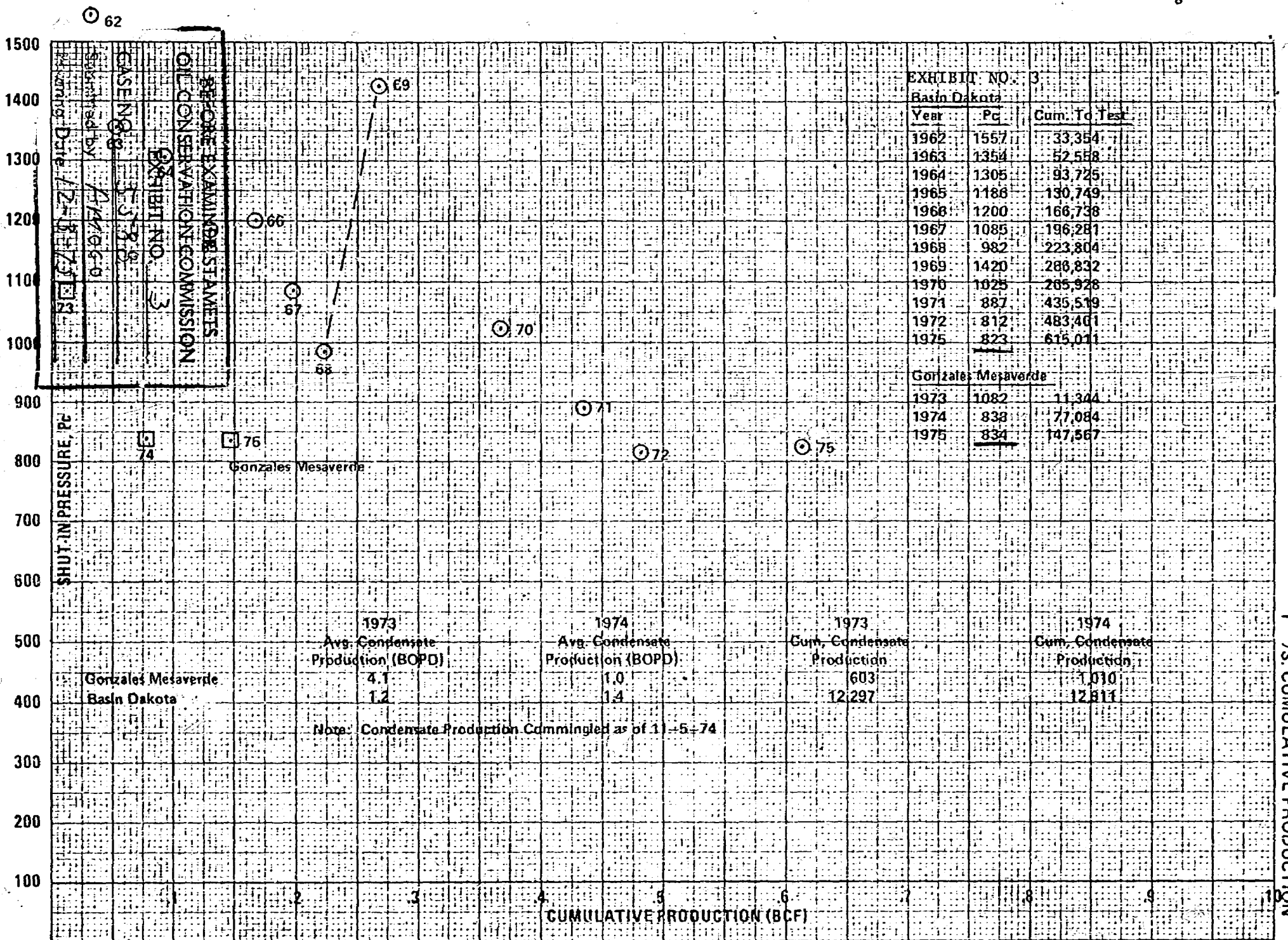
Hearing Date 12-8-75



NO. 316 20 DIVISIONS PER INCH BOTH WAYS, 150 BY 20" DIVISIONS.

codex  
GRAPH PAPER

IN STOCK DIRECT FROM CODEX BOOK CO., NORWOOD, MASS. 02062  
PRINTED IN U.S.A.



JICARILLA CONTRACT 146 NO. 11  
/S. CUMULATIVE PRODUCTION

GONZALES MESAVERDE POOL

EXHIBIT NO. 4

Gonzales Mesaverde (Gas), Rio Arriba County, New Mexico

Discovery Date: November 4, 1971

Discovery Well: Continental Oil Company  
AXI Apache "J" No. 18-A, Sec. 8-25N-5W

Average Producing Depth: Top 4607'

Creating Order: R-4311

Extending Boundaries Order: R-4690, R-4888, R-4963

R-4311 Finding (12): That there is a need for the creation of a new gas pool in Rio Arriba County, New Mexico, for the production of gas from the Mesaverde Formation, said pool to bear the designation of Gonzales Mesa-Mesaverde Pool.

Original Boundaries: T-25-N, R-5-W  
Section 5: W/2  
Section 6: All  
Section 7: NE/4  
Section 8: All

Extended R-4690: T-25-N, R-5-W  
Section 4: SW/4  
Section 5: SE/4  
Section 9: NW/4

T-26-N, R-5-W  
Section 29: SW/4  
Section 31: S/2  
Section 32: W/2

Extended R-4888: T-25-N, R-6-W  
Section 1: NE/4

Extended R-4963: T-25-N, R-6-W  
Section 1: SE/4  
Section 12: NE/4

Summary:	<u>T-25-N, R-5-W</u>	<u>T-25-N, R-6-W</u>	<u>T-26-N, R-5-W</u>
	Section 4: SW/4	Section 1: E/2	Section 29: SW/4
	Section 5: SE/4	Section 12: NE/4	Section 31: S/2
	W/2		Section 32: W/2
	Section 6: All		
	Section 7: NE/4		
	Section 8: All		
	Section 9: NW/4		

BEFORE EXAMINER STAMETS  
OIL CONSERVATION COMMISSION

EXHIBIT NO. 4

CASE NO. 5588

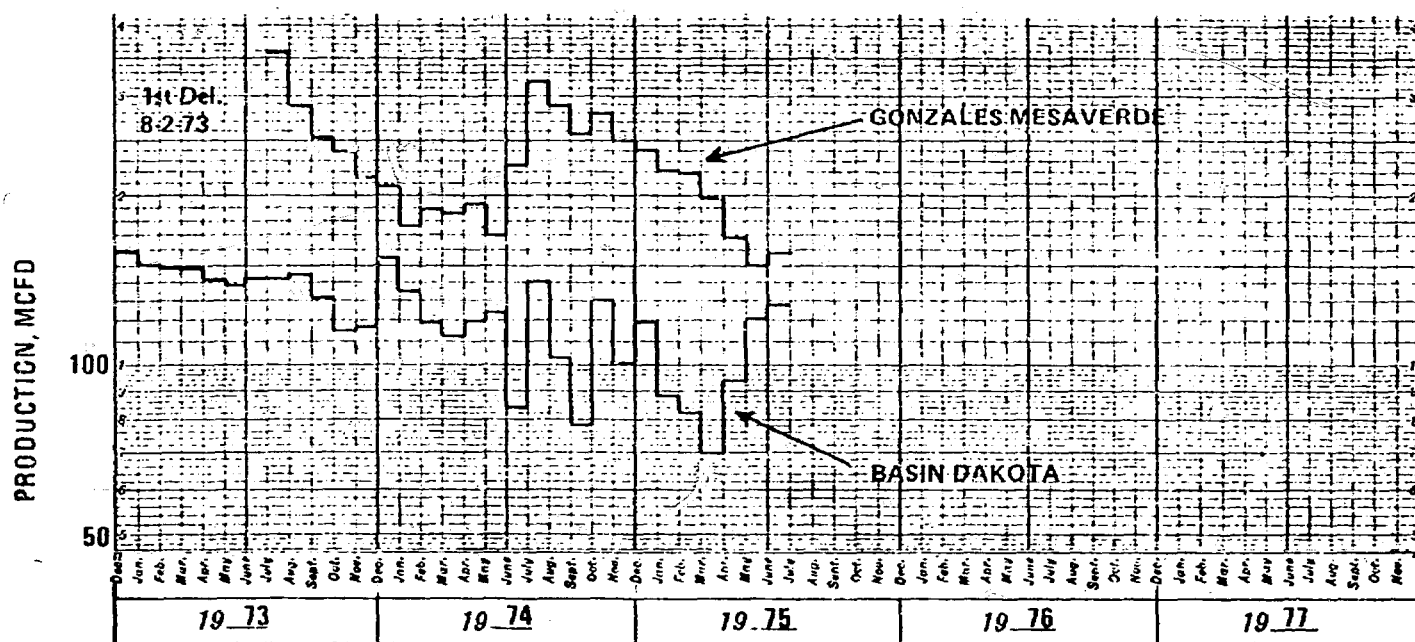
Submitted by AMOCO

Hearing Date 12-3-75

PRODUCTION AND PRESSURES  
JICARILLA CONTRACT 146 NO. 11

EXHIBIT NO. 5

	1973				1974				1975			
	BASIN DAK.		GON. MV		BASIN DAK.		GON. MV		BASIN DAK.		GON. MV	
	DAYS	MCFD	DAYS	MCFD	DAYS	MCFD	DAYS	MCFD	DAYS	MCFD	DAYS	MCFD
JAN.	32	159			32	154	32	207	32	118	29	240
FEB.	24	150			27	136	31	173	24	88	24	223
MAR.	32	149			32	119	31	139	32	83	32	219
APR.	32	148			24	112	24	186	32	69	32	196
MAY	32	143			32	120	32	196	32	94	32	169
JUNE	31	139			32	124	32	170	25	121	25	152
JULY	24	143			32	84	32	225	28	128	27	157
AUG.	32	142	24	373	32	140	26	307				
SEP.	32	144	26	286	32	102	32	285				
OCT.	29	131	27	251	24	79	24	254				
NOV.	32	116	32	238	28	130	30	278				
DEC.	25	118	24	213	32	100	32	248				



	YEAR	O	TPF	CPF	Pc	P <sub>11</sub>	P <sub>d</sub>	D
BASIN DAKOTA	1972	158	298	521	812	319	406	144
	1975	104	298	0	523	305	412	98
GONZALES MESAVERDE	1973	272	0	291	1082	319	866	135
	1974	320	0	321	858	324	419	291
	1975	156	0	321	858	324	412	142

BEFORE EXAMINER STAMETS  
OIL CONSERVATION COMMISSION

EXHIBIT NO. 5

CASE NO. 5588

Submitted by Amoco

Hearing Date 12-3-75

Docket No. 29-75

Dockets Nos. 30-75 and 31-75 are tentatively set for hearing on December 3 and December 17, 1975. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - NOVEMBER 19, 1975

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

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

- ALLOWABLE: (1) Consideration of the allowable production of gas from seventeen prorated pools in Lea, Eddy, Roosevelt, and Chaves Counties, New Mexico, for December, 1975.
- (2) Consideration of the allowable production of gas from five prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico, for December, 1975.

CASE 5583: Application of Stevens Oil Company for a pilot waterflood project, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pilot waterflood project in the Twin Lakes-San Andres Pool by injection of produced water through its Twinlakes Oil Company Well No. 1, located in Unit D of Section 12, Township 9 South, Range 28 East, Chaves County, New Mexico.

CASE 5584: Application of Cities Service Oil Company for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a well at an unorthodox location 990 feet from the North line and 660 feet from the West line of Section 29, Township 21 South, Range 27 East, South Carlsbad Field, Eddy County, New Mexico, or, in the alternative, in the NW/4 NW/4 of said Section 29 at some point not closer than 660 feet from either the North or West lines of said Section, the W/2 of said Section 29 to be dedicated to the well.

CASE 5585: Application of W. P. Carr for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pictured Cliffs formation underlying the NE/4 of Section 13, Township 31 North, Range 11 West, Blanco-Pictured Cliffs Pool, San Juan County, New Mexico, to be dedicated to a well to be drilled in Unit G of said Section 13. 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. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 5586: Application of Amerada Hess Corporation for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Otero-Gallup oil production and Basin-Dakota gas production in the wellbore of its McKenzie Federal Wells Nos. 1 and 3 located, respectively, in Units M and O of Section 25 and its Harvey State Well No. 1 located in Unit N of Section 36, all in Township 25 North, Range 6 West, Rio Arriba County, New Mexico.

CASE 5587: Application of Pennzoil Company for downhole commingling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval to commingle Morrow and Atoka gas production in the wellbore of its Gulf Federal Well No. 2, located in Unit L of Section 6, Township 23 South, Range 27 East, South Carlsbad Field, Eddy County, New Mexico.

CASE 5588: Application of Amoco Production Company for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval to commingle Gonzales-Mesaverde and Basin-Dakota gas production in the wellbore of its Jicarilla Contract 146 Well No. 11 located in Unit K of Section 4, Township 25 North, Range 5 West, Rio Arriba County, New Mexico.

CASE 5589: Application of Filon Exploration Corporation for pool creation, assignment of a discovery allowable, and special pool rules, Sandoval County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new pool for the production of oil from the Entrada formation for its Federal 33 Well No. 3 located in Unit N of Section 33, Township 21 North, Range 5 West, Sandoval County, New Mexico, and the assignment of a discovery allowable to said well; applicant further seeks the promulgation of special pool rules for said pool, including a provision for a special depth bracket allowable.

CASE 5590: Northwestern New Mexico nomenclature case calling for an order for the creation, contraction, and extension of certain pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico.

(a) CREATE a new pool in San Juan County, New Mexico, classified as a gas pool for Pictured Cliffs production and designated as the Nipp Pictured Cliffs Pool and described as:

TOWNSHIP 26 NORTH, RANGE 12 WEST, NMPM

Section 16: SW/4  
Section 17: SE/4  
Section 20: E/2  
Section 21: W/2  
Section 28: W/2  
Section 33: All  
Section 34: SW/4

(b) CONTRACT the Blanco-Pictured Cliffs Pool boundary in Rio Arriba and San Juan Counties, New Mexico, to exclude therefrom:

TOWNSHIP 29 NORTH, RANGE 9 WEST, NMPM

Section 17: SW/4

TOWNSHIP 30 NORTH, RANGE 10 WEST, NMPM

Section 35: NW/4

(c) EXTEND the Angels Peak-Gallup Pool boundary in San Juan County, New Mexico, to include therein:

TOWNSHIP 26 NORTH, RANGE 9 WEST, NMPM

Section 5: N/2

Section 15: SE/4

TOWNSHIP 26 NORTH, RANGE 10 WEST, NMPM

Section 13: S/2

TOWNSHIP 27 NORTH, RANGE 9 WEST, NMPM

Section 31: All

(d) EXTEND the Aztec-Fruitland Pool boundary in San Juan County, New Mexico, to include therein:

TOWNSHIP 29 NORTH, RANGE 10 WEST, NMPM

Section 8: NW/4

Section 9: SW/4

Section 20: N/2

(e) EXTEND the Aztec-Pictured Cliffs Pool boundary in San Juan County, New Mexico, to include therein:

TOWNSHIP 29 NORTH, RANGE 9 WEST, NMPM

Section 17: SW/4

Section 20: NW/4

TOWNSHIP 29 NORTH, RANGE 10 WEST, NMPM

Section 11: N/2

Section 12: NW/4

TOWNSHIP 30 NORTH, RANGE 10 WEST, NMPM

Section 27: E/2

Section 35: NW/4

(f) EXTEND the Blanco-Mesaverde Pool boundary in Rio Arriba and San Juan Counties, New Mexico, to include therein:

TOWNSHIP 30 NORTH, RANGE 5 WEST, NMPM

Section 2: All

Section 3: All

(g) EXTEND the Blanco-Pictured Cliffs Pool boundary in Rio Arriba and San Juan Counties, New Mexico, to include therein:

TOWNSHIP 29 NORTH, RANGE 8 WEST, NMPM

Section 31: SE/4

Section 32: S/2

TOWNSHIP 29 NORTH, RANGE 9 WEST, NMPM

Section 28: E/2

TOWNSHIP 30 NORTH, RANGE 8 WEST, NMPM

Section 29: SW/4

Section 32: N/2

TOWNSHIP 30 NORTH, RANGE 10 WEST, NMPM

Section 3: All

Section 4: E/2

TOWNSHIP 31 NORTH, RANGE 9 WEST, NMPM

Section 31: NE/4

Section 32: NW/4

TOWNSHIP 31 NORTH, RANGE 10 WEST, NMPM

Sections 5 through 8: All

Section 14: W/2

Sections 15 through 17: All

Section 18: N/2 and SE/4

Section 20: N/2 and SE/4

Sections 21 through 23: All

Sections 26 through 28: All

Section 29: NE/4

Sections 33 and 34: All

Section 35: N/2

TOWNSHIP 31 NORTH, RANGE 11 WEST, NMPM

Section 1: All

Section 2: E/2 and SW/4

Section 15: NW/4

Section 16: N/2

Section 26: NE/4

TOWNSHIP 32 NORTH, RANGE 11 WEST, NMPM

Section 16: S/2

Section 17: SE/4

(h) EXTEND the Bloomfield-Chacra Pool boundary in San Juan County, New Mexico, to include therein:

TOWNSHIP 29 NORTH, RANGE 10 WEST, NMPM

Section 8: SE/4

Section 17: N/2 and SW/4

(i) EXTEND the Campo-Gallup Pool boundary in Rio Arriba County, New Mexico, to include therein:

TOWNSHIP 29 NORTH, RANGE 4 WEST, NMPM

Section 12: NW/4

(j) EXTEND the Escrito-Gallup Oil Pool boundary in Rio Arriba and San Juan Counties, New Mexico, to include therein:

TOWNSHIP 24 NORTH, RANGE 7 WEST, NMPM

Section 33: E/2

TOWNSHIP 24 NORTH, RANGE 8 WEST, NMPM

Section 13: W/2 NE/4, E/2 NW/4 and E/2 SE/4

(k) EXTEND the Fulcher Kutz-Pictured Cliffs Pool boundary in San Juan County, New Mexico, to include therein:

TOWNSHIP 28 NORTH, RANGE 11 WEST, NMPM  
Section 23: NW/4 and SE/4

TOWNSHIP 29 NORTH, RANGE 11 WEST, NMPM  
Section 7: NE/4  
Section 8: NW/4

(l) EXTEND the Harris Mesa-Chacra Pool boundary in San Juan County, New Mexico, to include therein:

TOWNSHIP 27 NORTH, RANGE 9 WEST, NMPM  
Section 2: N/2 and SE/4  
Section 11: NE/4  
Section 12: NW/4

TOWNSHIP 28 NORTH, RANGE 9 WEST, NMPM  
Section 26: N/2 and SE/4  
Section 34: NW/4  
Section 35: All

(m) EXTEND the Largo-Chacra Pool boundary in Rio Arriba and San Juan Counties, New Mexico, to include therein:

TOWNSHIP 27 NORTH, RANGE 7 WEST, NMPM  
Section 6: SW/4  
Section 7: W/2  
Section 15: SW/4  
Section 22: W/2  
Section 27: NW/4  
Section 28: NE/4  
Section 29: S/2

TOWNSHIP 27 NORTH, RANGE 8 WEST, NMPM  
Section 1: SE/4  
Section 12: All

(n) EXTEND the South Lindrith Gallup-Dakota Oil Pool boundary in Rio Arriba County, New Mexico, to include therein:

TOWNSHIP 23 NORTH, RANGE 4 WEST, NMPM  
Section 3: NW/4  
Section 4: N/2  
Section 5: NE/4

TOWNSHIP 24 NORTH, RANGE 4 WEST, NMPM  
Section 33: SW/4

(o) EXTEND the West Lindrith Gallup-Dakota Oil Pool boundary in Rio Arriba County, New Mexico, to include therein:

TOWNSHIP 24 NORTH, RANGE 4 WEST, NMPM  
Section 1: NW/4 SW/4 and E/2 SW/4  
Section 2: N/2  
Section 11: NW/4 NE/4 and S/2 NE/4



(p) EXTEND the Ojo-Pictured Cliffs Pool boundary in San Juan County, New Mexico, to include therein:

TOWNSHIP 28 NORTH, RANGE 15 WEST, NMPM  
Section 26: NE/4

(q) EXTEND the Otero-Chacra Pool boundary in Rio Arriba County, New Mexico, to include therein:

TOWNSHIP 26 NORTH, RANGE 6 WEST, NMPM  
Section 21: NE/4

TOWNSHIP 26 NORTH, RANGE 7 WEST, NMPM  
Section 11: S/2  
Section 13: SW/4  
Section 14: N/2  
Section 24: NW/4

(r) EXTEND the Rusty-Menefee Oil Pool boundary in Sandoval County, New Mexico, to include therein:

TOWNSHIP 22 NORTH, RANGE 7 WEST, NMPM  
Section 13: NW/4  
Section 14: NE/4

(s) EXTEND the Tapacito-Pictured Cliffs Pool boundary in Rio Arriba County, New Mexico, to include therein:

TOWNSHIP 27 NORTH, RANGE 4 WEST, NMPM  
Section 16: SW/4  
Section 21: N/2

(t) EXTEND the Waw-Pictured Cliffs Pool boundary in San Juan County, New Mexico, to include therein:

TOWNSHIP 27 NORTH, RANGE 13 WEST, NMPM  
Section 29: E/2 and SW/4  
Section 30: SE/4  
Section 31: NE/4  
Section 32: N/2

(u) EXTEND the Wild Horse-Gallup Pool boundary in Rio Arriba County, New Mexico, to include therein:

TOWNSHIP 26 NORTH, RANGE 4 WEST, NMPM  
Section 14: N/2  
Section 24: NE/4

CASE 5591: Application of Amoco Production Company for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a well at an unorthodox location 1980 feet from the South line and 1241 feet from the West line of Section 33, Township 17 South, Range 29 East, Grayburg-Morrow Gas Pool, Eddy County, New Mexico, the S/2 of said Section 33 to be dedicated to the well.

CASE 5592: Application of Agua, Inc. for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced water by injection into the San Andres formation through the open-hole interval from approximately 4000 to 5000 feet in its Blinbry-Drinkard SWD System Well No. A-22 located 817 feet from the North line and 965 feet from the East line of Section 22, Township 22 South, Range 37 East, Lea County, New Mexico.

CASE 5403: (Reopened)

In the matter of the hearing called by the Oil Conservation Commission on its own motion to further consider the subject matter of Case No. 5377, namely to permit all interested parties to appear and show cause why the continued injection of water for secondary recovery or disposal purposes into any formation from the surface of the ground down to and including the Drinkard formation should be permitted in the following described area in Lea County, New Mexico:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM  
Sections 13 through 36: All

TOWNSHIP 23 SOUTH, RANGE 37 EAST, NMPM  
Sections 1 through 12: All

CASE 5571: (Continued from October 8, 1975 Examiner Hearing)

Application of Robert G. Cox for amendment of Order No. R-4561, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks amendment of Order No. R-4561, which order permitted the directional drilling of applicant's Federal "EA" Well No. 1, located 330 feet from the North and West lines of Section 12, Township 18 South, Range 27 East, Empire-Abo Pool, Eddy County, New Mexico, in such a manner as to be bottomed within 100 feet of the surface location. Applicant seeks the amendment of said order to permit bottoming of the subject well approximately 58 feet from the North line and 8 feet from the West line of said Section 12 and to permit verification of said downhole location by single-shot directional surveys made concurrently with the drilling of said well.



Case 5588

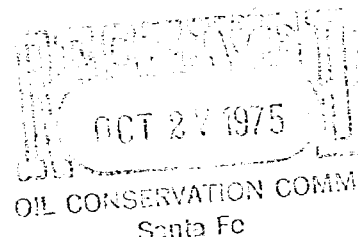
Amoco Production Company

Security Life Building  
Denver, Colorado 80202

*Ask for Hrg.*

October 8, 1975

Joe D. Ramey, Secretary-Director (3)  
New Mexico Oil Conservation Commission  
P. O. Box 2088  
Santa Fe, New Mexico 87501



Dear Mr. Ramey:

File: VDP-395-986.511

Downhole Commingle Gas from Gonzales  
Mesaverde and Basin Dakota in Jicarilla  
Contract 146 No. 11, Rio Arriba County,  
New Mexico

We respectively request approval to downhole commingle gas production from the Gonzales Mesaverde and the Basin Dakota formations in Amoco's Jicarilla Contract 146 No. 11, K-4-25N-5W. (1820' FWL and 1510' FSL of Section 4). The commingling of condensate in this well was administratively approved by NMOCC Order CTB-253 on May 17, 1974 and has been done since November 5, 1974.

There is precedent for downhole commingling of gas from the Mesaverde and Basin Dakota. Austral Oil Company, Incorporated, by NMOCC Order No. R-5075, dated August 12, 1975, received such permission for the Blanco Mesaverde and Basin Dakota commingling in its Bunny Well No. 1, P-10-27N-9W. Our reasons for requesting downhole commingling in Jicarilla Contract 146 No. 11 are practically identical with theirs, i.e., downhole mechanical problems which would be costly to repair and present a risk of formation damage, and the fact that the Mesaverde is an edge location stratigraphically and with respect to the boundary of the Gonzales field.

By NMOCC Administrative Order MC-2041 dated July 11, 1973, Amoco was given permission to dually complete its Jicarilla Contract 146 Well No. 11 in the Gonzales Mesaverde and the Basin Dakota, provided annual packer leakage tests were taken to prove segregation of production. A. R. Kendrick's letter of August 8, 1975 to our Farmington Area directed that Amoco take immediate action to correct communication between the Mesaverde and Dakota in our No. 11 well that was indicated from the

Joe D. Ramey  
Page Two  
October 8, 1975

latest packer leakage test report. To correct the packer leak, we will be forced to pull the tubing and repair the packer, an expensive procedure approximating \$3,500. To pull the tubing we also would have to kill the well, risking permanent damage to the already weak formations and reduced gas recovery from the damaged formations. If commingling were approved, we only would have to open a sleeve set above the packer, a procedure involving no risk of formation damage and costing but \$300.

The attached map shows the outline of the Gonzales Mesaverde Field and the location of all Gonzales Mesaverde wells presently completed in the area. The map also shows all Basin Dakota wells in the immediate area of Jicarilla Contract 146 No. 11. All the Basin Dakota wells in the area are operated by Amoco with the exception of the Marathon wells in Section 33, T26N-R5W. There are only electric logs available over the Gonzales Mesaverde zone on our offsets to Jicarilla Contract 146 No. 11. Attached are copies of the logs covering the Mesaverde zone in the offset wells. The Gonzales Mesaverde wells are completed in the Point Lookout (lower Mesaverde). None are completed in the Cliffhouse (upper Mesaverde). This zone was found to be wet through early development testing.

The Gonzales Mesaverde is not prorated and the Basin Dakota side of the Jicarilla Contract 146 No. 11 is marginal. There consequently are no restrictions on the production from the two zones. Jicarilla Contract 146 No. 11 is 100% Amoco leasehold interest, with both zones having common royalty interest owners.

In support of this commingling request, we enclose a wellbore diagram of Jicarilla Contract 146 No. 11, a plot of shut-in wellhead pressure vs. cumulative production for the Mesaverde and for the Dakota in this well since its completion, a chronological listing of the orders extending the boundary of the Gonzales Mesaverde pool, and a recap of production and pressures measured in Jicarilla Contract 146 No. 11 over the past several years.

Shut-in wellhead pressure is essentially the same for the Mesaverde and for the Dakota in Well No. 11. As such, underground waste should not be caused by the granting of the proposed commingling.

Based on the production performance of the Gonzales Mesaverde averaged over the entire year of 1974 in Well No. 11 and the production performance of the Basin Dakota in this same well for the same period of time, we recommend allocation of the commingled production be:

Gonzales Mesaverde 66% gas: 40% liquids  
Basin Dakota 34% gas: 60% liquids

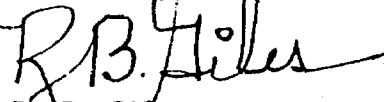
Production during May, 1975 likewise supports this allocation.

Joe D. Ramey  
Page Three  
October 8, 1975

El Paso markets the gas and liquids from the No. 11 well. In our opinion, the commercial value of the commingled production will not be less than the sum of the values of the individual streams. The proposed commingling may result in the recovery of additional hydrocarbons from each of the subject pools, thereby preventing waste, and will not violate correlative rights.

All offset operators and the U.S. Geological Survey, since Tribal lands are involved, are being notified of this commingling request by certified mailing of a copy of this letter application. We ask that each party waive objection to this commingling request by signing in the space provided below, sending one signed copy to you, one to me, and retaining the third copy for their own files.

Yours very truly,

  
R. B. Giles  
RBG:do

DOCKET MAILED

Date 11/10/75

cc: A. R. Kendrick, Supervisor  
District No. 3  
New Mexico Oil Conservation Commission  
1000 Rio Brazos Road  
Aztec, New Mexico 87410

I have no objection to Amoco's plans to downhole commingle gas production from the Gonzales Mesaverde formation and from the Basin Dakota formation in Jicarilla Contract 146 No. 11 Well, K-4-25N-5W.

MARATHON OIL COMPANY

By: 

Date: 10/22/75

CONTINENTAL OIL COMPANY

By: \_\_\_\_\_

Date: \_\_\_\_\_

UNITED STATES GEOLOGICAL SURVEY

By: \_\_\_\_\_

Date: \_\_\_\_\_

645-658

VERIFICATION AND AFFIDAVIT

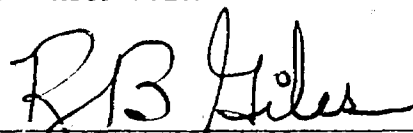
STATE OF COLORADO     )  
                              : ss  
COUNTY OF DENVER     )

R. B. Giles, of lawful age, being first duly sworn on his oath, deposes and says:

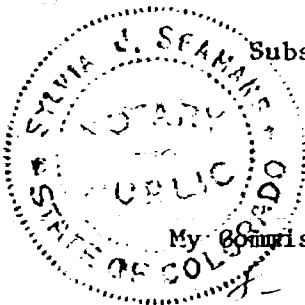
That he is employed in an engineering capacity by Amoco Production Company in its Denver, Colorado, office; that Amoco's application for approval to downhole commingle gas production from the Gonzales Mesaverde and from the Basin Dakota in its Jicarilla Contract 146 No. 11 well, K-4-25N-5W, in Rio Arriba County, New Mexico, was prepared under his direction and supervision; that the matters and things therein set forth are true and correct to the best of his knowledge and belief; and that a copy thereof was sent by certified mail from Applicant's Denver, Colorado, office on October 8, 1975 to the following parties, at the addresses shown herein, to wit:

P. T. McGrath (2)	Marathon Oil Company	Continental Oil Company
U. S. Geological Survey	P. O. Box 120	P. O. Box 460
P. O. Box 965	Casper, Wyoming 82601	Hobbs, New Mexico 88240
Farmington, New Mexico 88240		

and to the best of his information, knowledge and belief, the parties above named are the only parties to whom notice of such application is required to be given in accordance with New Mexico Oil Conservation Commission rules.

  
\_\_\_\_\_  
R. B. Giles

Subscribed and sworn to before me this 8th day of October, 1975.



My Commission expires:

  
\_\_\_\_\_  
Notary Public

Case 5588

COMMINGLING OF GAS DOWNHOLE  
JICARILLA CONTRACT 146 NO. 11

WELLBORE DIAGRAM:

\*Original Completion 6--30--61:

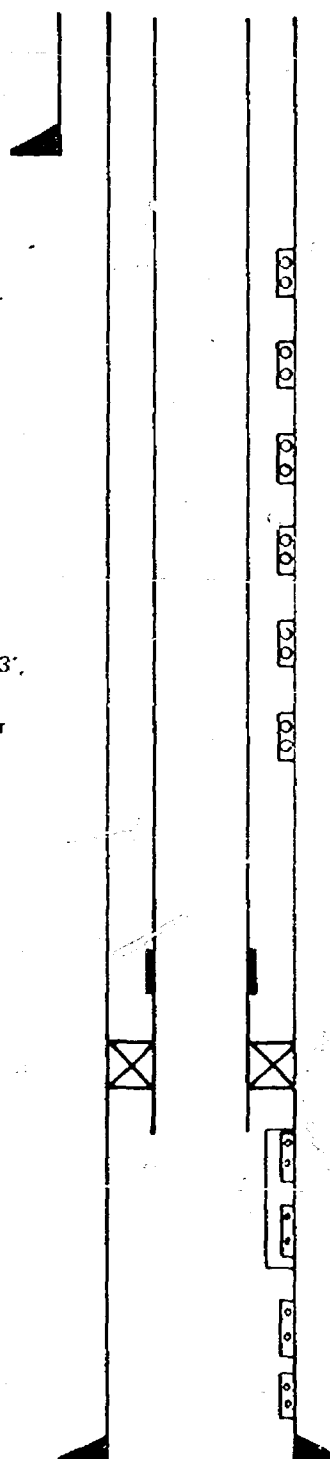
Perf with 6 SPF 7109--7115' &  
7125--7129'. SWHYF with 33,600  
gal. 1% CaCl<sub>2</sub> water & 5 lb. J-98/  
1000 gal. & 30,000 lb. sn. 1725  
psi SIP.

\*Restimulation 11--20--63:

Perf with 2 SPF 7240--56', 7280--94'.  
Set select liner 7095--7139' (over  
perfs 7109--7129'). Frac with 36,630  
gal. water & 25,000 lb. 20--40 sn. 5  
2000 lb. 10--20 sn. sanded off.  
CO to 7149' & attempted to pull  
liner & left 38 1/2' in hole. Drilled  
liner & CO to 7419'.

\*Recompletion in Mesaverde 11--3--72:

Sq. 75 sx cmt @ 5340'.  
Sq. 150 sx cmt @ 5096'.  
Perf 5096--5101', 5129--34', 5178--83',  
5191--96', 5213--18', 5261--66' with  
1 SPF. SWHYF with 34,608 gal. water  
with 0.8% KCl & 10 lb. Gel/1000 gal.  
with 5000 lb. 20--40 sn. 25,000 lb.  
10--20 sn. 8000 lb. 8--12 sn.



8-5/8" 20 lb. CSA 535' with 350 sx.

5096--5101' -- 150 sx sq. @ 5096'.

5129--34'

5178--83'

5191--96'

5213--18'

5261--66' -- 75 sx sq. @ 5340'.

2-3/8" tubing.

Model "L" Sliding Sleeve @ 7020'.

Model "D" Packer set @ 7055'.

7109--7115'

7125--7129'

Liner 7095--7139' installed for frac & then  
partially pulled & subsequently drilled out.

7240--56'

7280--94'

4 1/2" 9.5 lb. CSA 7463', DV @ 3909'.

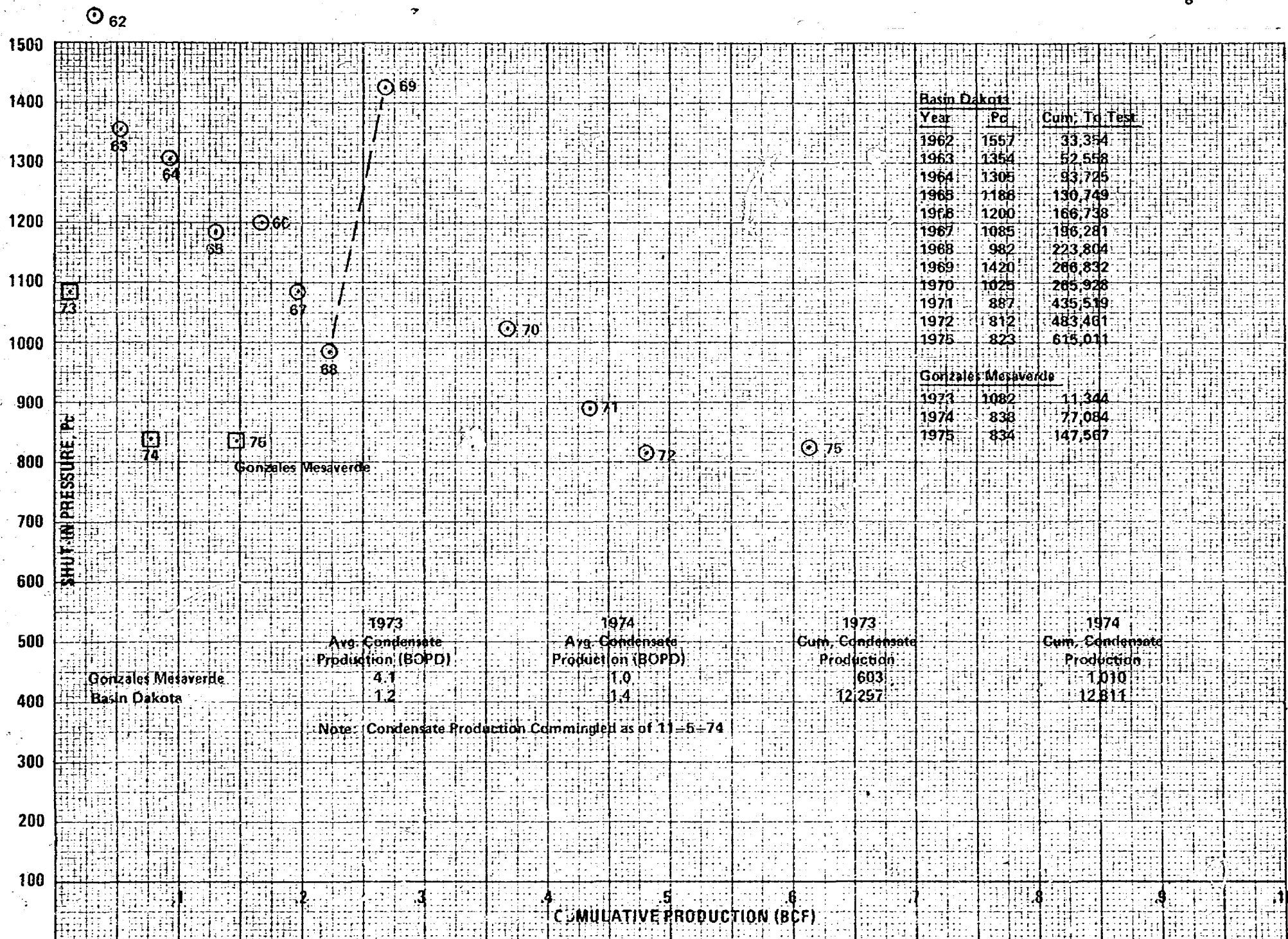
1st St. -- 380 sx w/6% Gel,  
Tail in 100 sx Neat.

2nd St. -- 350 sx w/6% Gel,  
No tail-in.

NO. 315 20 DIVISIONS PER INCH BOTH WAYS. 150 BY 200 DIVISIONS.

Codex  
GRAPH PAPER

IN STOCK DIRECT FROM CODEX BOOK CO., NORWOOD, MASS. 02062  
PRINTED IN U.S.A.



Case 5588

JICARILLA CONTRACT 146 NO. 11  
Pc VS. CUMULATIVE PRODUCTION



Case 5588

GONZALES MESAVERDE POOL

Gonzales Mesaverde (Gas), Rio Arriba County, New Mexico

Discovery Date: November 4, 1971

Discovery Well: Continental Oil Company  
AXI Apache "J" No. 18-A, Sec. 8-25N-5W

Average Producing Depth: Top 4607'

Creating Order: R-4311

Extending Boundaries Order: R-4690, R-4888, R-4963

R-4311 Finding (12): That there is a need for the creation of a new gas pool in Rio Arriba County, New Mexico, for the production of gas from the Mesaverde Formation, said pool to bear the designation of Gonzales Mesa-Mesaverde Pool.

Original Boundaries: T-25-N, R-5-W  
Section 5: W/2  
Section 6: All  
Section 7: NE/4  
Section 8: All

Extended R-4690: T-25-N, R-5-W  
Section 4: SW/4  
Section 5: SE/4  
Section 9: NW/4

T-26-N, R-5-W  
Section 29: SW/4  
Section 31: S/2  
Section 32: W/2

Extended R-4888: T-25-N, R-6-W  
Section 1: NE/4

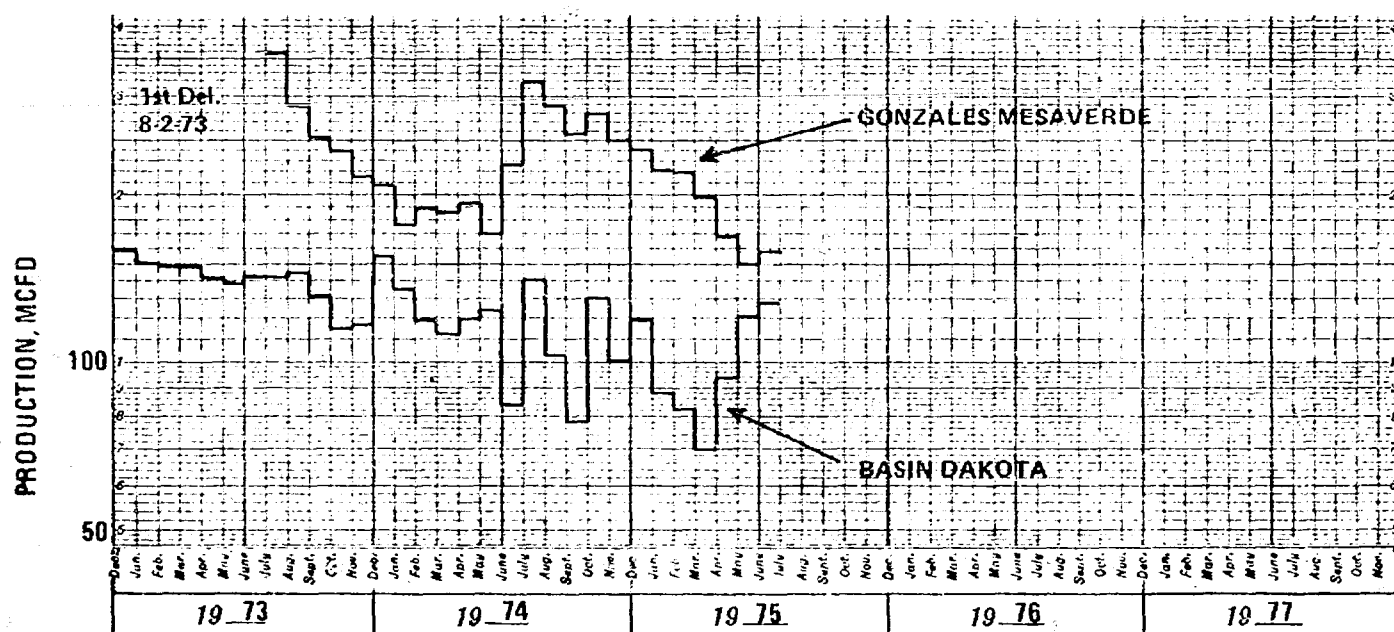
Extended R-4963: T-25-N, R-6-W  
Section 1: SE/4  
Section 12: NE/4

Summary:	<u>T-25-N, R-5-W</u>	<u>T-25-N, R-6-W</u>	<u>T-26-N, R-5-W</u>
	Section 4: SW/4	Section 1: E/2	Section 29: SW/4
	Section 5: SE/4	Section 12: NE/4	Section 31: S/2
	W/2		Section 32: W/2
	Section 6: All		
	Section 7: NE/4		
	Section 8: All		
	Section 9: NW/4		

Case 5588

PRODUCTION AND PRESSURES  
JICARILLA CONTRACT 146 NO. 11

	1973				1974				1975			
	BASIN DAK.		GON. MV		BASIN DAK.		GON. MV		BASIN DAK.		GON. MV	
	DAYS	MCFD	DAYS	MCFD	DAYS	MCFD	DAYS	MCFD	DAYS	MCFD	DAYS	MCFD
JAN.	32	159			32	154	32	207	32	118	29	240
FEB.	24	150			27	136	31	173	24	88	24	223
MAR.	32	149			32	119	31	189	32	83	32	219
APR.	32	148			24	112	24	186	32	69	32	196
MAY	32	143			32	120	32	196	32	94	32	169
JUNE	31	139			32	124	32	170	25	121	25	152
JULY	24	143			32	84	32	225	28	128	27	157
AUG.	32	142	24	373	32	140	26	307				
SEP.	32	144	26	266	32	102	32	285				
OCT.	29	131	27	251	24	79	24	254				
NOV.	32	116	32	238	28	130	30	278				
DEC.	25	118	24	213	32	100	32	248				



	YEAR	G	TPE	CPF	Pc	P <sub>w</sub>	P <sub>d</sub>	D
BASIN DAKOTA	1972	158	298	521	812	319	406	144
	1975	194	298	0	823	305	412	98
GONZALES MESAVERDE	1973	272	0	291	1082	319	866	135
	1974	320	0	321	838	324	419	291
	1975	156	0	323	834	326	417	142



United States Department of the Interior

GEOLOGICAL SURVEY

P. O. Box 1809  
Durango, Colorado 81301

Case 5588

OCT 23 1975  
OIL CONSERVATION COMM.  
Santa Fe

October 21, 1975

Amoco Production Company  
Security Life Building  
Denver, Colorado 80202

Attention: Mr. R. B. Giles

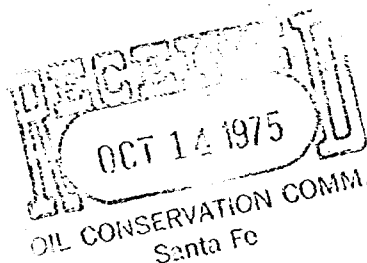
Gentlemen:

This is to advise that this office offers no objection to your proposal of October 8, 1975, to the New Mexico Oil Conservation Commission, regarding downhole commingling of the Gonzales Mesaverde and Basin Dakota zones in your No. 11 well, located in the NW $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 4, T. 25 N., R. 5 W., Rio Arriba County, New Mexico, on Jicarilla tribal lease No. 146.

You should file, for approval by this office, six copies of Sundry Report, Form 9-331, "Intent to Commingle", describing your proposal. Reference should be made to NMOCC approval or appropriate attachments.

Sincerely yours,

*Jerry W. Long*  
Jerry W. Long  
District Engineer



**Amoco Production Company**

Security Life Building  
Denver, Colorado 80202

October 8, 1975

Joe D. Ramey, Secretary-Director (3)  
New Mexico Oil Conservation Commission  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Dear Mr. Ramey:

File: VDP-395-986.511

Downhole Commingle Gas from Gonzales  
Mesaverde and Basin Dakota in Jicarilla  
Contract 146 No. 11, Rio Arriba County,  
New Mexico

We respectfully request approval to downhole commingle gas production from the Gonzales Mesaverde and the Basin Dakota formations in Amoco's Jicarilla Contract 146 No. 11, K-4-25N-5W. (1820' FWL and 1510' FSL of Section 4). The commingling of condensate in this well was administratively approved by NMOCC Order CTB-253 on May 17, 1974 and has been done since November 5, 1974.

There is precedent for downhole commingling of gas from the Mesaverde and Basin Dakota. Austral Oil Company, Incorporated, by NMOCC Order No. R-5075, dated August 12, 1975, received such permission for the Blanco Mesaverde and Basin Dakota commingling in its Bunny Well No. 1, P-10-27N-9W. Our reasons for requesting downhole commingling in Jicarilla Contract 146 No. 11 are practically identical with theirs, i.e., downhole mechanical problems which would be costly to repair and present a risk of formation damage, and the fact that the Mesaverde is an edge location stratigraphically and with respect to the boundary of the Gonzales field.

By NMOCC Administrative Order MC-2041 dated July 11, 1973, Amoco was given permission to dually complete its Jicarilla Contract 146 Well No. 11 in the Gonzales Mesaverde and the Basin Dakota, provided annual packer leakage tests were taken to prove segregation of production. A. R. Kendrick's letter of August 8, 1975 to our Farmington Area directed that Amoco take immediate action to correct communication between the Mesaverde and Dakota in our No. 11 well that was indicated from the

Joe D. Ramey  
Page Two  
October 8, 1975

latest packer leakage test report. To correct the packer leak, we will be forced to pull the tubing and repair the packer, an expensive procedure approximating \$3,500. To pull the tubing we also would have to kill the well, risking permanent damage to the already weak formations and reduced gas recovery from the damaged formations. If commingling were approved, we only would have to open a sleeve set above the packer, a procedure involving no risk of formation damage and costing but \$300.

The attached map shows the outline of the Gonzales Mesaverde Field and the location of all Gonzales Mesaverde wells presently completed in the area. The map also shows all Basin Dakota wells in the immediate area of Jicarilla Contract 146 No. 11. All the Basin Dakota wells in the area are operated by Amoco with the exception of the Marathon wells in Section 33, T26N-R5W. There are only electric logs available over the Gonzales Mesaverde zone on our offsets to Jicarilla Contract 146 No. 11. Attached are copies of the logs covering the Mesaverde zone in the offset wells. The Gonzales Mesaverde wells are completed in the Point Lookout (lower Mesaverde). None are completed in the Cliffhouse (upper Mesaverde). This zone was found to be wet through early development testing.

The Gonzales Mesaverde is not prorated and the Basin Dakota side of the Jicarilla Contract 146 No. 11 is marginal. There consequently are no restrictions on the production from the two zones. Jicarilla Contract 146 No. 11 is 100% Amoco leasehold interest, with both zones having common royalty interest owners.

In support of this commingling request, we enclose a wellbore diagram of Jicarilla Contract 146 No. 11, a plot of shut-in wellhead pressure vs. cumulative production for the Mesaverde and for the Dakota in this well since its completion, a chronological listing of the orders extending the boundary of the Gonzales Mesaverde pool, and a recap of production and pressures measured in Jicarilla Contract 146 No. 11 over the past several years.

Shut-in wellhead pressure is essentially the same for the Mesaverde and for the Dakota in Well No. 11. As such, underground waste should not be caused by the granting of the proposed commingling.

Based on the production performance of the Gonzales Mesaverde averaged over the entire year of 1974 in Well No. 11 and the production performance of the Basin Dakota in this same well for the same period of time, we recommend allocation of the commingled production be:

Gonzales Mesaverde 66% gas: 40% liquids  
Basin Dakota 34% gas: 60% liquids

Production during May, 1975 likewise supports this allocation.

Joe D. Ramey  
Page Three  
October 8, 1975

El Paso markets the gas and liquids from the No. 11 well. In our opinion, the commercial value of the commingled production will not be less than the sum of the values of the individual streams. The proposed commingling may result in the recovery of additional hydrocarbons from each of the subject pools, thereby preventing waste, and will not violate correlative rights.

All offset operators and the U.S. Geological Survey, since Tribal lands are involved, are being notified of this commingling request by certified mailing of a copy of this letter application. We ask that each party waive objection to this commingling request by signing in the space provided below, sending one signed copy to you, one to me, and retaining the third copy for their own files.

Yours very truly,



R. B. Giles  
RBG:do

cc: A. R. Kendrick, Supervisor  
District No. 3  
New Mexico Oil Conservation Commission  
1000 Rio Brazos Road  
Aztec, New Mexico 87410

I have no objection to Amoco's plans to downhole commingle gas production from the Gonzales Mesaverde formation and from the Basin Dakota formation in Jicarilla Contract 146 No. 11 Well, K-4-25N-5W.

MARATHON OIL COMPANY

By: \_\_\_\_\_

Date: \_\_\_\_\_

CONTINENTAL OIL COMPANY

By: \_\_\_\_\_

Date: \_\_\_\_\_

UNITED STATES GEOLOGICAL SURVEY

By: \_\_\_\_\_

Date: \_\_\_\_\_

VERIFICATION AND AFFIDAVIT

STATE OF COLORADO     )  
                              : ss  
COUNTY OF DENVER     )

R. B. Giles, of lawful age, being first duly sworn on his oath, deposes and says:

That he is employed in an engineering capacity by Amoco Production Company in its Denver, Colorado, office; that Amoco's application for approval to downhole commingle gas production from the Gonzales Mesaverde and from the Basin Dakota in its Jicarilla Contract 146 No. 11 well, K-4-25N-5W, in Rio Arriba County, New Mexico, was prepared under his direction and supervision; that the matters and things therein set forth are true and correct to the best of his knowledge and belief; and that a copy thereof was sent by certified mail from Applicant's Denver, Colorado, office on October 8, 1975 to the following parties, at the addresses shown herein, to wit:

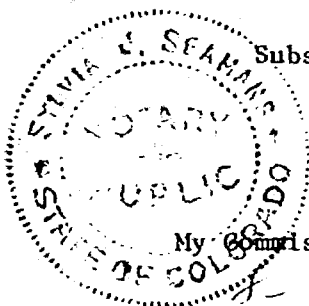
P. T. McGrath (2)	Marathon Oil Company	Continental Oil Company
U. S. Geological Survey	P. O. Box 120	P. O. Box 460
P. O. Box 965	Casper, Wyoming 82601	Hobbs, New Mexico 88240
Farmington, New Mexico 88240		

and to the best of his information, knowledge and belief, the parties above named are the only parties to whom notice of such application is required to be given in accordance with New Mexico Oil Conservation Commission rules.

R B Giles  
R. B. Giles

Subscribed and sworn to before me this 8th day of October, 1975.

Syura Seaman  
Notary Public



My Commission expires:

8-15-76

COMMINGLING OF GAS DOWNHOLE  
JICARILLA CONTRACT 146 NO. 11

WELLBORE DIAGRAM:

\*Original Completion 6-30-61:

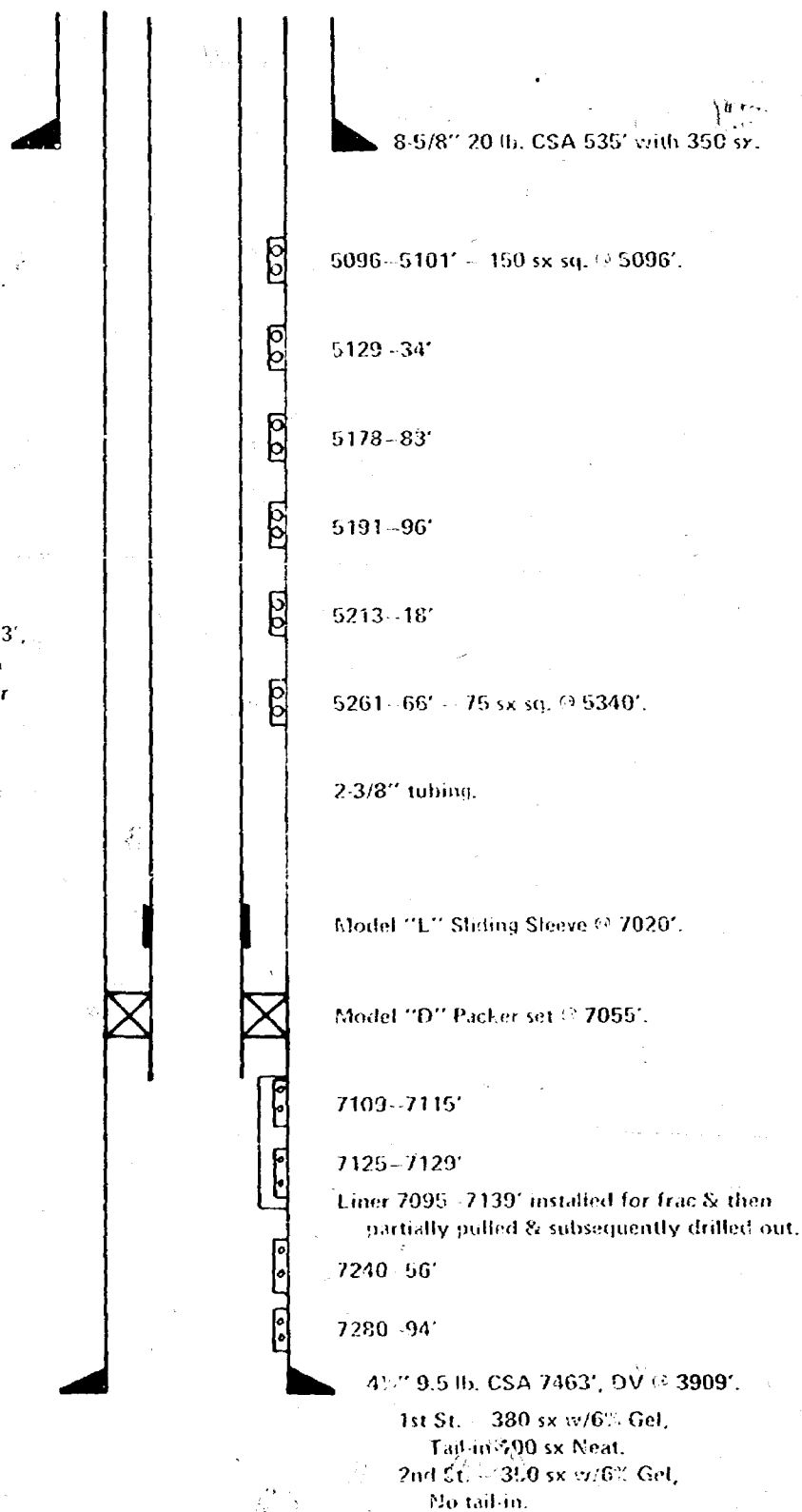
Perf with 6 SPF 7109-7115' &  
7125-7129'. SWHYF with 33,600  
gal. 1% CaCl<sub>2</sub> water & 5 lb. J-98/  
1000 gal. & 30,000 lb. sn. 1725  
psi SIP.

\*Restimulation 11-20-68:

Perf with 2 SPF 7240-56', 7280-94'.  
Set select liner 7095-7139' (over  
perfs 7109-7129'). Frac with 36,630  
gal. water & 25,000 lb. 20-40 sn &  
2000 lb. 10-20 sn, sanded off.  
CO to 7149' & attempted to pull  
liner & left 38 1/2' in hole. Drilled  
liner & CO to 7419'.

\*Recompletion in Mesaverde 11-3-72:

Sq. 75 sx cmt @ 5340'.  
Sq. 150 sx cmt @ 5096'.  
Perf 5096-5101', 5129-34', 5178-83',  
5191-96', 5213-18', 5261-66' with  
1 SPF. SWHYF with 34,608 gal. water  
with 0.8% KCl & 10 lb. Gel/1000 gal.  
with 5000 lb. 20-40 sn, 25,000 lb.  
10-20 sn, 8000 lb. 8-12 sn.

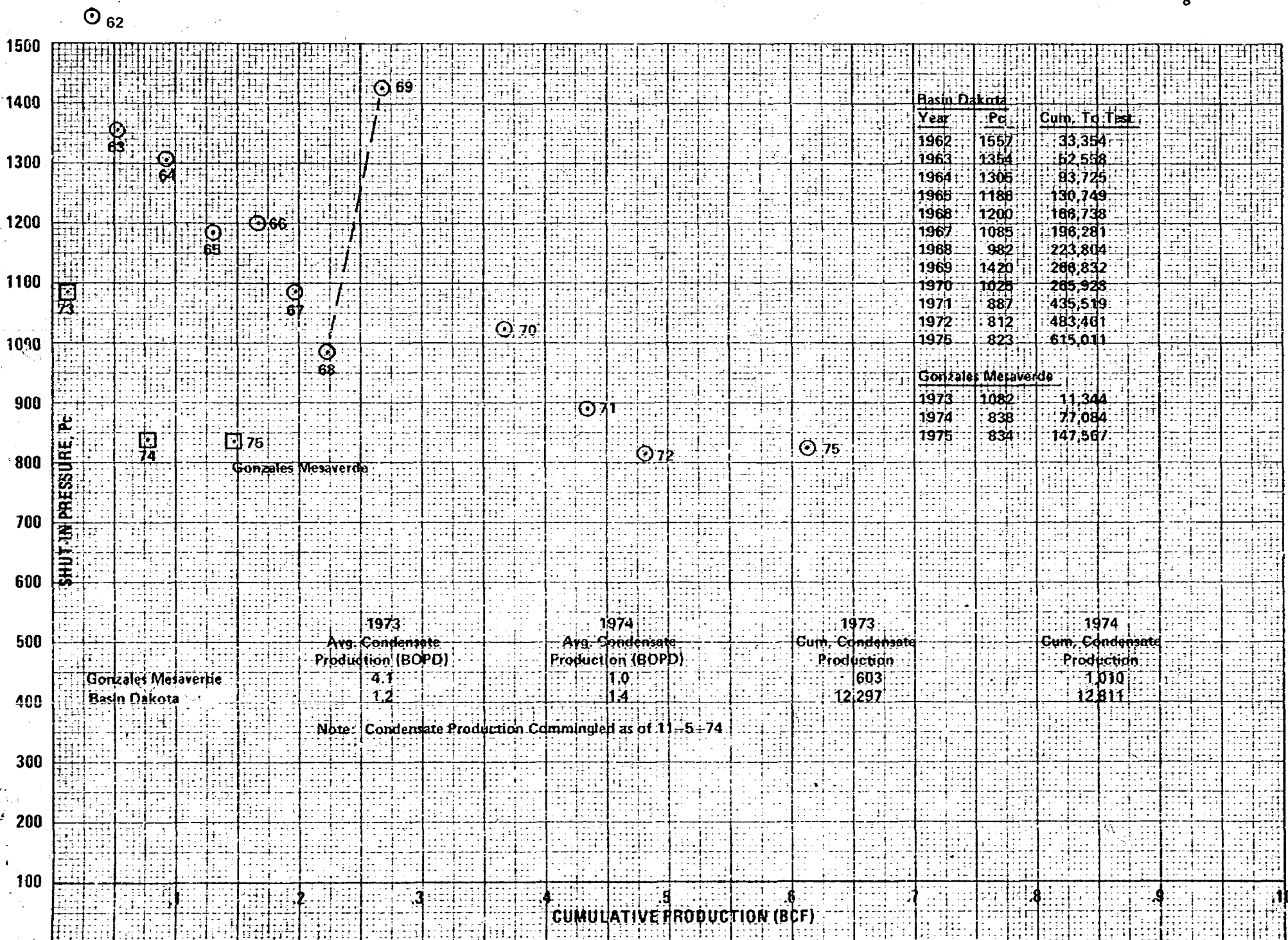




NO. 318 20 DIVISIONS PER INCH BOTH WAYS. 150 BY 200 DIVISIONS.

codex  
GRAPH PAPER

IN STOCK DIRECT FROM CODEX BOOK CO., NORWOOD, MASS. 02062  
PRINTED IN U.S.A.



JICARILLA CONTRACT 146 NO. 11  
Pc VS. CUMULATIVE PRODUCTION

GONZALES MESAVERDE POOL

Gonzales Mesaverde (Gas), Rio Arriba County, New Mexico

Discovery Date: November 4, 1971

Discovery Well: Continental Oil Company  
AXI Apache "J" No. 18-A, Sec. 8-25N-5W

Average Producing Depth: Top 4607'

Creating Order: R-4311

Extending Boundaries Order: R-4690, R-4888, R-4963

R-4311 Finding (12): That there is a need for the creation of a new gas pool in Rio Arriba County, New Mexico, for the production of gas from the Mesaverde Formation, said pool to bear the designation of Gonzales Mesa-Mesaverde Pool.

Original Boundaries: T-25-N, R-5-W  
Section 5: W/2  
Section 6: All  
Section 7: NE/4  
Section 8: All

Extended R-4690: T-25-N, R-5-W  
Section 4: SW/4  
Section 5: SE/4  
Section 9: NW/4

T-26-N, R-5-W  
Section 29: SW/4  
Section 31: S/2  
Section 32: W/2

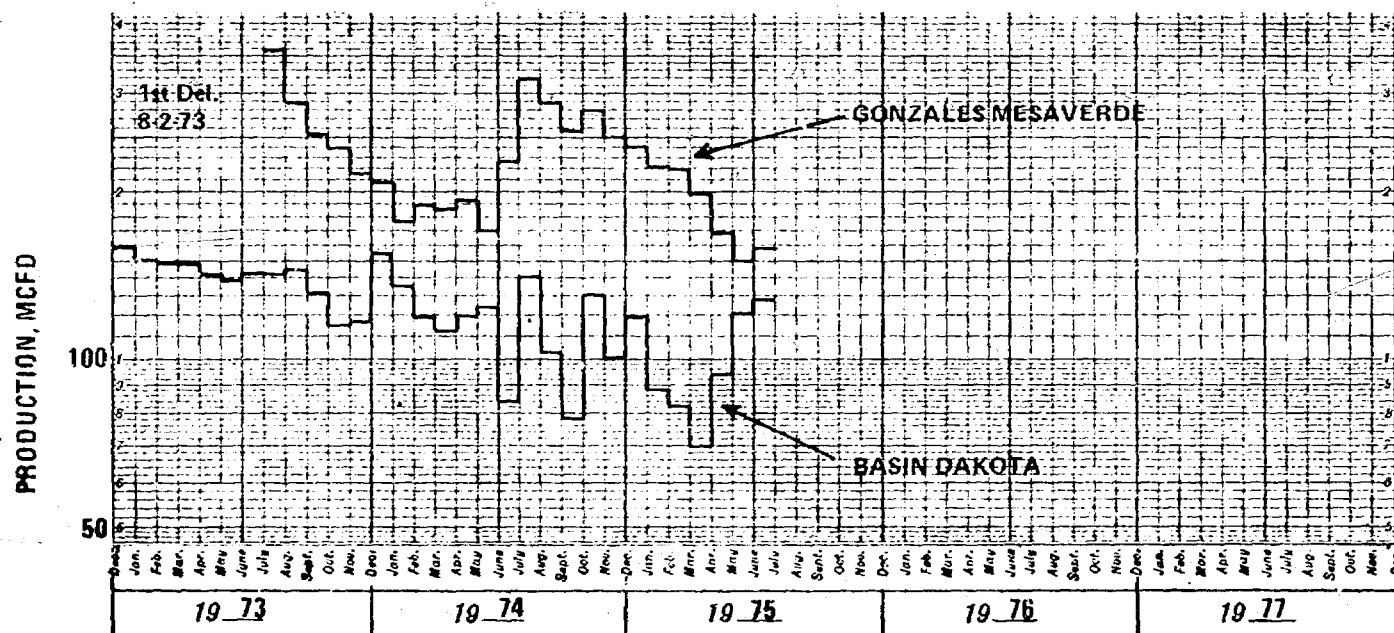
Extended R-4888: T-25-N, R-6-W  
Section 1: NE/4

Extended R-4963: T-25-N, R-6-W  
Section 1: SE/4  
Section 12: NE/4

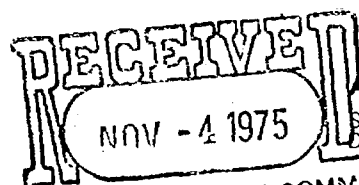
Summary:	<u>T-25-N, R-5-W</u>	<u>T-25-N, R-6-W</u>	<u>T-26-N, R-5-W</u>
	Section 4: SW/4	Section 1: E/2	Section 29: SW/4
	Section 5: SE/4	Section 12: NE/4	Section 31: S/2
	W/2		Section 32: W/2
	Section 6: All		
	Section 7: NE/4		
	Section 8: All		
	Section 9: NW/4		

**PRODUCTION AND PRESSURES  
JICARILLA CONTRACT 146 NO. 11**

	1973				1974				1975			
	BASIN DAK.		GON. MV		BASIN DAK.		GON. MV		BASIN DAK.		GON. MV	
	DAYS	MCFD	DAYS	MCFD	DAYS	MCFD	DAYS	MCFD	DAYS	MCFD	DAYS	MCFD
JAN.	32	159			32	154	32	297	32	118	29	240
FEB.	24	150			27	136	31	173	24	88	24	223
MAR.	32	149			32	119	31	189	32	83	32	219
APR.	32	148			24	112	24	186	32	69	32	196
MAY	32	143			32	120	32	196	32	94	32	169
JUNE	31	139			32	124	32	170	25	121	25	152
JULY	24	143			32	84	32	225	28	128	27	157
AUG.	32	142	24	373	32	140	26	307				
SEP.	32	144	26	286	32	102	32	285				
OCT.	29	131	27	251	24	79	24	254				
NOV.	32	116	32	238	28	130	30	278				
DEC.	25	118	24	213	32	100	32	248				



	YEAR	Q	TPF	CPF	Pc	P <sub>w</sub>	P <sub>d</sub>	D
BASIN DAKOTA	1972	158	298	521	812	319	406	144
	1975	194	258	0	823	305	412	98
GONZALES MESAVERDE	1973	272	0	291	1082	319	866	135
	1974	320	0	321	838	324	419	291
	1975	156	0	323	834	326	417	142



OIL CONSERVATION COMM.  
Santa Fe

Amoco Production Company  
Security Life Building  
Denver, Colorado 80202

October 8, 1975

Joe D. Ramey, Secretary-Director (3)  
New Mexico Oil Conservation Commission  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Dear Mr. Ramey:

File: VDP-395-986.511

Downhole Commingle Gas from Gonzales  
Mesaverde and Basin Dakota in Jicarilla  
Contract 146 No. 11, Rio Arriba County,  
New Mexico

We respectfully request approval to downhole commingle gas production from the Gonzales Mesaverde and the Basin Dakota formations in Amoco's Jicarilla Contract 146 No. 11, K-4-25N-5W. (1820' FWL and 1510' FSL of Section 4). The commingling of condensate in this well was administratively approved by NMOCC Order CTB-253 on May 17, 1974 and has been done since November 5, 1974.

There is precedent for downhole commingling of gas from the Mesaverde and Basin Dakota. Austral Oil Company, Incorporated, by NMOCC Order No. R-5075, dated August 12, 1975, received such permission for the Blanco Mesaverde and Basin Dakota commingling in its Bunny Well No. 1, P-10-27N-9W. Our reasons for requesting downhole commingling in Jicarilla Contract 146 No. 11 are practically identical with theirs, i.e., downhole mechanical problems which would be costly to repair and present a risk of formation damage, and the fact that the Mesaverde is an edge location stratigraphically and with respect to the boundary of the Gonzales field.

By NMOCC Administrative Order MC-2041 dated July 11, 1973, Amoco was given permission to dually complete its Jicarilla Contract 146 Well No. 11 in the Gonzales Mesaverde and the Basin Dakota, provided annual packer leakage tests were taken to prove segregation of production. A. R. Kendrick's letter of August 8, 1975 to our Farmington Area directed that Amoco take immediate action to correct communication between the Mesaverde and Dakota in our No. 11 well that was indicated from the

Joe D. Ramey  
Page Two  
October 8, 1975

latest packer leakage test report. To correct the packer leak, we will be forced to pull the tubing and repair the packer, an expensive procedure approximating \$3,500. To pull the tubing we also would have to kill the well, risking permanent damage to the already weak formations and reduced gas recovery from the damaged formations. If commingling were approved, we only would have to open a sleeve set above the packer, a procedure involving no risk of formation damage and costing but \$300.

The attached map shows the outline of the Gonzales Mesaverde Field and the location of all Gonzales Mesaverde wells presently completed in the area. The map also shows all Basin Dakota wells in the immediate area of Jicarilla Contract 146 No. 11. All the Basin Dakota wells in the area are operated by Amoco with the exception of the Marathon wells in Section 33, T26N-R5W. There are only electric logs available over the Gonzales Mesaverde zone on our offsets to Jicarilla Contract 146 No. 11. Attached are copies of the logs covering the Mesaverde zone in the offset wells. The Gonzales Mesaverde wells are completed in the Point Lookout (lower Mesaverde). None are completed in the Cliffhouse (upper Mesaverde). This zone was found to be wet through early development testing.

The Gonzales Mesaverde is not prorated and the Basin Dakota side of the Jicarilla Contract 146 No. 11 is marginal. There consequently are no restrictions on the production from the two zones. Jicarilla Contract 146 No. 11 is 100% Amoco leasehold interest, with both zones having common royalty interest owners.

In support of this commingling request, we enclose a wellbore diagram of Jicarilla Contract 146 No. 11, a plot of shut-in wellhead pressure vs. cumulative production for the Mesaverde and for the Dakota in this well since its completion, a chronological listing of the orders extending the boundary of the Gonzales Mesaverde pool, and a recap of production and pressures measured in Jicarilla Contract 146 No. 11 over the past several years.

Shut-in wellhead pressure is essentially the same for the Mesaverde and for the Dakota in Well No. 11. As such, underground waste should not be caused by the granting of the proposed commingling.

Based on the production performance of the Gonzales Mesaverde averaged over the entire year of 1974 in Well No. 11 and the production performance of the Basin Dakota in this same well for the same period of time, we recommend allocation of the commingled production be:

Gonzales Mesaverde 66% gas: 40% liquids  
Basin Dakota 34% gas: 60% liquids

Production during May, 1975 likewise supports this allocation.

Joe D. Ramey  
Page Three  
October 8, 1975

El Paso markets the gas and liquids from the No. 11 well. In our opinion, the commercial value of the commingled production will not be less than the sum of the values of the individual streams. The proposed commingling may result in the recovery of additional hydrocarbons from each of the subject pools, thereby preventing waste, and will not violate correlative rights.

All offset operators and the U.S. Geological Survey, since Tribal lands are involved, are being notified of this commingling request by certified mailing of a copy of this letter application. We ask that each party waive objection to this commingling request by signing in the space provided below, sending one signed copy to you, one to me, and retaining the third copy for their own files.

Yours very truly,



R. B. Giles  
RBG:do

cc: A. R. Kendrick, Supervisor  
District No. 3  
New Mexico Oil Conservation Commission  
1000 Rio Brazos Road  
Aztec, New Mexico 87410

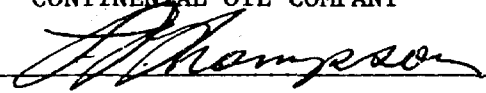
I have no objection to Amoco's plans to downhole commingle gas production from the Gonzales Mesaverde formation and from the Basin Dakota formation in Jicarilla Contract 146 No. 11 Well, K-4-25N-5W.

MARATHON OIL COMPANY

By: \_\_\_\_\_

Date: \_\_\_\_\_

CONTINENTAL OIL COMPANY

By: 

Date: 11-3-75

UNITED STATES GEOLOGICAL SURVEY

By: \_\_\_\_\_

Date: \_\_\_\_\_

VERIFICATION AND AFFIDAVIT

STATE OF COLORADO    )  
                              : ss  
COUNTY OF DENVER    )

R. B. Giles, of lawful age, being first duly sworn on his oath, deposes and says:

That he is employed in an engineering capacity by Amoco Production Company in its Denver, Colorado, office; that Amoco's application for approval to downhole commingle gas production from the Gonzales Mesaverde and from the Basin Dakota in its Jicarilla Contract 146 No. 11 well, K-4-25N-5W, in Rio Arriba County, New Mexico, was prepared under his direction and supervision; that the matters and things therein set forth are true and correct to the best of his knowledge and belief; and that a copy thereof was sent by certified mail from Applicant's Denver, Colorado, office on October 8, 1975 to the following parties, at the addresses shown herein, to wit:

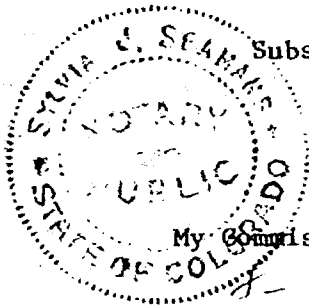
P. T. McGrath (2)	Marathon Oil Company	Continental Oil Company
U. S. Geological Survey	P. O. Box 120	P. O. Box 460
P. O. Box 965	Casper, Wyoming 82601	Hobbs, New Mexico 88240
Farmington, New Mexico 88240		

and to the best of his information, knowledge and belief, the parties above named are the only parties to whom notice of such application is required to be given in accordance with New Mexico Oil Conservation Commission rules.

R B Giles  
R. B. Giles

Subscribed and sworn to before me this 8th day of October, 1975.

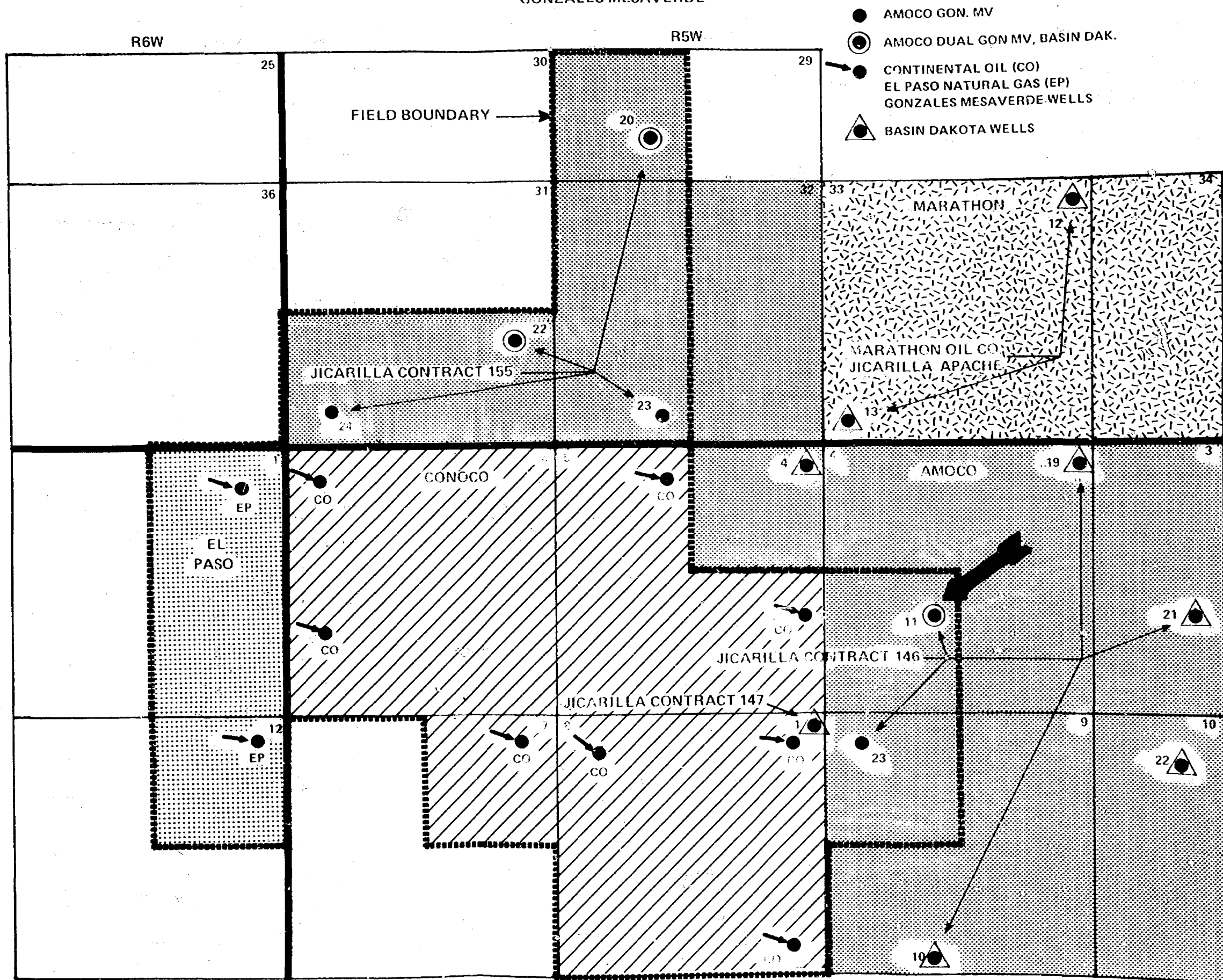
Laura J. Seaman  
Notary Public



My Commission expires:

8-15-76

# GONZALES MESAVERDE





# GONZALES MESAVERDE

R5W

- AMOCO GON. MV
- ⊙ AMOCO DUAL GON MV, BASIN DAK.
- CONTINENTAL OIL (CO)
- EL PASO NATURAL GAS (EP)
- GONZALES MESAVERDE WELLS
- △ BASIN DAKOTA WELLS

FIELD BOUNDARY

T  
26  
N

MARATHON

MARATHON OIL CO  
JICARILLA APACHE

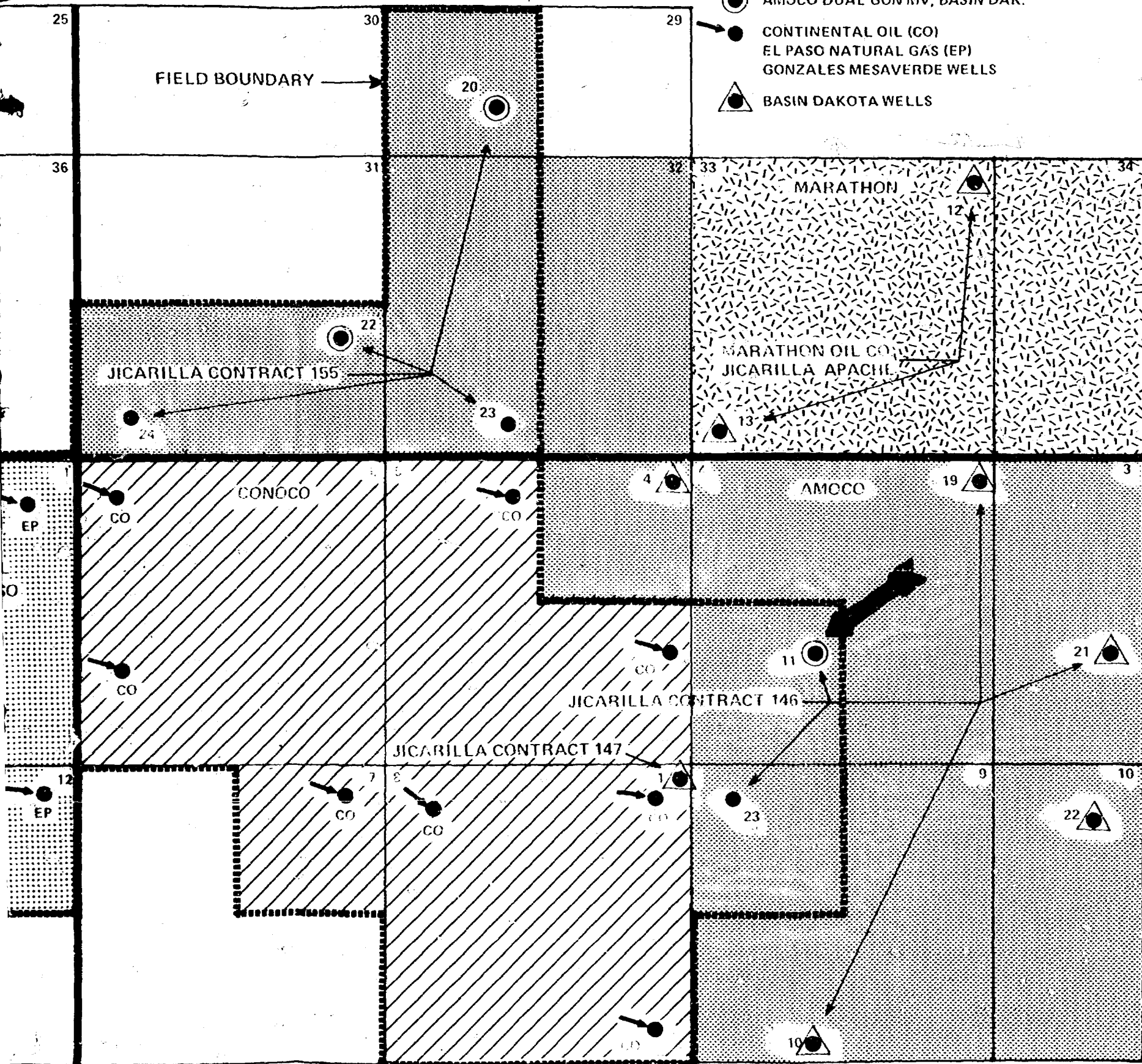
T  
25  
N

CONOCO

AMOCO

JICARILLA CONTRACT 146

JICARILLA CONTRACT 147



COMMINGLING OF GAS DOWNHOLE  
JICARILLA CONTRACT 146 NO. 11

WELLBORE DIAGRAM:

\*Original Completion 6--30--61:

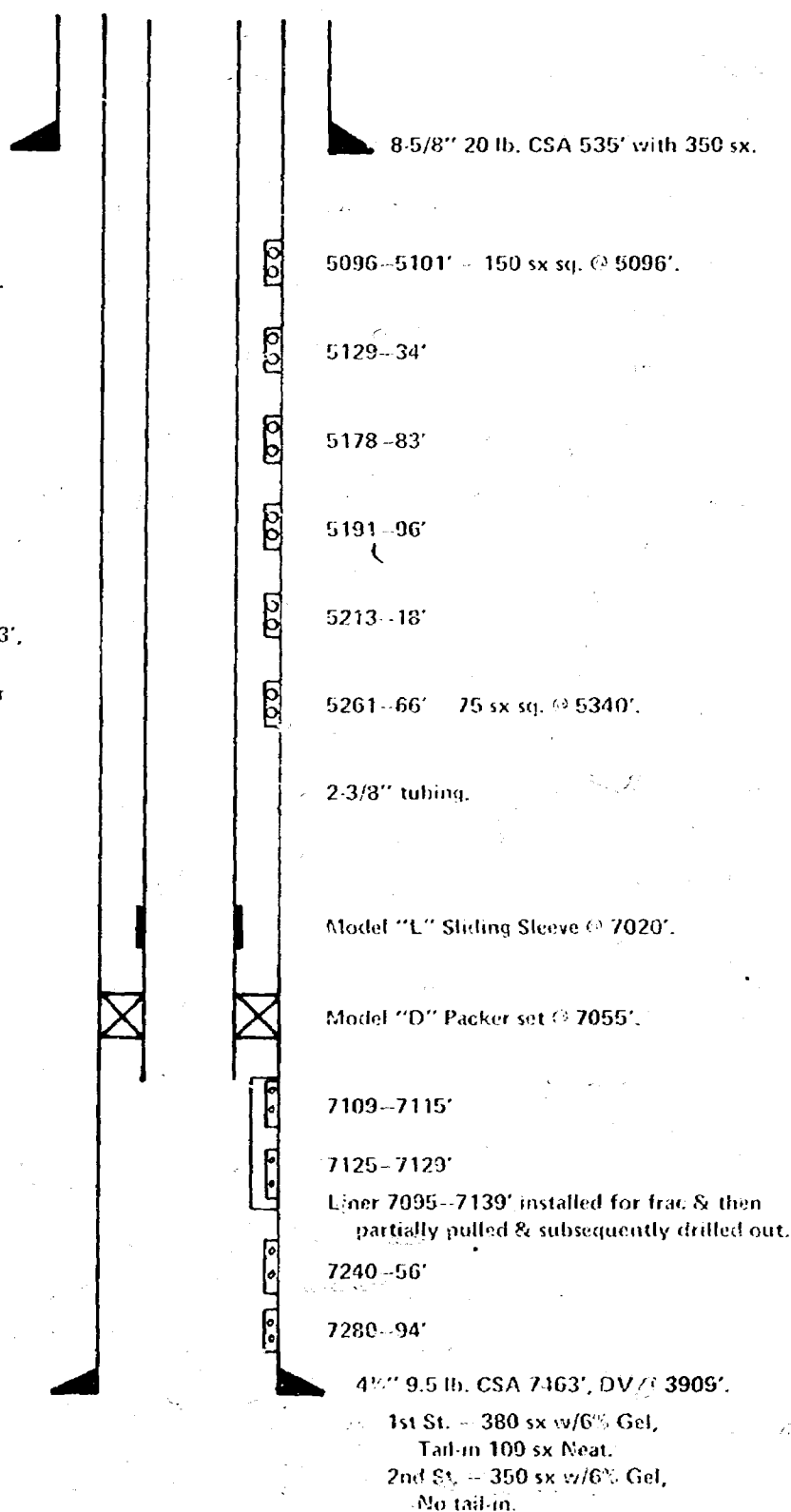
Perf with 6 SPF 7109--7115' &  
7125--7129'. SWHYF with 33,600  
gal. 1% CaCl<sub>2</sub> water & 5 lb. J-98/  
1000 gal. & 30,000 lb. sn. 1725  
psi SIP.

\*Restimulation 11--20--68:

Perf with 2 SPF 7240--56', 7280--94'.  
Set select liner 7095--7139' (over  
perfs 7109--7129'). Frac with 36,630  
gal. water & 25,000 lb. 20--40 sn &  
2000 lb. 10--20 sn, sanded off.  
CO to 7149' & attempted to pull  
liner & left 38 1/2' in hole. Drilled  
liner & CO to 7419'.

\*Recompletion in Mesaverde 11--3--72:

Sq. 75 sx cmt @ 5340'.  
Sq. 150 sx cmt @ 5096'.  
Perf 5096--5101', 5129--34', 5178--83',  
5191--96', 5213--18', 5261--66' with  
1 SPF. SWHYF with 34,608 gal. water  
with 0.8% KCl & 10 lb. Gel/1000 gal.  
with 5000 lb. 20--40 sn, 25,000 lb.  
10--20 sn, 8000 lb. 8--12 sn.

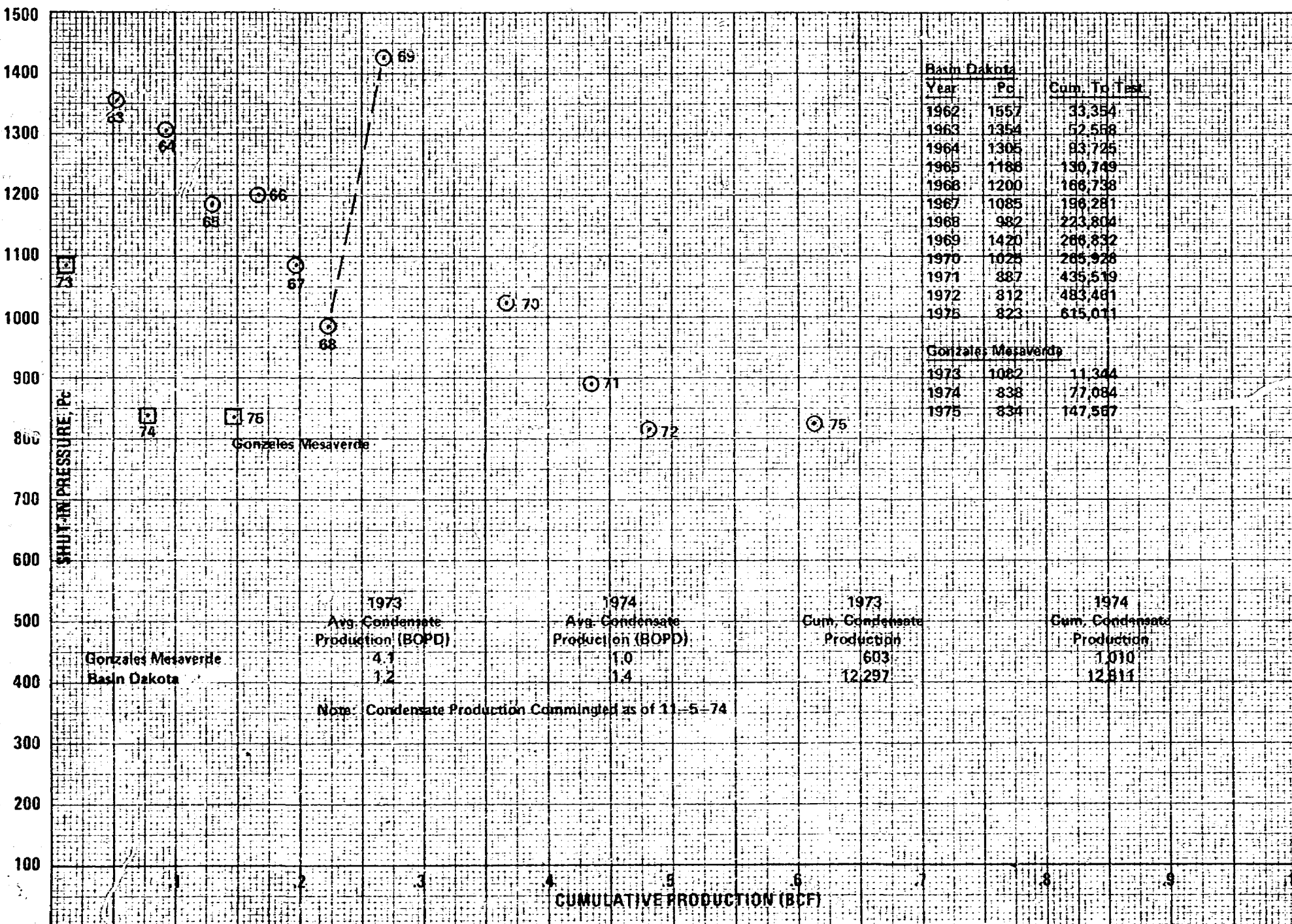


NO. 315 20 DIVISIONS PER INCH BOTH WAYS. 150 BY 200 DIVISIONS.

codex  
GRAPH PAPER

IN STOCK DIRECT FROM CODEX BOOK CO., NORWOOD, MASS. 02062  
PRINTED IN U.S.A.

62



JICARILLA CONTRACT 146 NO. 11  
Pc VS. CUMULATIVE PRODUCTION

GONZALES MESAVERDE POOL

Gonzales Mesaverde (Gas), Rio Arriba County, New Mexico

Discovery Date: November 4, 1971

Discovery Well: Continental Oil Company  
AXI Apache "J" No. 18-A, Sec. 8-25N-5W

Average Producing Depth: Top 4607'

Creating Order: R-4311

Extending Boundaries Order: R-4690, R-4888, R-4963

R-4311 Finding (12): That there is a need for the creation of a new gas pool in Rio Arriba County, New Mexico, for the production of gas from the Mesaverde Formation, said pool to bear the designation of Gonzales Mesa-Mesaverde Pool.

Original Boundaries: T-25-N, R-5-W  
Section 5: W/2  
Section 6: All  
Section 7: NE/4  
Section 8: All

Extended R-4690: T-25-N, R-5-W  
Section 4: SW/4  
Section 5: SE/4  
Section 9: NW/4

T-26-N, R-5-W  
Section 29: SW/4  
Section 31: S/2  
Section 32: W/2

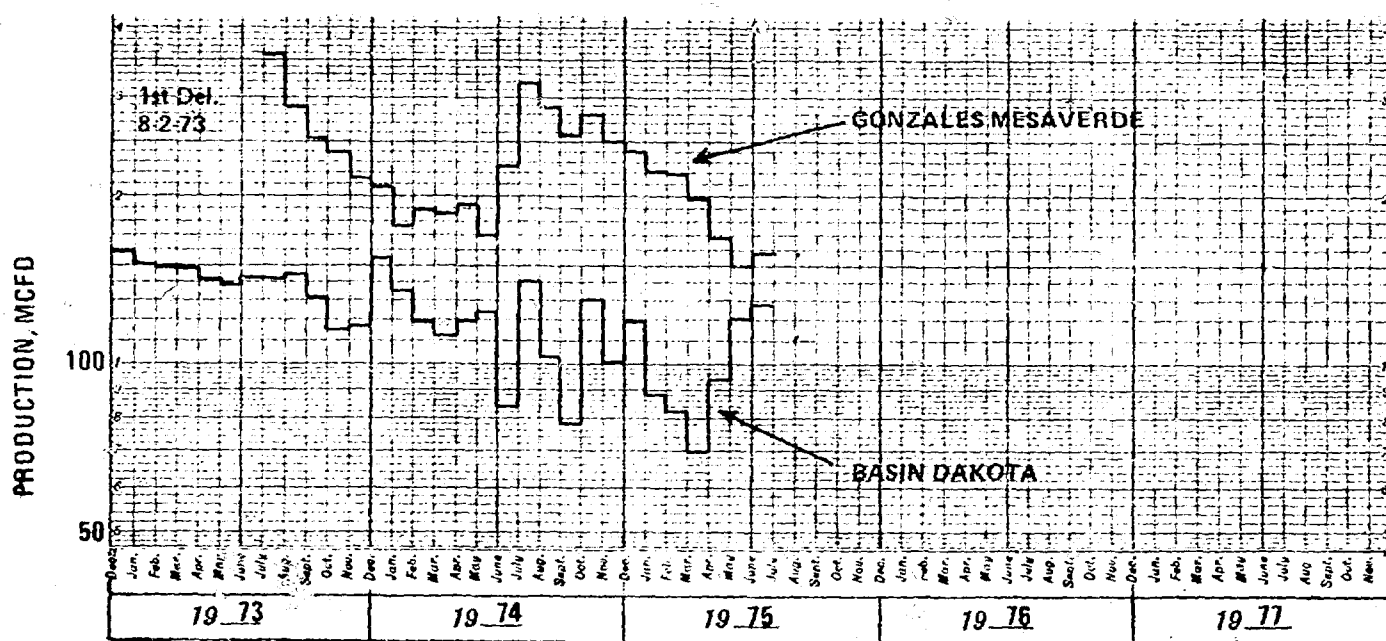
Extended R-4888: T-25-N, R-6-W  
Section 1: NE/4

Extended R-4963: T-25-N, R-6-W  
Section 1: SE/4  
Section 12: NE/4

Summary:	<u>T-25-N, R-5-W</u>	<u>T-25-N, R-6-W</u>	<u>T-26-N, R-5-W</u>
	Section 4: SW/4	Section 1: E/2	Section 29: SW/4
	Section 5: SE/4	Section 12: NE/4	Section 31: S/2
	W/2		Section 32: W/2
	Section 6: All		
	Section 7: NE/4		
	Section 8: All		
	Section 9: NW/4		

PRODUCTION AND PRESSURES  
JICARILLA CONTRACT 146 NO. 11

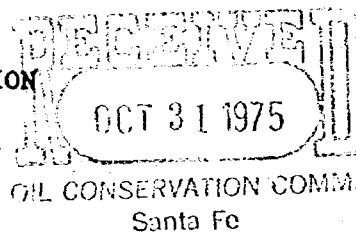
	1973				1974				1975			
	BASIN DAK.		GON. MV		BASIN DAK.		GON. MV		BASIN DAK.		GON. MV	
	DAYS	MCFD	DAYS	MCFD	DAYS	MCFD	DAYS	MCFD	DAYS	MCFD	DAYS	MCFD
JAN.	32	159			32	154	32	207	32	118	29	240
FEB.	24	150			27	136	31	173	24	88	24	223
MAR.	32	149			32	119	31	189	32	83	32	219
APR.	32	148			24	112	24	186	32	69	32	196
MAY	32	143			32	120	32	196	32	94	32	169
JUNE	31	139			32	124	32	170	25	121	25	152
JULY	24	143			32	84	32	225	28	128	27	157
AUG.	32	142	24	373	32	140	26	307				
SEP.	32	144	26	286	32	102	32	285				
OCT.	29	131	27	251	24	79	24	254				
NOV.	32	116	32	238	28	130	30	278				
DEC.	25	118	24	213	32	100	32	248				



	YEAR	O	TPF	CPF	Pc	P <sub>w</sub>	P <sub>d</sub>	D
BASIN DAKOTA	1972	158	298	521	812	319	406	144
	1975	104	238	0	823	365	412	98
GONZALES MESAVERDE	1973	272	0	291	1082	319	866	135
	1974	320	0	321	838	324	419	291
	1975	156	0	323	834	326	417	142

OIL CONSERVATION COMMISSION  
Aztec DISTRICT

OIL CONSERVATION COMMISSION  
BOX 2088  
SANTA FE, NEW MEXICO



DATE OCTOBER 27, 1975

RE: Proposed MC \_\_\_\_\_  
Proposed DHC ✓  
Proposed NSL \_\_\_\_\_  
Proposed SWD \_\_\_\_\_  
Proposed WFX \_\_\_\_\_  
Proposed PMX \_\_\_\_\_

Attn: Carl Ellrog

Gentlemen:

I have examined the application dated October 8, 1975  
for the Amoco Prod. Co. Jicarilla Cont. 146 #11 K-4-25-5  
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

approve  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Yours very truly,

W. Hendrick

dr/

BEFORE THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
COMMISSION OF NEW MEXICO FOR  
THE PURPOSE OF CONSIDERING:

CASE NO. 5588

Order No. R- 5133

APPLICATION OF AMOCO PRODUCTION COMPANY  
FOR DOWNHOLE COMMINGLING, RIO ARRIBA  
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on Dec 3 ~~November 19~~,  
19 75 at Santa Fe, New Mexico, before Examiner Daniel S. Nutter ~~ERS~~

NOW, on this Dec day of November, 1975, the Commission,  
a quorum being present, 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 Commission has jurisdiction of this cause and the subject  
matter thereof.

(2) That the applicant, Amoco Production Company, is the  
owner and operator of the Jicarilla Contract 146 Well No. 11,  
located in Unit K of Section 4, Township 25 North, Range  
5 West, NMPM, Rio Arriba County, New Mexico.

(3) That the applicant seeks authority to commingle  
Gonzales-Mesaverde and Basin-Dakota production  
within the wellbore of the above-described well.

(4) That from the Gonzales-Mesaverde zone, the  
subject well is capable of low marginal production only.

(5) That from the Basin-Dakota zone, the  
subject well is capable of low marginal production only.

(6) That the proposed commingling may result in the recovery  
of additional hydrocarbons from each of the subject pools, thereby  
preventing waste, and will not violate correlative rights.

Case No. \_\_\_\_\_  
Order No. R- \_\_\_\_\_

(7) That the reservoir characteristics of each of the subject zones are such that underground waste would not be caused by the proposed commingling provided that the well is not shut-in for an extended period.

(8) That to afford the Commission the opportunity to assess the potential for waste and to expeditiously order appropriate remedial action, the operator should notify the <sup>Aztec</sup>~~Rio Arriba~~ district office of the Commission any time the subject well is shut-in for 7 consecutive days.

(9) That in order to allocate the commingled production to each of the commingled zones in the subject well, <sup>67 percent and</sup>~~60 percent~~ percent of the commingled <sup>gas and oil</sup> production, <sup>respectively,</sup> should be allocated to the Gonzales-Mesaverde zone, and <sup>33 percent and 60</sup>~~33 percent~~ percent of the commingled <sup>gas and oil</sup> production, <sup>respectively,</sup> to the Basin-Dakota zone.

IT IS THEREFORE ORDERED:

(1) That the applicant, Amoco Production Company, is hereby authorized to commingle Gonzales-Mesaverde and Basin-Dakota production within the wellbore of the Jicarilla Contract 146 Well No. 11, located in Unit K of Section 4, Township 25 North, Range 5 West, NMPM, Rio Arriba County, New Mexico.

(2) That <sup>67 percent</sup>~~and 40~~ percent of the commingled <sup>gas and oil</sup> production, <sup>respectively,</sup> shall be allocated to the Gonzales-Mesaverde zone and <sup>33 percent and 60</sup>~~33 percent~~ percent of the commingled <sup>gas and oil</sup> production, <sup>respectively,</sup> shall be allocated to the Basin-Dakota zone.

(3) That the operator of the subject well shall immediately notify the Commission's Aztec district office any time the well has been shut-in for 7 consecutive days and shall concurrently present, to the Commission, a plan for remedial action.

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

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