

EXHIBIT I

PRESENT AND PROPOSED MESAVERDE COMPLETIONS
JICARILLA APACHE LEASE
RIO ARRIBA COUNTY, NEW MEXICO

Present Blanco Mesaverde/Basin Dakota dually completed wellbores:

Well No. 8E 1685' FSL 1685' FEL, Sec. 27, T26N-R5W
Perforated Intervals:
 Basin Dakota: 7250' - 7490'
 Blanco Mesaverde: 5250' - 5274

Well No. 9E 1040' FSL 1685' FEL, Sec. 28, T26N-K5W
Perforated Intervals:
 Basin Dakota: 7234' - 7466'
 Blanco Mesaverde: 5232' - 5336'

Well No. 13E 1850' FNL 930' FWL, Sec. 33, T26N-R5W
Perforated Intervals:
 Basin Dakota: 7100' - 7195'
 Blanco Mesaverde: 5126' - 5150'

Well No. 14E 1850' FNL 1685' FWL, Sec. 34, T26N-R5W
Perforated Intervals:
 Basin Dakota: 7100' - 7332'
 Blanco Mesaverde: 4950' - 5241'

Well No. 16E 825' FNL 955' FEL, Sec. 34, T26N-R5W
Perforated Intervals:
 Basin Dakota: 7200' - 7430'
 Blanco Mesaverde: 5148' - 5278'

Present Basin Dakota only wellbores to be recompleted in the Blanco Mesaverde and downhole commingled with the Basin Dakota by January 1, 1991.

Well No. 8 990' FSL, 990' FEL, Sec. 27, T26N-R5W
Well No. 9 990' FNL, 1100' FEL, Sec. 28, T26N-R5W
Well No. 10E 1040' FNL, 1685' FWL, Sec. 27, T26N-R5W
Well No. 11E 955' FNL, 1685' FWL, Sec. 28, T26N-R5W
Well No. 12 800' FNL, 800' FEL, Sec. 33, T26N-R5W
Well No. 16 1600' FSL, 900' FEL, Sec. 34, T26N-R5W

BLL/014.274/cb

BEFORE EXAMINER CATANACH	
OIL CONSERVATION DIVISION	
<i>Marathon</i>	EXHIBIT NO. <u>1</u>
CASE NO.	<u>9733</u>

EXHIBIT II

OFFSET OPERATORS
JICARILLA APACHE LEASE
Sections 27, 28, 33, 34, T26N, R5W
RIO ARriba COUNTY, NEW MEXICO

Amoco Production Company
2325 E. 30th Street
Farmington, New Mexico

Union Texas Petroleum
375 U.S. Highway 64, NBU 3004
Farmington, New Mexico 87401

Conoco Inc.
P. O. Box 1959
Midland, Texas 79702

Southern-Union Exploration
324 Highway 64, NBU 3001
Farmington, New Mexico 87401

Meridian Oil Inc.
P. O. Box 4289
Farmington, New Mexico 87499

BLL/014.274/cb

BEFORE EXAMINER CATANACH	
OIL CONSERVATION DIVISION	
<i>Mauston</i>	EXHIBIT NO. <u>2</u>
CASE NO.	<u>9733</u>

PICTURED GAMMA RAY DENSITY
CLIFFS

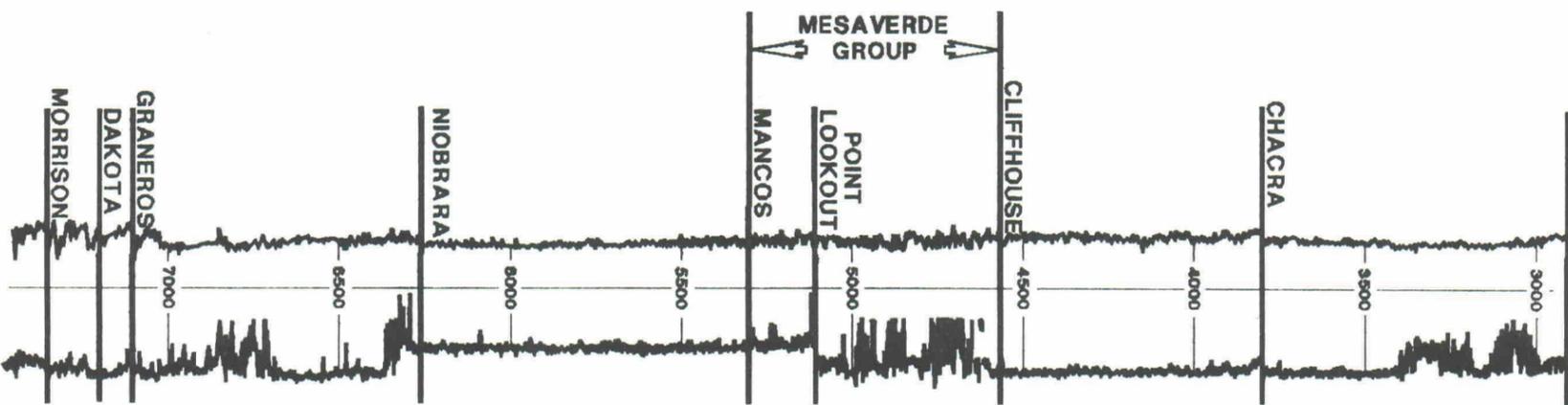
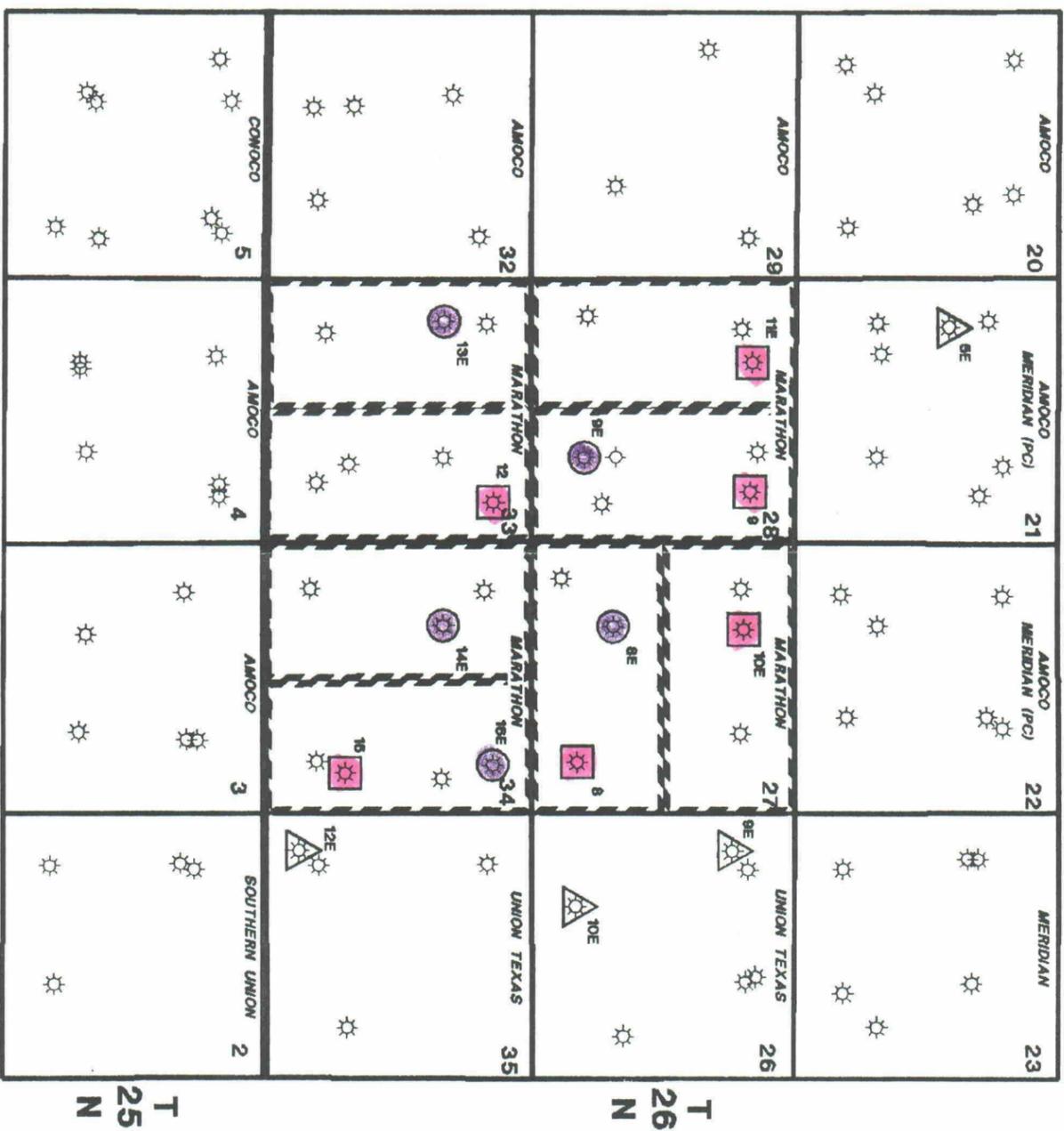


EXHIBIT 3

R-5-W



MARATHON OIL COMPANY
MID-CONTINENT REGION

JICARILLA APACHE
LEASE

RIO ARRIBA CO., NEW MEXICO



- CURRENT DUAL MV/DK COMPLETION
- △ MV/DK DOWNHOLE COMMINGLED
- PROPOSED MV RECOMPLETION
- - - ACREAGE DEPRECATION OUTLINE

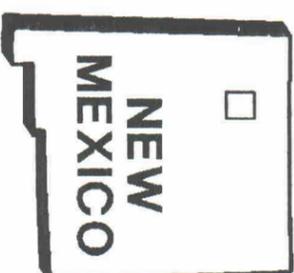


EXHIBIT 4

Mid-Continent Region
Exploration United States

K. ELL



**Marathon
Oil Company**

P.O. Box 552
Midland, Texas 79702
Telephone 915/682-1626

May 19, 1989

State of New Mexico
Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Division Director

Re: Rule 303 C - Downhole Commingling

Marathon Oil Company requests permission to downhole commingle production in its Jicarilla Apache Well No. 14E. The legal description for this well is 1850' FNL and 1685' FWL, Section 34, T26N, R5W, Rio Arriba County, New Mexico. This well is a dual completion under Division Order No. MC-2973. This well produces from the Basin Dakota from perforations at 7100'-7332' and from the Blanco Mesaverde from perforations at 4952'-5243'.

An attached C-116 shows the most recent production from the Basin Dakota formation. The Blanco Mesaverde formation has not produced separately. However, during a 30 day commingled test of these formations the well produced at a stabilized rate of 549 MCFPD, 10.2 BCPD and 2.6 BWPD. Previous commingling of these two zones by other operators in this area have shown that the gas, condensate and waters produced by these two formations are compatible and will not result in formation damage if commingled. The value of the commingled gas and condensate will not be reduced by commingling. Ownership of the two zones is also the same. The bottomhole pressures of the two zones corrected to a depth of 5000' for purposes of comparison is 1287 psia for the Blanco Mesaverde and 1191 psia for the Basin Dakota.

Letters have been sent to all offset operators and the BLM notifying them of the proposed commingling. A copy of one of these letters is attached. Also attached is a production decline curve for the past 5 years for the Basin Dakota formation. A map showing the location of the well is also attached. Production should be assigned to the Basin Dakota based on extrapolation of the decline curve. The difference between total production and extrapolated Dakota production should be assigned to the Blanco Mesaverde.

BEFORE EXAMINER CATANACH
OIL CONSERVATION DIVISION

Marathon EXHIBIT NO. 4

CASE NO: 9733

Marathon Oil Company

May 19, 1989

Page 2

If any further questions or comments should arise, please contact Mr. M. A. Zoller, Production Superintendent at (915) 682-1626. Thank you.

Sincerely,

MARATHON OIL COMPANY

A handwritten signature in cursive script that reads "Nancy Engler".

Nancy Engler
Production Engineer

NCE/akp
002-89



**Marathon
Oil Company**

P.O. Box 552
Midland, Texas 79702
Telephone 915/682-1626

May 16, 1989

Union Texas Petroleum
4001 Bloomfield Highway
Farmington, New Mexico 87410

Attention: Operations Manager

Re: Marathon Oil Company - Jicarilla Apache Well No. 14E
1850' FNL, 1685' FWL, Sec. 34, T26N, R5W, Unit F
Rio Arriba County, New Mexico

Dear Sir:

Marathon Oil Company is requesting permission from the Oil Conservation Division to downhole commingle production in the above referenced well. The Jicarilla Apache Well No. 14E is presently dually completed in the Blanco Mesaverde and the Basin Dakota. Combined production from this well will average approximately 600 MCF/GPD, 10 BCPD, and 2.5 BWPD.

If you have no objection to this request, please sign the waiver at the bottom of this letter and return it to my attention. If you have any questions, please contact this office. Thank you.

Sincerely,

MARATHON OIL COMPANY

A handwritten signature in cursive script that reads 'Nancy Engler'.

Nancy Engler
Production Engineer

NCE/akp
003-89

This is to acknowledge that the undersigned waives objection to the downhole commingling, as proposed by Marathon Oil Company in this letter.

Company

Date

Company Representative

Title



**Marathon
Oil Company**

P.O. Box 552
Midland, Texas 79702
Telephone 915/682-1626

May 16, 1989

Amoco
P.O. Box 800
Denver, Colorado 80201

Attention: Micheal Cuba

Re: Marathon Oil Company - Jicarilla Apache Well No. 14E
1850' FNL, 1685' FWL, Sec. 34, T26N, R5W, Unit F
Rio Arriba County, New Mexico

Dear Sir:

Marathon Oil Company is requesting permission from the Oil Conservation Division to downhole commingle production in the above referenced well. The Jicarilla Apache Well No. 14E is presently dually completed in the Blanco Mesaverde and the Basin Dakota. Combined production from this well will average approximately 600 MCFGPD, 10 BCPD, and 2.5 BWPD.

If you have no objection to this request, please sign the waiver at the bottom of this letter and return it to my attention. If you have any questions, please contact this office. Thank you.

Sincerely,

MARATHON OIL COMPANY

A handwritten signature in cursive script that reads 'Nancy Engler'.

Nancy Engler
Production Engineer

NCE/akp
003-89

This is to acknowledge that the undersigned waives objection to the downhole commingling, as proposed by Marathon Oil Company in this letter.

Company

Date

Company Representative

Title



**Marathon
Oil Company**

P.O. Box 552
Midland, Texas 79702
Telephone 915/682-1626

May 16, 1989

Meridian Oil
3535 E. 30th
Farmington, New Mexico 87401

Attention: Alan Alexander

Re: Marathon Oil Company - Jicarilla Apache Well No. 14E
1850' FNL, 1685' FWL, Sec. 34, T26N, R5W, Unit F
Rio Arriba County, New Mexico

Dear Sir:

Marathon Oil Company is requesting permission from the Oil Conservation Division to downhole commingle production in the above referenced well. The Jicarilla Apache Well No. 14E is presently dually completed in the Blanco Mesaverde and the Basin Dakota. Combined production from this well will average approximately 600 MCFGPD, 10 BCPD, and 2.5 BWPD.

If you have no objection to this request, please sign the waiver at the bottom of this letter and return it to my attention. If you have any questions, please contact this office. Thank you.

Sincerely,

MARATHON OIL COMPANY

A handwritten signature in cursive script that reads 'Nancy Engler'.

Nancy Engler
Production Engineer

NCE/akp
003-89

This is to acknowledge that the undersigned waives objection to the downhole commingling, as proposed by Marathon Oil Company in this letter.

Company

Date

Company Representative

Title

Submit 2 copies to Appropriate District Office:
DISTRICT I
 P.O. Box 1980, Hobbs, NM 88240
DISTRICT II
 P.O. Drawer DD, Artesia, NM 88210
DISTRICT III
 1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
 Energy, Minerals and Natural Resources Department
OIL CONSERVATION DIVISION
 P.O. Box 2088
 Santa Fe, New Mexico 87504-2088

Form C-116
 Revised 1/1/89

GAS - OIL RATIO TEST

Operator Marathon Oil Company Pool Blanco Mesaverde/Basin Dakota County Rio Arriba
 Address P. O. Box 552, Midland, Texas 79703 Type of Test Scheduled Completion Special

LEASE NAME	WELL NO.	LOCATION			DATE OF TEST	SIZING TESTS	CHOKESIZE	TBG. PRESS.	DAILY ALLOW. ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST			GAS - OIL RATIO CU FT/BBL
		U	S	T							R	WATER BBL'S	GRAV. OIL	
<u>Jicarilla Apache</u>	14E	F	34	26N	5W	11-2-88	*P 1.000	299		24	2.9	10	560	56000
	Basin Dakota	14E	F	34	26N	5W	P							

*Commingled Test includes production from both formations.

Instructions:

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Division.
 Gas volumes must be reported in MCF measured at a pressure base of 15,025 psia and a temperature of 60° F. Specific gravity base will be 0.60.
 Report casing pressure in lieu of tubing pressure for any well producing through casing.

(See Rule 301, Rule 1116 & appropriate pool rules.)

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

Signature Nancy Engler

Printed name and title Nancy Engler Production Engineer

Date 5/19/89 Telephone No. (915) 682-1626

Jicarilla Apache Well No. 14E

Allocation formula for production from
Blanco Mesaverde and Basin Dakota

Exponential decline factors: Mesaverde (MV) = unk.
Dakota (DK) = .0334/month

Where DK_1 => current production
 MV_1 , DK_2 => estimated production for following month

$$\ln (DK_1) - .0334 = \ln (DK_2)$$

After estimating the production for the Basin Dakota formation,
production can be allocated to the Mesaverde based on the
difference between actual production (T) and estimated Dakota
production (DK_2),

$$[T - DK_2 = MV_2]$$

or production can be allocated based on a straight percentage:

50% Blanco Mesaverde
50% Basin Dakota

NE:akp

File No. 006-89

November 1988

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPPLICATE (with instructions on reverse side)

LEASE DESIGNATION AND SERIAL NO. Federal Tribal #154

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT" for such proposals.

1. WELL TYPE: OIL WELL, GAS WELL, OTHER (checked) #344320520
2. NAME OF OPERATOR: Marathon Oil Company
3. ADDRESS OF OPERATOR: P.O. Box 552, Midland, Texas 79702
4. LOCATION OF WELL: SE NW Unit Letter F 1850' FNL & 1685' FWL
14. PERMIT NO.: 30-039-22591
15. ELEVATIONS: 6566' GL, 6579' KB
7. UNIT AGREEMENT NAME: 14E
8. FARM OR LEASE NAME: Jicarilla Apache
9. WELL NO.: 14E
10. FIELD AND POOL, OR WILDCAT: Blanco Mesaverde/Basin Dako
11. SEC., T., R., M., OR BLM. AND SURVEY OR AREA: Sec. 34, T26N, R5W
12. COUNTY OR PARISH: Rio Arriba
13. STATE: N. Mexico

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data
NOTICE OF INTENTION TO: TEST WATER SHUT-OFF, FRACTURE TREAT, SHOOT OR ACIDIZE, REPAIR WELL, (Other) Commingling Zones
PULL OR ALTER CASING, MULTIPLE COMPLETE, ABANDON, CHANGE PLANE, (Other) X
SUBSEQUENT REPORT OF: WATER SHUT-OFF, FRACTURE TREATMENT, SHOOTING OR ACIDIZING, (Other), REPAIRING WELL, ALTERING CASING, ABANDONMENT*

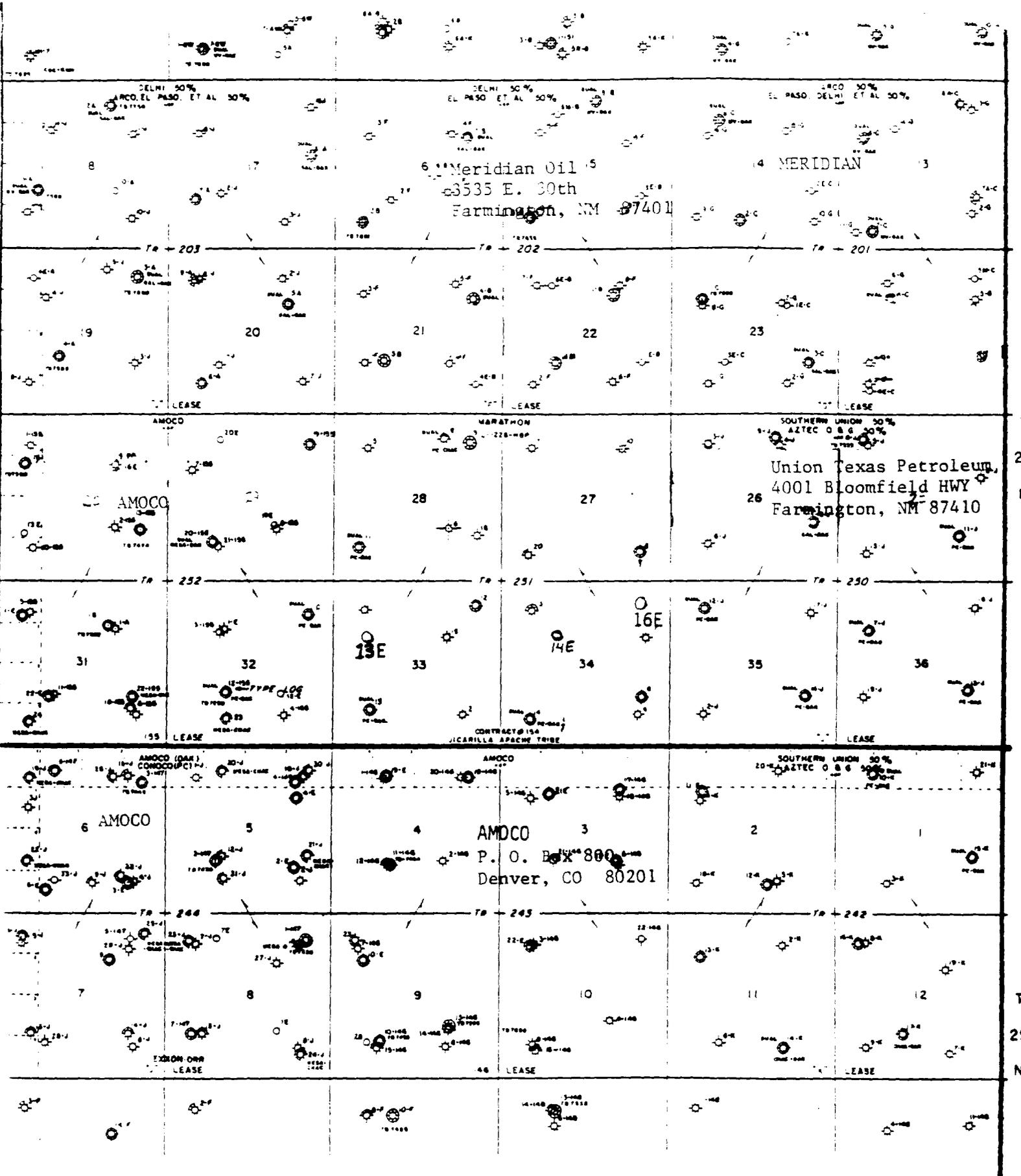
17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS: (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

Marathon is applying for permission from the Oil Conservation Division to downhole commingle production from the Blanco Mesaverde and Basin Dakota formations. These two formations were commingled for a 30 day test period from Oct. 2, 1988 to Nov. 2, 1988. The well will begin commingled production upon receiving approval from the NMOCD, estimated to be received by July 1, 1989.

18. I hereby certify that the foregoing is true and correct
SIGNED [Signature] TITLE Production Superintendent DATE 6-12-89

(This space for Federal or State office use)
APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side



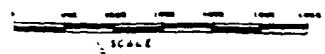
R 5 W



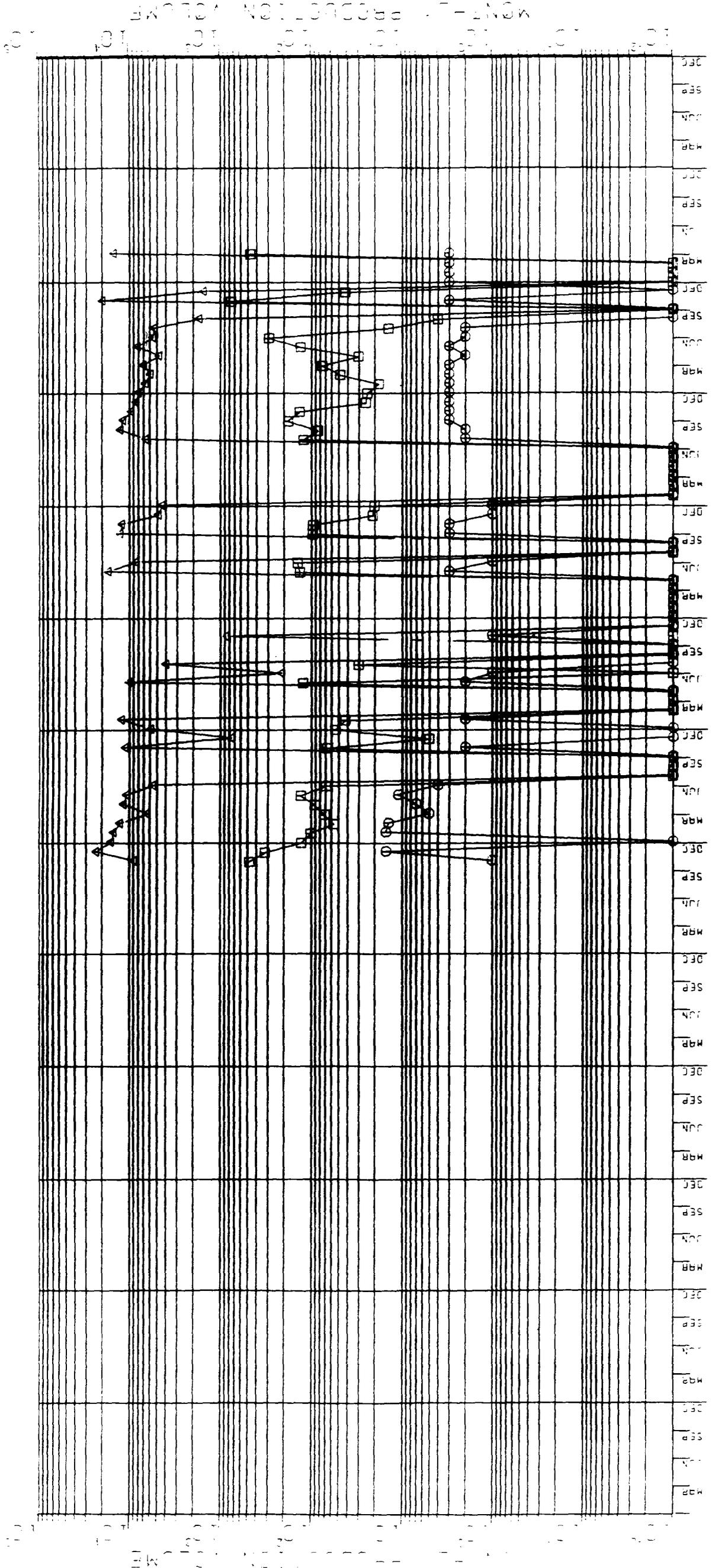
MARATHON OIL COMPANY

- LEGEND -
- ⊙ PICTURED CLIFFS GAS WELL
 - ⊙ MESAVEVERDE GAS WELL
 - DAKOTA OIL WELL
 - ⊙ DAKOTA GAS WELL
 - ⊙ PICTURE CLIFFS & CHACRA GAS WELL
 - ⊙ PICTURE CLIFFS DEEPEMED TO DAKOTA
 - ⊙ CHACRA GAS WELL

JICARILLA AREA
RIO ARRIBA COUNTY, NEW MEXICO



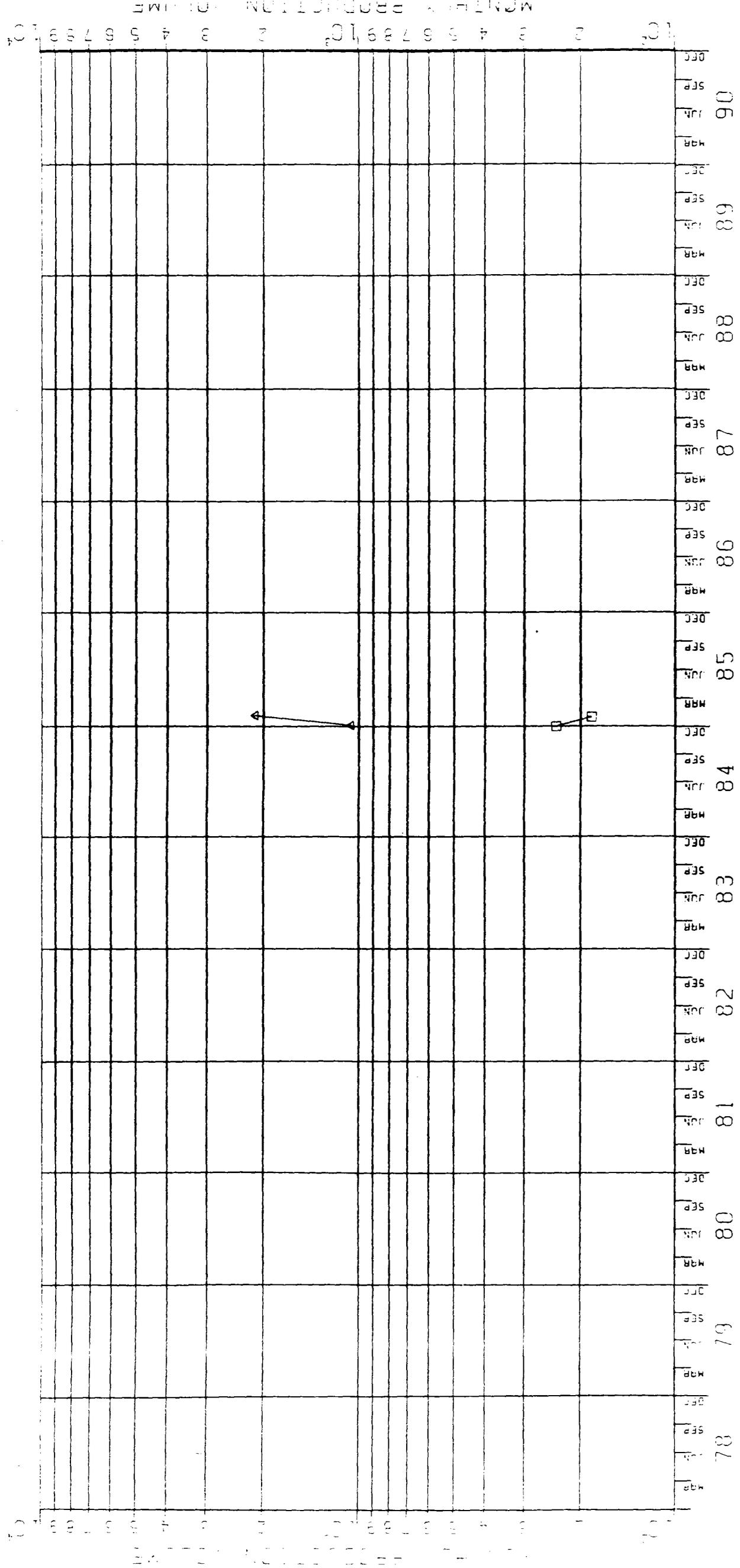
FIELD JICARILLA
 RESERVOIR BASIN DAKOTA
 LEASE JICARILLA APACHE BLANCO PICTURE CLIFFS CONT-90154
 WELL JICARILLA BD 14E



OIL COND MONTHLY VOL
 GAS MONTHLY VOLUME
 WATER MONTHLY VOLUME

FIELD - JICARILLA
 RESERVOIR - BLANCO MESAVERDE
 LEASE - JICARILLA APACHE
 WELL - JICARILLA PL 14E

BLANCO PICTURE CLIFFS CONT -90154



OIL COND MONTHLY VOL
 GAS MONTHLY VOLUME

MONTHLY PRODUCTION VOLUME

10⁴ 2 3 4 5 6 7 8 9 10



P.O. Box 552
Midland, Texas 79702
Telephone 915/682-1626

August 21, 1989

State of New Mexico
Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Division Director

RE: Rule 303 A - Exception

Marathon Oil Company requests permission to downhole commingle production in its Jicarilla Apache Well No. 8E. The legal description for this well is 1685' FSL and 1685' FWL, Section 27, T26N, R5W, Rio Arriba County, New Mexico. This well is a dual completion under Administrative Order No. MC-2974 and produces from the Basin Dakota Pool through perforations at 7250'-7490' and from the Blanco Mesaverde Pool through perforations at 5250'-5312'.

An attached C-116 shows the most recent production from the Basin Dakota and the Blanco Mesaverde. Previous commingling of these two zones by other operators in this area have shown that the gas, condensate and waters produced by these two formations are compatible and will not result in formation damage if commingled. The value of the commingled gas and condensate will not be reduced by commingling. Ownership of the two zones is also the same. The bottom-hole pressures of the two zones corrected to a depth of 5250' for purposes of comparison is 917 psia for the Blanco Mesaverde and 820 psia for the Basin Dakota.

This well is currently not capable of lifting the Mesaverde condensate to the surface. This loading up of liquid as evidenced by 290 feet of fluid above the perforations (from fluid level measurements) applies a backpressure on the formation which restricts the gas flow. The proposed downhole commingling will allow the Dakota gas, while there are still reserves and pressure available, to "gas lift" the reservoir fluids from the Mesaverde and to relieve the reservoir backpressure. Thus, the downhole commingling should prevent the loss of gas and liquid hydrocarbon reserves. This well last produced condensate in September, 1987.

Letters have been sent to all offset operators notifying them of the proposed commingling. A copy of one of these letters is attached. Also attached is a production decline curve for the past 7 years for the Basin Dakota and the Blanco Mesaverde Pools. A map showing the location of the well is also attached. Production should be assigned to each of the zones using a straight percentage split: Mesaverde - 40%, Dakota - 60%. This split is based upon the latest production figures for the well.

Sincerely,

A handwritten signature in cursive script that reads 'Robert L. Ellis'.

Robert L. Ellis
Production Engineer

RLE/BLL/011.274/cb

Submit 2 copies to Appropriate District Office.
DISTRICT I
 P.O. Box 1980, Hobbs, NM 88240
DISTRICT II
 P.O. Drawer DD, Artesia, NM 88210
DISTRICT III
 1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
 Energy, Minerals and Natural Resources Department

Form C-116
 Revised 1/1/89

OIL CONSERVATION DIVISION

P.O. Box 2088
 Santa Fe, New Mexico 87504-2088

GAS - OIL RATIO TEST

Operator		Pool		County									
Marathon Oil Company		Blanco Mesaverde/Basin Dakota		Rio Arriba									
Address			TYPE OF TEST - (X)			Completion			Special				
P. O. Box 552, Midland, Texas 79702			<input checked="" type="checkbox"/>			<input type="checkbox"/>			<input checked="" type="checkbox"/>				
LEASE NAME	WELL NO.	LOCATION			DATE OF TEST	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW. ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST		GAS - OIL RATIO CU.FT./BBL.	
		U	S	T						R	WATER BBL.		OIL BBL.
Jicarilla Apache													
Blanco Mesaverde	8E	K	27	26N	5W	6-8-89	F	0.875	271		0	186	-
Basin Dakota	8E	K	27	26N	5W	6-8-89	F	0.875	275		0.5	232	105,455

INSTRUCTIONS:

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Division.
 Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.
 Report casing pressure in lieu of tubing pressure for any well producing through casing.

(See Rule 301, Rule 1116 & appropriate pool rules.)

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

Robert L. Ellis
 Signature

Robert L. Ellis
 Printed name and title

6/18/89
 Date

Production Engineer

(915) 682-1626

Telephone No.

**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT**

SUBMIT IN TRIPPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-105
Expires August 31, 1985

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals.)

<p>1. <input type="checkbox"/> OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER</p> <p>2. NAME OF OPERATOR Marathon Oil Company</p> <p>3. ADDRESS OF OPERATOR P. O. Box 552, Midland, Texas 79702</p> <p>4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below) At surface NE/4 SW/4 (Unit Letter K) 1685' FSL & 1685' FWL Section 27, T26N, R5W</p> <p>14. PERMIT NO. 30-049-22588</p>	<p>5. LEASE DESIGNATION AND SERIAL NO Jicarilla Contract No. 15</p> <p>6. IF INDIAN, ALLOTTEE OR TRIBE NAME Jicarilla Apache</p> <p>7. UNIT AGREEMENT NAME</p> <p>8. FARM OR LEASE NAME Jicarilla Apache</p> <p>9. WELL NO. 8E</p> <p>10. FIELD AND POOL, OR WILDCAT Blanco MV/Basin DK</p> <p>11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec. 27, T26N, R5W</p> <p>12. COUNTY OR PARISH Rio Arriba</p> <p>13. STATE New Mexico</p>
<p>15. ELEVATIONS (Show whether DF, RT, GR, etc.) 6660' GL, 6673' KB</p>	

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(Other) <input type="checkbox"/>	

(Other) please see below (XX)

*(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work).*

Marathon is applying to the New Mexico Oil Conservation Division to downhole commingle production from the Blanco Mesaverde and Basin Dakota Pools. Upon receiving approval from the NMOCD, a sliding sleeve will be opened and the production from the two pools will be commingled. The estimated start date of this work is January 1, 1990.

18. I hereby certify that the foregoing is true and correct

SIGNED Robert L. Ellis TITLE Production Engineer DATE 8-21-89

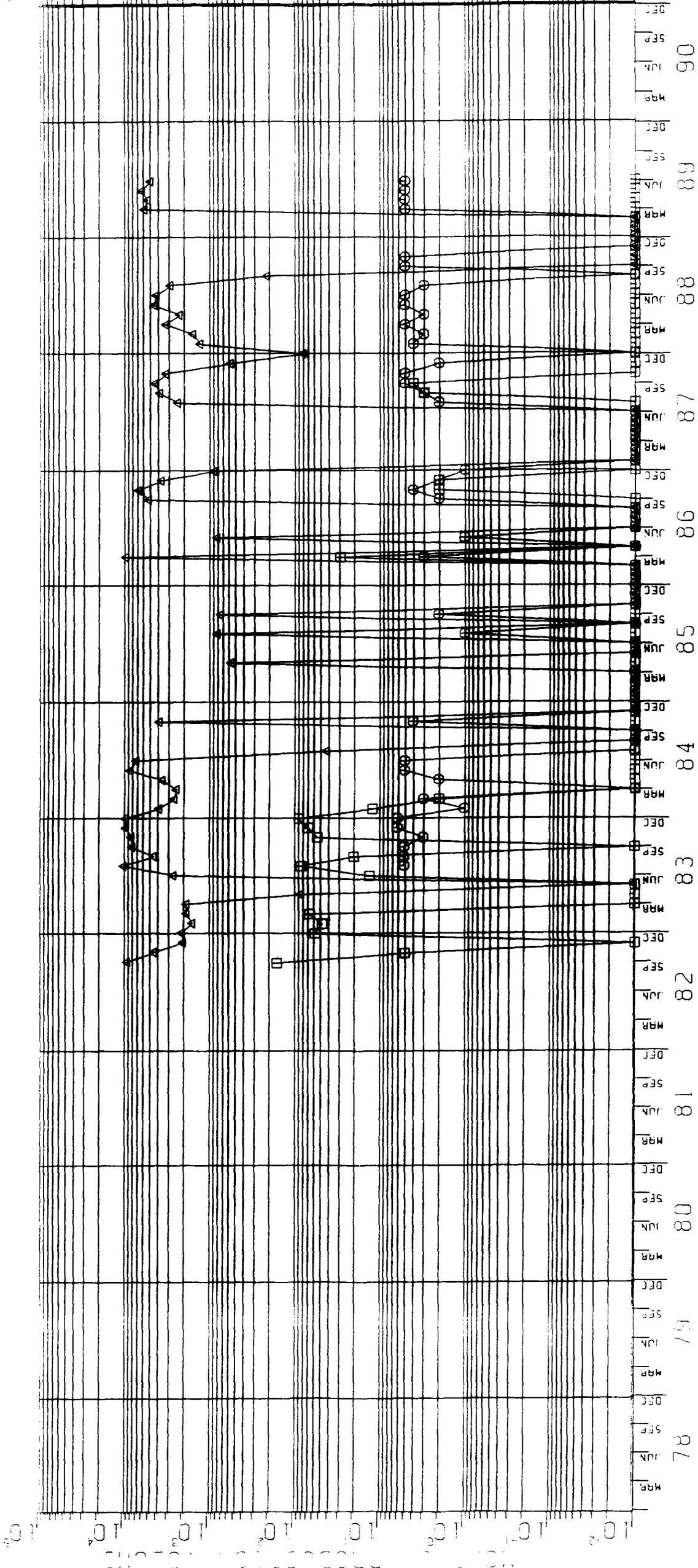
(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

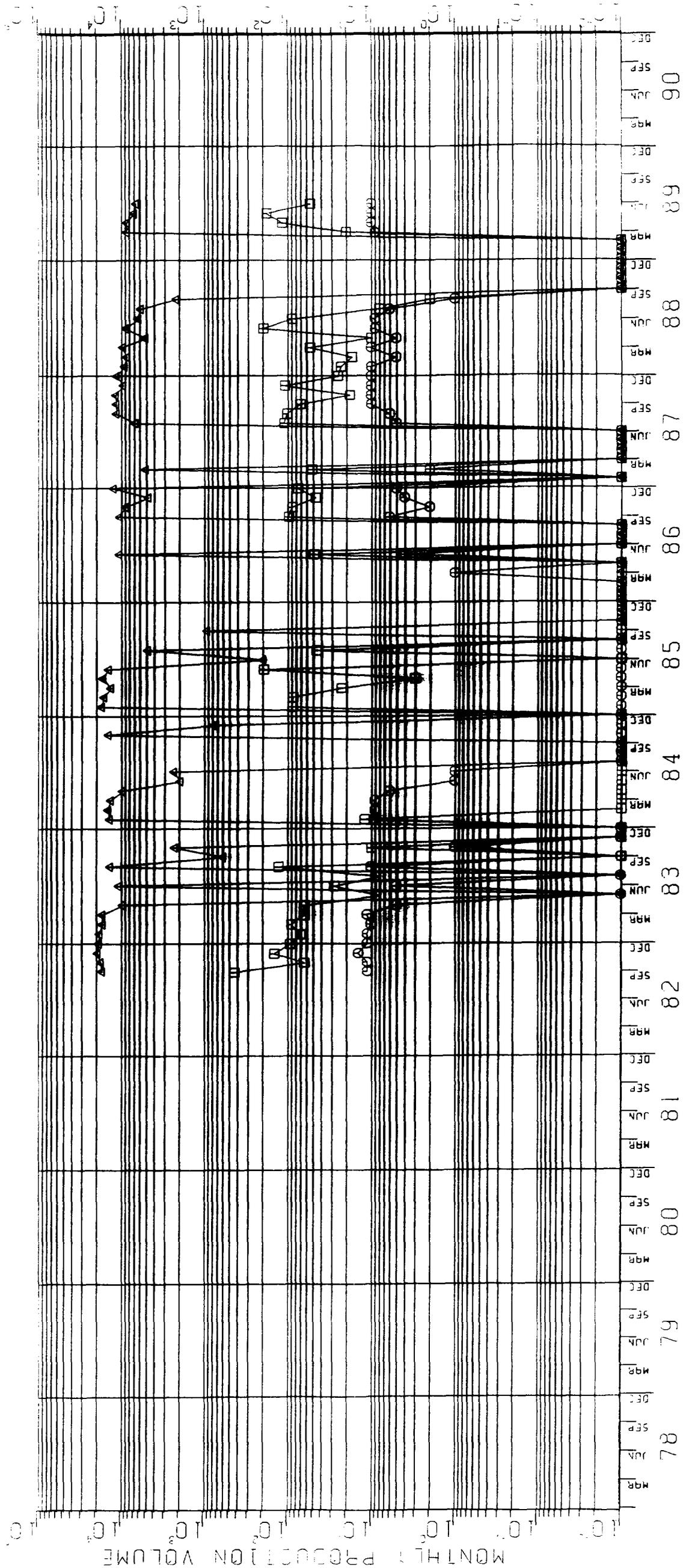
***See Instructions on Reverse Side**

ICARILLA APACHE #8E (MV)



OIL COND MONTHLY VOL ——— □
 GAS MONTHLY VOLUME ——— ▲
 WATER MONTHLY VOLUME ——— ○

JICARILLA APACHE #8E (DK)



OIL + COND MONTHLY VOL
 GAS MONTHLY VOLUME
 WATER MONTHLY VOLUME

MONTHLY PRODUCTION VOLUME

KELLAHIN, KELLAHIN and AUBREY

Attorneys at Law

W. Thomas Kellahin
Karen Aubrey

El Patio - 117 North Guadalupe
Post Office Box 2265

Telephone 982-4285
Area Code 505

Jason Kellahin
Of Counsel

Santa Fé, New Mexico 87504-2265

Fax: 505/982-2047

August 1, 1989

RECEIVED

AUG 1 1989

OIL CONSERVATION DIVISION

HAND-DELIVERED

Mr. William J. LeMay
Oil Conservation Division
Post Office Box 2088
Santa Fe, New Mexico 87501

Re: Marathon Oil Company's Application
for Downhole Commingling of Production
in Certain Basin Dakota and Mesaverde
Well, Rio Arriba County, New Mexico

Dear Mr. LeMay:

On behalf of Marathon Oil Company, please find enclosed our application for hearing to be held on August 23, 1989 for authority to downhole commingling production in the wells setforth on the enclosed application.

By copy of this letter to offsetting operators, we are advising them of our application and their right to appear at the hearing if they desire.

Very truly yours,



W. Thomas Kellahin

WTK/rs
Encl.

cc: Brent Lowrey - Marathon Oil Company
Larry Garcia - Marathon Oil Company

"Certified Mail, Return-Receipt Requested"
All parties shown in application.

RECEIVED

AUG 1 1989

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE APPLICATION OF
MARATHON OIL COMPANY FOR APPROVAL
TO DOWNHOLE COMMINGLE PRODUCTION IN
THE BLANCO MESAVERDE AND BASIN DAKOTA
IN CERTAIN WELLS, RIO ARRIBA COUNTY,
NEW MEXICO.

CASE NO. _____

A P P L I C A T I O N

COMES NOW MARATHON OIL COMPANY, by and through its attorneys Kellahin, Kellahin & Aubrey and applies to the New Mexico Oil Conservation Division for authority to downhole commingle production from the Blanco Mesaverde pool with the Basin Dakota pool in the following described wells:

Well No. 8E 1685' FSL, 1685' FWL, S/2 Section 27, T26N, R5W

Perforated Intervals:

Basin Dakota: 7250' - 7490'

Blanco Mesaverde: 5250' - 5274'

Well No. 9E 1040' FSL, 1685' FEL, E/2 Section 28, T26N, R5W

Perforated Intervals:

Basin Dakota: 7234' - 7466'

Blanco Mesaverde: 5232' - 5336'

Well No. 13E 1850' FNL, 930' FWL, W/2 Section 33, T26N, R5W

Perforated Intervals:

Basin Dakota: 7100' - 7195'

Blanco Mesaverde: 5126' - 5150'

Well No. 14E 1850' FNL, 1685' FWL, W/2 Section 34, T26N, R5W
Perforated Intervals:
Basin Dakota: 7100' - 7332'
Blanco Mesaverde: 4950' - 5241'

Well No. 16E 825' FNL, 955' FEL, E/2 Section 34, T26N, R5W
Perforated Intervals:
Basin Dakota: 7200' - 7430'
Blanco Mesaverde: 5148' - 5278'

Well No. 8 990' FSL, 990' FEL, N/2 Section 27, T26N, R5W

Well No. 9 990' FNL, 1100' FEL, E/2 Section 28, T26N, R5W

Well No. 10E 1040' FNL, 1685' FWL, N/2 Section 27, T26N, R5W

Well No. 11E 955' FNL, 1685' FWL, W/2 Section 28, T26N, R5W

Well No. 12 800' FNL, 800' FEL, E/2 Section 33, T26N, R5W

Well No. 16 1600' FSL, 900' FEL, E/2 Section 34, T26N, R5W

1. Applicant is the operator of the above described wells.
2. By copy of this application to all offsetting operators as setforth on Exhibit (1), Applicant has notified said operators in accordance with Division Notice Rules of the hearing on this matter on August 23, 1989.

WHEREFORE, Applicant requests that this matter be set for hearing and after hearing, the application be granted as requested.

Kellahin, Kellahin & Aubrey

By: 
W. Thomas Kellahin

Post Office Box 2265
Santa Fe, New Mexico 87504

(505) 982-4285

TABLE II
OFFSET OPERATORS
JICARILLA APACHE LEASE
Sections 27, 28, 33, 34, T26N, R5W
RIO ARriba COUNTY, NEW MEXICO

Amoco Production Company
2325 E. 30th Street
Farmington, New Mexico

Union Texas Petroleum
375 U.S. Highway 64, NBU 3004
Farmington, New Mexico 87401

Conoco Inc.
P. O. Box 1959
Midland, Texas 79702

Southern-Union Exploration
324 Highway 64, NBU 3001
Farmington, New Mexico 87401

Meridian Oil Inc.
P. O. Box 4289
Farmington, New Mexico 87499

Exhibit (1)



P.O. Box 552
Midland, Texas 79702
Telephone 915/682-1626

August 21, 1989

State of New Mexico
Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Division Director

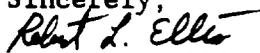
RE: Rule 303 A - Exception

Marathon Oil Company requests permission to downhole commingle production in its Jicarilla Apache Well No. 9E. The legal description for this well is 1040' FSL and 1685' FEL, Section 28, T26N, R5W, Rio Arriba County, New Mexico. This well is a dual completion under Administrative Order No. MC-2975 and produces from the Basin Dakota Pool through perforations at 7234'-7466' and from the Blanco Mesaverde Pool through perforations at 5232'-5336'.

An attached C-116 shows the most recent production from the Basin Dakota and the Blanco Mesaverde. Previous commingling of these two zones by other operators in this area have shown that the gas, condensate and waters produced by these two formations are compatible and will not result in formation damage if commingled. The value of the commingled gas and condensate will not be reduced by commingling. Ownership of the two zones is also the same. The bottom-hole pressures of the two zones corrected to a depth of 5232' for purposes of comparison is 873 psia for the Blanco Mesaverde and 1078 psia for the Basin Dakota.

This well is currently not capable of lifting all of the Mesaverde condensate to the surface. It currently produces approximately 10 barrels of condensate per month, mostly in slugs. This loading up of liquid as evidenced by 737 feet of fluid above the perforations (from fluid level measurements) applies a backpressure on the formation which restricts the gas flow. The proposed downhole commingling will allow the Dakota gas, while there are still reserves and pressure available, to "gas lift" the reservoir fluids from the Mesaverde and to relieve the reservoir backpressure. Thus, the downhole commingling should prevent the loss of gas and liquid hydrocarbon reserves.

Letters have been sent to all offset operators notifying them of the proposed commingling. A copy of one of these letters is attached. Also attached is a production decline curve for the past 7 years for the Basin Dakota and the Blanco Mesaverde Pools. A map showing the location of the well is also attached. Production should be assigned to each of the zones using a straight percentage split: Mesaverde - 20%, Dakota - 80%. This split is based upon the latest production figures for the well.

Sincerely,

Robert L. Ellis
Production Engineer

RLE/BLL/013.274/cb

Submit 2 copies to Appropriate District Office.

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240
DISTRICT II
P.O. Drawer DD, Artesia, NM 88210
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-116
Revised 1/1/89

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

GAS - OIL RATIO TEST

Operator		Pool		County								
Marathon Oil Company		Blanco Mesaverde/Basin Dakota		Rio Arriba								
Address			TYPE OF TEST - (X)		Completion							
P. O. Box 552, Midland, Texas 79702			Scheduled <input type="checkbox"/>		Special <input checked="" type="checkbox"/>							
LEASE NAME	WELL NO.	LOCATION			DATE OF TEST	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW-ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST		GAS - OIL RATIO CU.FT/BBL
		U	S	T						R	WATER BBL.S.	
Jicarilla Apache												
Blanco Mesaverde	9E	0	28	26N	5W	6-8-89	274		24	0	0	68
Basin Dakota	9E	0	28	26N	5W	6-8-89	327		24	0.2	0	734

Instructions:

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Division.
Gas volumes must be reported in MCF measured at a pressure base of 15,025 psia and a temperature of 60° F. Specific gravity base will be 0.60.
Report casing pressure in lieu of tubing pressure for any well producing through casing.

(See Rule 301, Rule 1116 & appropriate pool rules.)

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

Robert L. Ellis
Signature

Robert L. Ellis
Printed name and title

Production Engineer
6/18/89
(915) 682-1626

Date
Telephone No.

**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT**

SUBMIT IN TRIPPLICATE*
(Other instructions on re-
verse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals.)

<p>1. <input type="checkbox"/> OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER</p> <p>2. NAME OF OPERATOR Marathon Oil Company</p> <p>3. ADDRESS OF OPERATOR P. O. Box 552, Midland, Texas 79702</p> <p>4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface SW/4 SE/4 (Unit Letter O) 1040' FSL & 1685' FEL Section 28, T26N, R5W</p> <p>14. PERMIT NO. 30-039-22589</p>	<p>5. LEASE DESIGNATION AND SERIAL NO. Jicarilla Contract No. 154</p> <p>6. IF INDIAN, ALLOTTEE OR TRIBE NAME Jicarilla Apache</p> <p>7. UNIT AGREEMENT NAME</p> <p>8. FARM OR LEASE NAME Jicarilla Apache</p> <p>9. WELL NO. 9E</p> <p>10. FIELD AND POOL, OR WILDCAT Blanco MV/Basin DK</p> <p>11. SEC., T., R., N., OR S.E.K. AND SURVEY OR AREA Sec. 28, T26N, R5W</p> <p>12. COUNTY OR PARISH 13. STATE Rio Arriba New Mexico</p>
<p>15. ELEVATIONS (Show whether DF, ST, OR, etc.) 6684' GL, 6697' KB</p>	

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT-UP:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PCLL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRS- WELLS <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERED CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(Other) <input type="checkbox"/>	

(Other) Please see below

*NOTE: Report results of multiple completions, or Completion or Re-completion Report on this form.

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths to each subsurface zone pertinent to this work.)*

Marathon is applying to the New Mexico Oil Conservation Division to downhole commingle production from the Blanco Mesaverde and Basin Dakota Pools. Upon receiving approval from the NMOC, a sliding sleeve will be opened and the production from the two pools will be commingled. The estimated start date of this work is January 1, 1990.

18. I hereby certify that the foregoing is true and correct

SIGNED Robert L. Ellis TITLE Production Engineer DATE 8-21-89

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

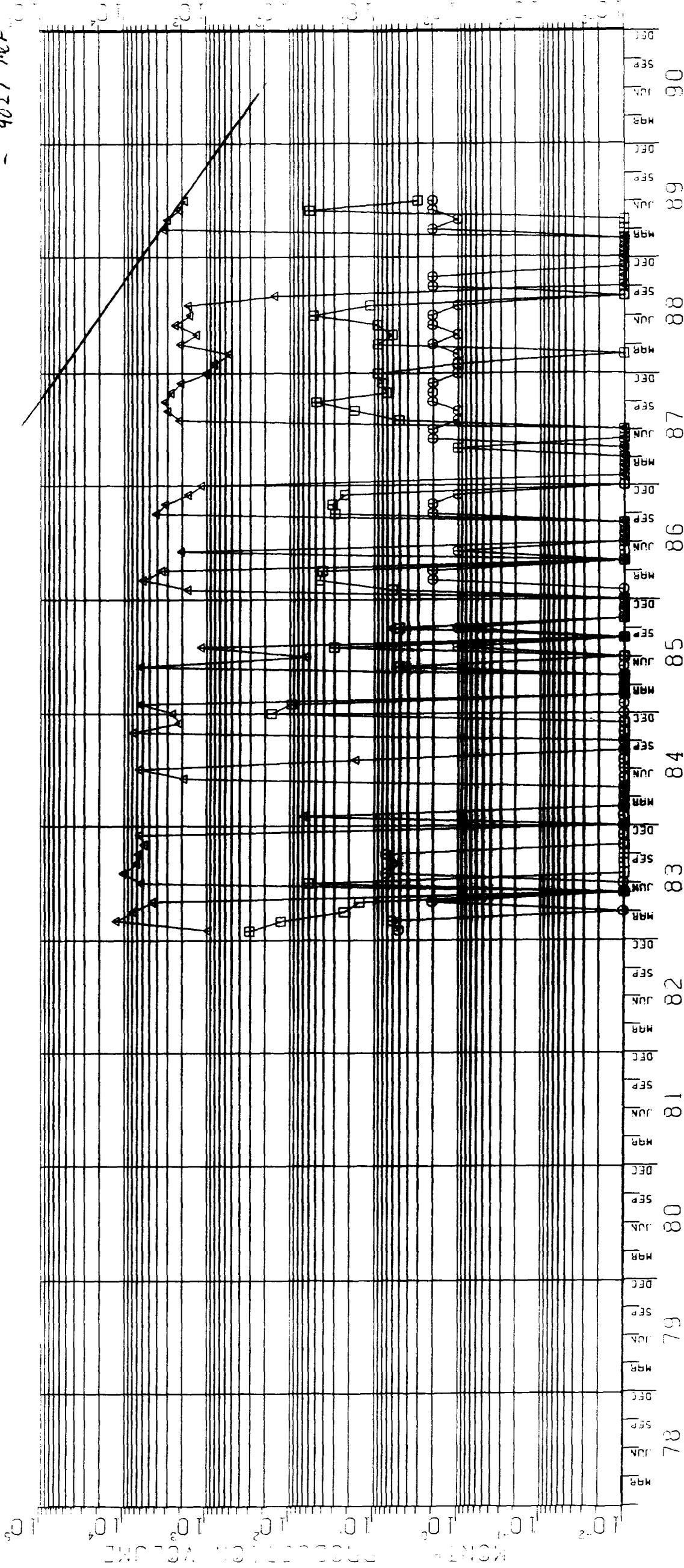
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

$$D_1 = \frac{\ln(69000/650)}{2 \text{ YR}} = 2.26/\text{YR}$$

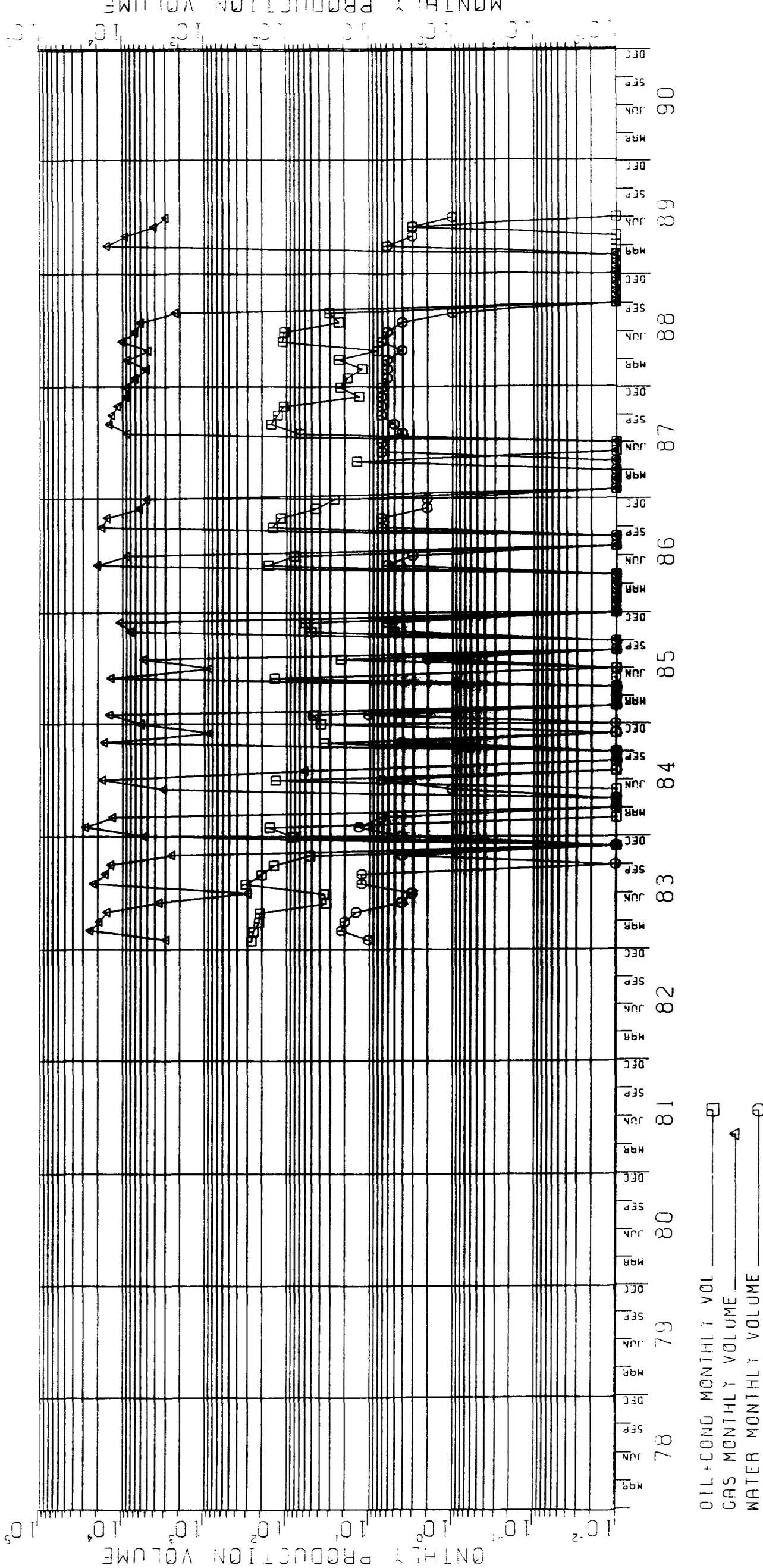
$$\text{REM RESERVES} = \frac{2000 - 360}{2.26} = 802.7 \text{ MCF}$$

JICARILLA APACHE #9E (MVJ)



OIL+COND MONTHLY VOL
 GAS MONTHLY VOLUME ▲
 WATER MONTHLY VOLUME

JICARILLA APACHE #9E (DK)



MONTHLY PRODUCTION VOLUME

OIL+COND MONTHLY VOL
GAS MONTHLY VOLUME
WATER MONTHLY VOLUME

KELLAHIN, KELLAHIN and AUBREY

Attorneys at Law

W. Thomas Kellahin
Karen Aubrey

Jason Kellahin
Of Counsel

El Patio - 117 North Guadalupe
Post Office Box 2265

Santa Fé, New Mexico 87504-2265

Telephone 982-4285
Area Code 505

Fax: 505/982-2047

August 1, 1989

RECEIVED

AUG 1 1989

OIL CONSERVATION DIVISION

HAND-DELIVERED

Mr. William J. LeMay
Oil Conservation Division
Post Office Box 2088
Santa Fe, New Mexico 87501

Re: Marathon Oil Company's Application
for Downhole Commingling of Production
in Certain Basin Dakota and Mesaverde
Well, Rio Arriba County, New Mexico

Dear Mr. LeMay:

On behalf of Marathon Oil Company, please find enclosed our application for hearing to be held on August 23, 1989 for authority to downhole commingling production in the wells setforth on the enclosed application.

By copy of this letter to offsetting operators, we are advising them of our application and their right to appear at the hearing if they desire.

Very truly yours,



W. Thomas Kellahin

WTK/rs
Encl.

cc: Brent Lowrey - Marathon Oil Company
Larry Garcia - Marathon Oil Company

"Certified Mail, Return-Receipt Requested"
All parties shown in application.

RECEIVED

AUG 1 1989

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE APPLICATION OF
MARATHON OIL COMPANY FOR APPROVAL
TO DOWNHOLE COMMINGLE PRODUCTION IN
THE BLANCO MESAVERDE AND BASIN DAKOTA
IN CERTAIN WELLS, RIO ARRIBA COUNTY,
NEW MEXICO.

CASE NO. _____

A P P L I C A T I O N

COMES NOW MARATHON OIL COMPANY, by and through its attorneys Kellahin, Kellahin & Aubrey and applies to the New Mexico Oil Conservation Division for authority to downhole commingle production from the Blanco Mesaverde pool with the Basin Dakota pool in the following described wells:

Well No. 8E 1685' FSL, 1685' FWL, S/2 Section 27, T26N, R5W
Perforated Intervals:
Basin Dakota: 7250' - 7490'
Blanco Mesaverde: 5250' - 5274'

Well No. 9E 1040' FSL, 1685' FEL, E/2 Section 28, T26N, R5W
Perforated Intervals:
Basin Dakota: 7234' - 7466'
Blanco Mesaverde: 5232' - 5336'

Well No. 13E 1850' FNL, 930' FWL, W/2 Section 33, T26N, R5W
Perforated Intervals:
Basin Dakota: 7100' - 7195'
Blanco Mesaverde: 5126' - 5150'

Well No. 14E 1850' FNL, 1685' FWL, W/2 Section 34, T26N, R5W
Perforated Intervals:
Basin Dakota: 7100' - 7332'
Blanco Mesaverde: 4950' - 5241'

Well No. 16E 825' FNL, 955' FEL, E/2 Section 34, T26N, R5W
Perforated Intervals:
Basin Dakota: 7200' - 7430'
Blanco Mesaverde: 5148' - 5278'

Well No. 8 990' FSL, 990' FEL, N/2 Section 27, T26N, R5W

Well No. 9 990' FNL, 1100' FEL, E/2 Section 28, T26N, R5W

Well No. 10E 1040' FNL, 1685' FWL, N/2 Section 27, T26N, R5W

Well No. 11E 955' FNL, 1685' FWL, W/2 Section 28, T26N, R5W

Well No. 12 800' FNL, 800' FEL, E/2 Section 33, T26N, R5W

Well No. 16 1600' FSL, 900' FEL, E/2 Section 34, T26N, R5W

1. Applicant is the operator of the above described wells.

2. By copy of this application to all offsetting operators as setforth on Exhibit (1), Applicant has notified said operators in accordance with Division Notice Rules of the hearing on this matter on August 23, 1989.

WHEREFORE, Applicant requests that this matter be set for hearing and after hearing, the application be granted as requested.

Kellahin, Kellahin & Aubrey

By: 
W. Thomas Kellahin

Post Office Box 2265
Santa Fe, New Mexico 87504

(505) 982-4285

TABLE II
OFFSET OPERATORS
JICARILLA APACHE LEASE
Sections 27, 28, 33, 34, T26N, R5W
RIO ARriba COUNTY, NEW MEXICO

Amoco Production Company
2325 E. 30th Street
Farmington, New Mexico

Union Texas Petroleum
375 U.S. Highway 64, NBU 3004
Farmington, New Mexico 87401

Conoco Inc.
P. O. Box 1959
Midland, Texas 79702

Southern-Union Exploration
324 Highway 64, NBU 3001
Farmington, New Mexico 87401

Meridian Oil Inc.
P. O. Box 4289
Farmington, New Mexico 87499

Exhibit (1)



P.O. Box 552
Midland, Texas 79702
Telephone 915/682-1626

August 21, 1989

State of New Mexico
Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Division Director

RE: Rule 303 A - Exception

Marathon Oil Company requests permission to downhole commingle production in its Jicarilla Apache Well No. 16E. The legal description for this well is 825' FNL and 955' FEL, Section 34, T26N, R5W, Rio Arriba County, New Mexico. This well is a dual completion under Administrative Order No. MC-2918 and produces from the Basin Dakota Pool through perforations at 7200'-7430' and from the Blanco Mesaverde Pool through perforations at 5148'-5278'.

An attached C-116 shows the most recent production from the Basin Dakota and the Blanco Mesaverde. Previous commingling of these two zones by other operators in this area have shown that the gas, condensate and waters produced by these two formations are compatible and will not result in formation damage if commingled. The value of the commingled gas and condensate will not be reduced by commingling. Ownership of the two zones is also the same. The bottom-hole pressures of the two zones corrected to a depth of 5148' for purposes of comparison is 569 psia for the Blanco Mesaverde and 813 psia for the Basin Dakota.

This well is currently not capable of lifting the Mesaverde condensate to the surface. This loading up of liquid as evidenced by 498 feet of fluid above the perforations (from fluid level measurements) applies a backpressure on the formation which restricts the gas flow. The proposed downhole commingling will allow the Dakota gas, while there are still reserves and pressure available, to "gas lift" the reservoir fluids from the Mesaverde and to relieve the reservoir backpressure. Thus, the downhole commingling should prevent the loss of gas and liquid hydrocarbon reserves. This well last produced condensate in October, 1987.

Letters have been sent to all offset operators notifying them of the proposed commingling. A copy of one of these letters is attached. Also attached is a production decline curve for the past 7 years for the Basin Dakota and the Blanco Mesaverde Pools. A map showing the location of the well is also attached. Production should be assigned to each of the zones using a straight percentage split: Mesaverde - 10%, Dakota - 90%. This split is based upon the latest production figures for the well.

Sincerely,

A handwritten signature in cursive script that reads 'Robert L. Ellis'.

Robert L. Ellis
Production Engineer

RLE/BLL/012.274/cb

Submit 2 copies to Appropriate District Office.
DISTRICT I
 P.O. Box 1980, Hobbs, NM 88240
DISTRICT II
 P.O. Drawer DD, Artesia, NM 88210
DISTRICT III
 1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
 Energy, Minerals and Natural Resources Department
OIL CONSERVATION DIVISION
 P.O. Box 2088
 Santa Fe, New Mexico 87504-2088

Form C-116
 Revised 1/1/89

GAS - OIL RATIO TEST

Operator		Pool		County												
Marathon Oil Company		Blanco Mesaverde/Basin Dakota		Rio Arriba												
Address			TYPE OF TEST - (X)		Completion											
P. O. Box 552, Midland, Texas 79702			Scheduled <input type="checkbox"/>		Special <input checked="" type="checkbox"/>											
LEASE NAME	WELL NO.	LOCATION			DATE OF TEST	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW-ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST		GAS - OIL RATIO CU FT/BBL				
		U	S	T						R	WATER BBL.		GRAV. OIL	OIL BBL.	GAS MCF.	
Jicarilla Apache	16E	A	34	26N	5W	6-8-89	F	0.500	268			24	0	0	35	--
Blanco Mesaverde	16E	A	34	26N	5W	6-8-89	F	0.875	279			24	1.1	0.5	191	382,000

Instructions:

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Division.
 Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F.
 Specific gravity base will be 0.60.
 Report casing pressure in lieu of tubing pressure for any well producing through casing.
 (See Rule 301, Rule 1116 & appropriate pool rules.)

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

Robert L. Ellis
 Signature

Robert L. Ellis
 Production Engineer
 Printed name and title
 6/18/89
 Date
 (915) 682-1626
 Telephone No.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPPLICATE*
(Other instructions on re-
verse side)

Budget Bureau No. 1004-0135
Expires August 31, 1985

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER		5. LEASE DESIGNATION AND SERIAL NO Jicarilla Contract No. 154
2. NAME OF OPERATOR Marathon Oil Company		6. IF INDIAN, ALLOTTEE OR TRIBE NAME Jicarilla Apache
3. ADDRESS OF OPERATOR P. O. Box 552, Midland, Texas 79702		7. UNIT AGREEMENT NAME
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface NE/4 NE/4 (Unit Letter A) 825' FNL & 955' FEL Section 34, T26N, R5W		8. FARM OR LEASE NAME Jicarilla Apache
14. PERMIT NO. 30-039-22434		9. WELL NO. 16E
15. ELEVATIONS (Show whether DP, ST, CR, etc.) 6650' GL, 6662' KB		10. FIELD AND POOL, OR WILDCAT Blanco MV/Basin DK
		11. SEC., T., R., N., OR E. & SUBSTY OR AREA Sec. 34, T26N, R5W
		12. COUNTY OR PARISH Rio Arriba
		13. STATE New Mexico

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORTS ON:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIR WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTER CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDON* <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(Other) _____	(Other) _____
(Other) _____	Please see below <input checked="" type="checkbox"/>	(NOTE: Report results of multiple completions on completion or recompletion Report on Form 3100-5)	

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent data, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all sections and zones pertinent to this work.)*

Marathon is applying to the New Mexico Oil Conservation Division to downhole commingle production from the Blanco Mesaverde and Basin Dakota Pools. Upon receiving approval from the NMOC, a sliding sleeve will be opened and the production from the two pools will be commingled. The estimated start date of this work is January 1, 1990.

18. I hereby certify that the foregoing is true and correct

SIGNED Robert L. Ellis TITLE Production Engineer DATE 8-21-89

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

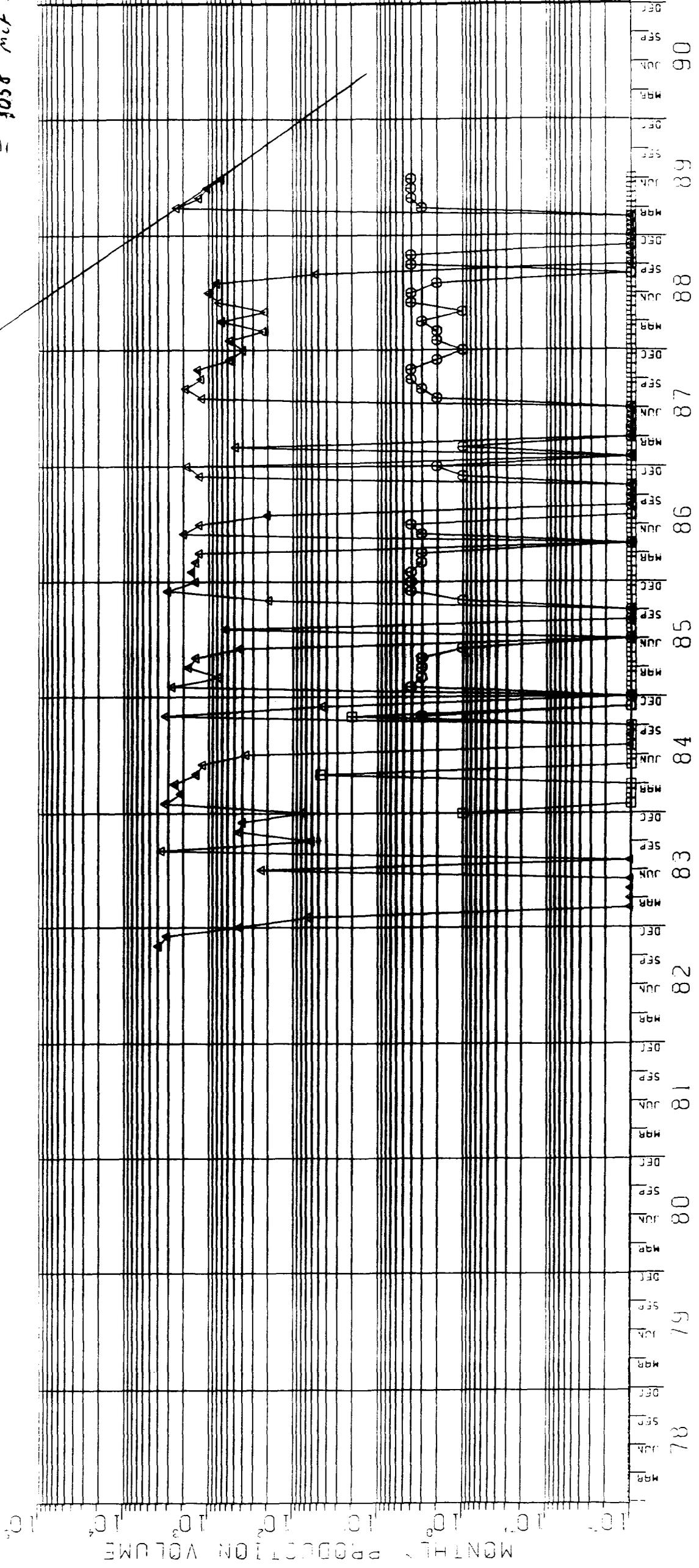
*See instructions on Reverse Side

$$D_1 = \frac{10 (2000/75)}{1 \text{ YR}} = 4.54 / \text{YR}$$

$$\text{REM ADDED} = \frac{700 - 300}{7.54} \times 12$$

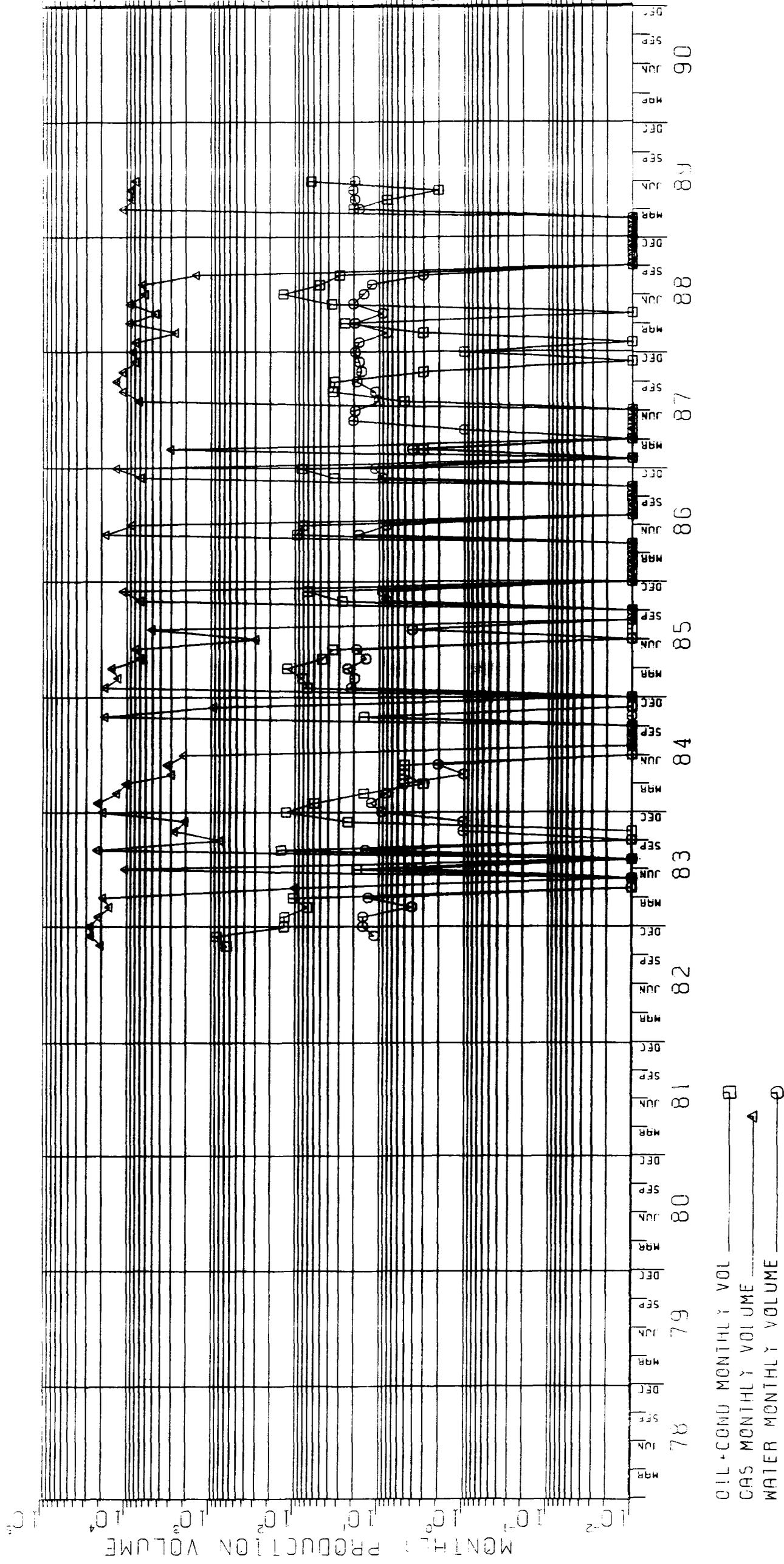
$$= 1058 \text{ MCF}$$

JICARILLA APACHE #16E (MV)



OIL MONTHLY VOL
 GAS MONTHLY VOLUME
 WATER MONTHLY VOLUME

11CARRILLA APACHE #16E (DK)



KELLAHIN, KELLAHIN and AUBREY

Attorneys at Law

W. Thomas Kellahin
Karen Aubrey

El Patio - 117 North Guadalupe
Post Office Box 2265

Telephone 982-4285
Area Code 505

Jason Kellahin
Of Counsel

Santa Fe, New Mexico 87504-2265

Fax: 505/982-2047

August 1, 1989

RECEIVED

AUG 1 1989

OIL CONSERVATION DIVISION

HAND-DELIVERED

Mr. William J. LeMay
Oil Conservation Division
Post Office Box 2088
Santa Fe, New Mexico 87501

Re: Marathon Oil Company's Application
for Downhole Commingling of Production
in Certain Basin Dakota and Mesaverde
Well, Rio Arriba County, New Mexico

Dear Mr. LeMay:

On behalf of Marathon Oil Company, please find enclosed our application for hearing to be held on August 23, 1989 for authority to downhole commingling production in the wells setforth on the enclosed application.

By copy of this letter to offsetting operators, we are advising them of our application and their right to appear at the hearing if they desire.

Very truly yours,



W. Thomas Kellahin

WTK/rs
Encl.

cc: Brent Lowrey - Marathon Oil Company
Larry Garcia - Marathon Oil Company

"Certified Mail, Return-Receipt Requested"
All parties shown in application.

RECEIVED

AUG 1 1989

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE APPLICATION OF
MARATHON OIL COMPANY FOR APPROVAL
TO DOWNHOLE COMMINGLE PRODUCTION IN
THE BLANCO MESAVERDE AND BASIN DAKOTA
IN CERTAIN WELLS, RIO ARRIBA COUNTY,
NEW MEXICO.

CASE NO. _____

A P P L I C A T I O N

COMES NOW MARATHON OIL COMPANY, by and through its attorneys Kellahin, Kellahin & Aubrey and applies to the New Mexico Oil Conservation Division for authority to downhole commingle production from the Blanco Mesaverde pool with the Basin Dakota pool in the following described wells:

Well No. 8E 1685' FSL, 1685' FWL, S/2 Section 27, T26N, R5W
Perforated Intervals:
Basin Dakota: 7250' - 7490'
Blanco Mesaverde: 5250' - 5274'

Well No. 9E 1040' FSL, 1685' FEL, E/2 Section 28, T26N, R5W
Perforated Intervals:
Basin Dakota: 7234' - 7466'
Blanco Mesaverde: 5232' - 5336'

Well No. 13E 1850' FNL, 930' FWL, W/2 Section 33, T26N, R5W
Perforated Intervals:
Basin Dakota: 7100' - 7195'
Blanco Mesaverde: 5126' - 5150'

Well No. 14E 1850' FNL, 1685' FWL, W/2 Section 34, T26N, R5W
Perforated Intervals:
Basin Dakota: 7100' - 7332'
Blanco Mesaverde: 4950' - 5241'

Well No. 16E 825' FNL, 955' FEL, E/2 Section 34, T26N, R5W
Perforated Intervals:
Basin Dakota: 7200' - 7430'
Blanco Mesaverde: 5148' - 5278'

Well No. 8 990' FSL, 990' FEL, N/2 Section 27, T26N, R5W

Well No. 9 990' FNL, 1100' FEL, E/2 Section 28, T26N, R5W

Well No. 10E 1040' FNL, 1685' FWL, N/2 Section 27, T26N, R5W

Well No. 11E 955' FNL, 1685' FWL, W/2 Section 28, T26N, R5W

Well No. 12 800' FNL, 800' FEL, E/2 Section 33, T26N, R5W

Well No. 16 1600' FSL, 900' FEL, E/2 Section 34, T26N, R5W

1. Applicant is the operator of the above described wells.

2. By copy of this application to all offsetting operators as setforth on Exhibit (1), Applicant has notified said operators in accordance with Division Notice Rules of the hearing on this matter on August 23, 1989.

WHEREFORE, Applicant requests that this matter be set for hearing and after hearing, the application be granted as requested.

Kellahin, Kellahin & Aubrey

By: 
W. Thomas Kellahin

Post Office Box 2265
Santa Fe, New Mexico 87504

(505) 982-4285

TABLE II
OFFSET OPERATORS
JICARILLA APACHE LEASE
Sections 27, 28, 33, 34, T26N, R5W
RIO ARRIBA COUNTY, NEW MEXICO

Amoco Production Company
2325 E. 30th Street
Farmington, New Mexico

Union Texas Petroleum
375 U.S. Highway 64, NBU 3004
Farmington, New Mexico 87401

Conoco Inc.
P. O. Box 1959
Midland, Texas 79702

Southern-Union Exploration
324 Highway 64, NBU 3001
Farmington, New Mexico 87401

Meridian Oil Inc.
P. O. Box 4289
Farmington, New Mexico 87499

Exhibit (1)



P.O. Box 552
Midland, Texas 79702
Telephone 915/682-1020

May 19, 1989

State of New Mexico
Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Division Director

Re: Rule 303 C - Downhole Commingling

Marathon Oil Company requests permission to downhole commingle production in its Jicarilla Apache Well No. 13E. The legal description for this well is 1850' FNL and 930' FWL, Section 33, T26N, R5W, Rio Arriba County, New Mexico. This well is a dual completion under Division Order No. MC-2919. This well produces from the Basin Dakota from perforations at 7107'-7295' and from the Blanco Mesaverde from perforations at 5126'-5150'.

An attached C-116 shows the most recent production from the Basin Dakota formation and the Blanco Mesaverde formation. Previous commingling of these two zones by other operators in this area have shown that the gas, condensate and waters produced by these two formations are compatible and will not result in formation damage if commingled. The value of the commingled gas and condensate will not be reduced by commingling. Ownership of the two zones is also the same. The bottomhole pressures of the two zones corrected to a depth of 5126' for purposes of comparison is 1054 psia for the Blanco Mesaverde and 1001 psia for the Basin Dakota.

Letters have been sent to all offset operators and the BLM notifying them of the proposed commingling. A copy of one of these letters is attached. Also attached is a production decline curve for the past 5 years for the Basin Dakota formation. A map showing the location of the well is also attached. Production should be assigned to each of the zones using the allocation formula attached or using a straight percentage split: Mesaverde - 31%, Dakota - 69%.

Marathon Oil Company
May 19, 1989
Page 2

If any further questions or comments should arise, please contact Mr.
M. A. Zoller, Production Superintendent at (915) 682-1626. Thank you.

Sincerely,

MARATHON OIL COMPANY

A handwritten signature in cursive script that reads "Nancy Engler".

Nancy Engler
Production Engineer

NCE/akp
005-89



**Marathon
Oil Company**

P.O. Box 552
Midland, Texas 79702
Telephone 815.802-1000

May 15, 1989

Union Texas Petroleum
4001 Bloomfield Highway
Farmington, New Mexico 87410

Attention: Operations Manager

Re: Marathon Oil Company - Jicarilla Apache Well No. 13E
1850' FNL, 930' FWL, Sec. 33, T26N, R5W, Unit E
Rio Arriba County, New Mexico

Dear Sir:

Marathon Oil Company is requesting permission from the Oil Conservation Division to downhole commingle production in the above referenced well. The Jicarilla Apache Well No. 13E is presently dually completed in the Blanco Mesaverde and the Basin Dakota. Combined production from this well will average approximately 200 MCFGPD, 1 BCPD, and 0.5 BWPD.

If you have no objection to this request, please sign the waiver at the bottom of this letter and return it to my attention. If you have any questions, please contact this office. Thank you.

Sincerely,

MARATHON OIL COMPANY

A handwritten signature in cursive script that reads "Nancy Engler".

Nancy Engler
Production Engineer

NCE/akp
003-89

This is to acknowledge that the undersigned waives objection to the downhole commingling, as proposed by Marathon Oil Company in this letter.

Company

Date

Company Representative

Title



**Marathon
Oil Company**

P.O. Box 552
Midland, Texas 79702
Telephone 915/682-1626

May 16, 1989

Meridian Oil
3535 E. 30th
Farmington, New Mexico 87401

Attention: Alan Alexander

Re: Marathon Oil Company - Jicarilla Apache Well No. 13E
1850' FNL, 930' FWL, Sec. 33, T26N, R5W, Unit E
Rio Arriba County, New Mexico

Dear Sir:

Marathon Oil Company is requesting permission from the Oil Conservation Division to downhole commingle production in the above referenced well. The Jicarilla Apache Well No. 13E is presently dually completed in the Blanco Mesaverde and the Basin Dakota. Combined production from this well will average approximately 200 MCFGPD, 1 BCPD, and 0.5 BWPD.

If you have no objection to this request, please sign the waiver at the bottom of this letter and return it to my attention. If you have any questions, please contact this office. Thank you.

Sincerely,

MARATHON OIL COMPANY

A handwritten signature in cursive script that reads 'Nancy Engler'.

Nancy Engler
Production Engineer

NCE/akp
003-89

This is to acknowledge that the undersigned waives objection to the downhole commingling, as proposed by Marathon Oil Company in this letter.

Company

Date

Company Representative

Title



**Marathon
Oil Company**

P.O. Box 552
Midland, Texas 79702
Telephone 915/682-1622

May 16, 1989

Amoco
P.O. Box 800
Denver, Colorado 80201

Attention: Micheal Cuba

Re: Marathon Oil Company - Jicarilla Apache Well No. 13E
1850' FNL, 930' FWL. Sec. 33, T26N, R5W, Unit E
Rio Arriba County, New Mexico

Dear Sir:

Marathon Oil Company is requesting permission from the Oil Conservation Division to downhole commingle production in the above referenced well. The Jicarilla Apache Well No. 13E is presently dually completed in the Blanco Mesaverde and the Basin Dakota. Combined production from this well will average approximately 200 MCFGPD, 1 BCPD, and 0.5 BWPD.

If you have no objection to this request, please sign the waiver at the bottom of this letter and return it to my attention. If you have any questions, please contact this office. Thank you.

Sincerely,

MARATHON OIL COMPANY

Nancy Engler
Production Engineer

NCE/akp
003-89

This is to acknowledge that the undersigned waives objection to the downhole commingling, as proposed by Marathon Oil Company in this letter.

Company

Date

Company Representative

Title

Submit 2 copies to Appropriate District Office:
 DISTRICT I
 P.O. Box 1980, Hobbs, NM 88240
 DISTRICT II
 P.O. Drawer DD, Artesia, NM 88210
 DISTRICT III
 1000 Rio Brazos Rd., Vidor, NM 87410

State of New Mexico
 Energy, Minerals and Natural Resources Department
OIL CONSERVATION DIVISION
 P.O. Box 2088
 Santa Fe, New Mexico 87504-2088

Form C-116
 Revised 1/1/89

GAS - OIL RATIO TEST

Operator		Pool		County									
Marathon Oil Company		Blanco Mesaverde/Basin Dakota		Rio Arriba									
Address		TYPE OF TEST - (X)		Scheduled <input type="checkbox"/>		Completion <input type="checkbox"/>		Special <input checked="" type="checkbox"/>					
P.O. Box 55, Midland, Texas 79702		S		P		P		P					
LEASE NAME	WELL NO	LOCATION			DATE OF TEST	CHOKE SIZE	TBG. PRESS	DAILY ALLOW. ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST		GAS - OIL RATIO CU FT/BBL	
		U	S	T						R	WATER BRLS		OIL BRLS
Heartlla Apache	13E	1	33	26N	5W	5-31-89	P 0.625	296	24	0.0	3.4	73	21,471
Blanco Mesaverde	13E	J	33	26N	5W	5-31-89	P 0.875	304	24	0.6	2.5	138	55,200

Instructions:

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Division.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.
 Report casing pressure in lieu of tubing pressure for any well producing through casing.

(See Rule 301, Rule 116 & appropriate pool rules.)

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

Signature Kent M. Weisling

Kent M. Weisling, Production Engineer
 Printed name and title

Date 6/5/89 (915) 682-1626
 Telephone No.

Allocation formula for production from
Blanco Mesaverde and Basin Dakota

Exponential decline factors: Mesaverde (MV) = 0.0128/month
Dakota (DK) = 0.0167/month

Where DK_1, MV_1 => current production
 DK_2, MV_2 => estimated production for following month
 DK_3, MV_3 => allocated production for following month

$$\ln(MV_1) - 0.0128 = \ln(MV_2)$$

$$\ln(DK_1) - 0.0167 = \ln(DK_2)$$

Where for any given month:

$$DK + MV = \text{Total Production}$$

Allocate using $(MV_2/DK_2 + 1) DK_2 = \text{Known Total Production}$

Example: $MV_1 = 1600$ $\ln MV_1 = 7.3778$
 $DK_1 = 2500$ $\ln DK_1 = 8.1605$

$$7.3778 - 0.0128 = 7.3650 = \ln MV_2; MV_2 = 1580$$

$$8.1605 - 0.0167 = 8.1438 = \ln DK_2; DK_2 = 3442$$

$$MV_2/DK_2 = 0.459$$

If Total Volume to be allocated (T_3) is 6000 MCF

$$\text{then } (0.459 + 1) DK_3 = 6000$$

$$DK_3 = 4112 \text{ MCF}$$

$$MV_3 = 6000 - 4112 = 1888 \text{ MCF}$$

For a more simplistic, less accurate allocation use: MV
 DK

NE:akp

File No. 004-89

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SMIT IN TRIPLICATE
FORM 100-100000-100 (10-78)

LEASE DESIGNATION AND SERIAL NO.

Tract 251, Cont. 000154
OF INDIAN ALLOTTEE OR TRIBE NAME

SUNDRY NOTICES AND REPORTS ON WELLS

Use this form for proposals to drill or to deepen existing wells in a different reservoir.
Use APPLICATION FOR PERMIT for such proposals.

Jicarilla Apache

UNIT AGREEMENT NAME

FARM OR LEASE NAME

Jicarilla Apache

WELL NO.

10E

FIELD AND POOL, OR WILDCAT

Blanco Mesaverde/Basin Dakot

SEC. T. R. M. OR BLE. AND
SUBST. OR AREA

Sec. 33, T26N, R5W

PERMIT NO

30-039-22446

ELEVATIONS (Show whether DF, RT, GR, etc.)

6598' GL, 6610 KB

COUNTY OR PARISH

Rio Arriba

STATE

N. Mexico

16.

Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>
(Other) <input type="checkbox"/> Please see below	

SUBSEQUENT REPORT OF:

WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input type="checkbox"/>
(Other) <input type="checkbox"/>	

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Marathon is applying for permission from the Oil Conservation Division to downhole commingle production from the Blanco Mesaverde and Basin Dakota formations. Upon receiving approval from the NMOCD, the sliding sleeve will be opened and production from the two zones will be commingled. Estimated start date of this work is July 1, 1989.

18. I hereby certify that the foregoing is true and correct

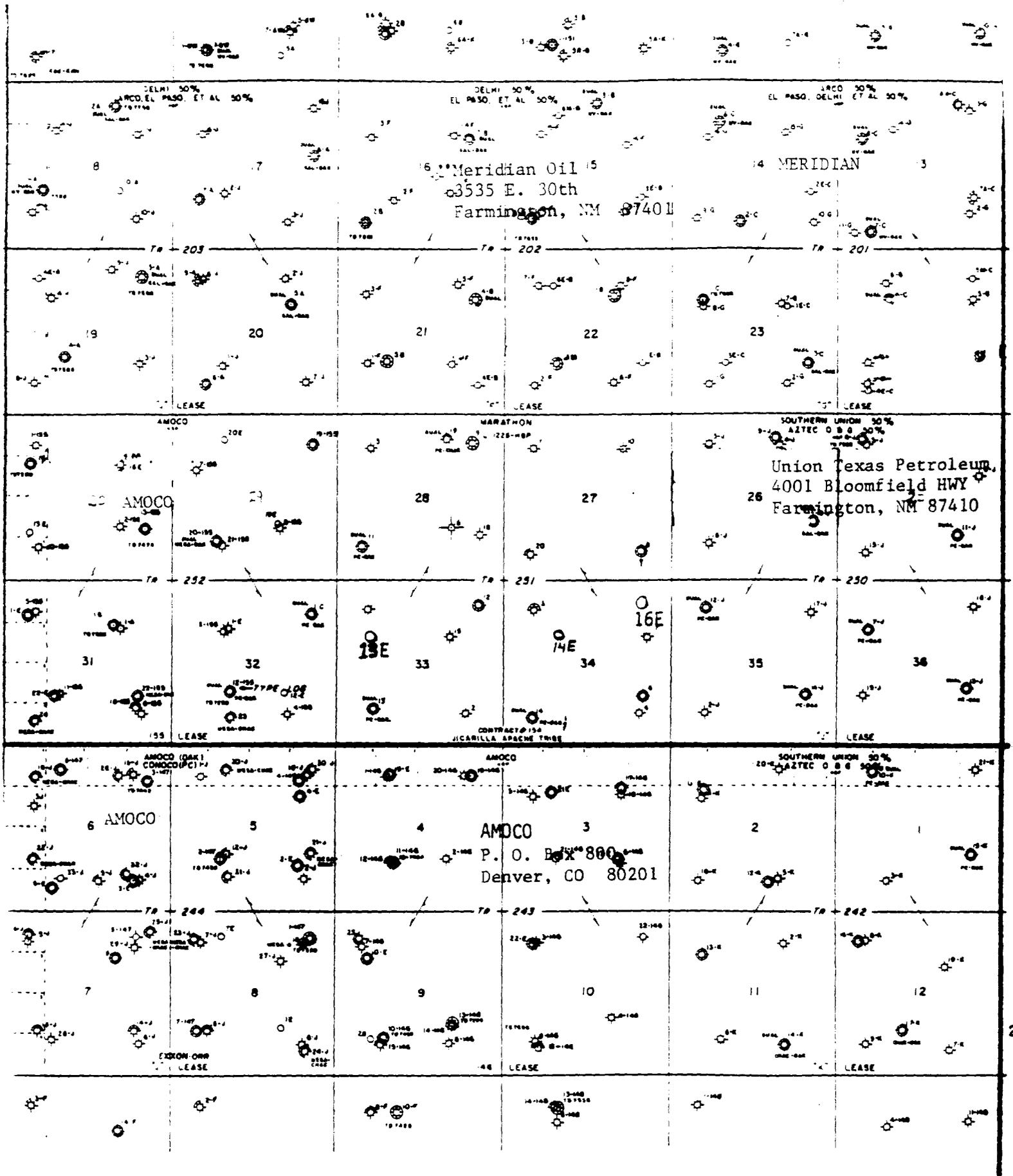
SIGNED *m c jellin* TITLE Production Superintendent DATE 6-12-89

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side



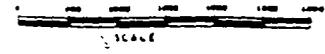
R 5 W



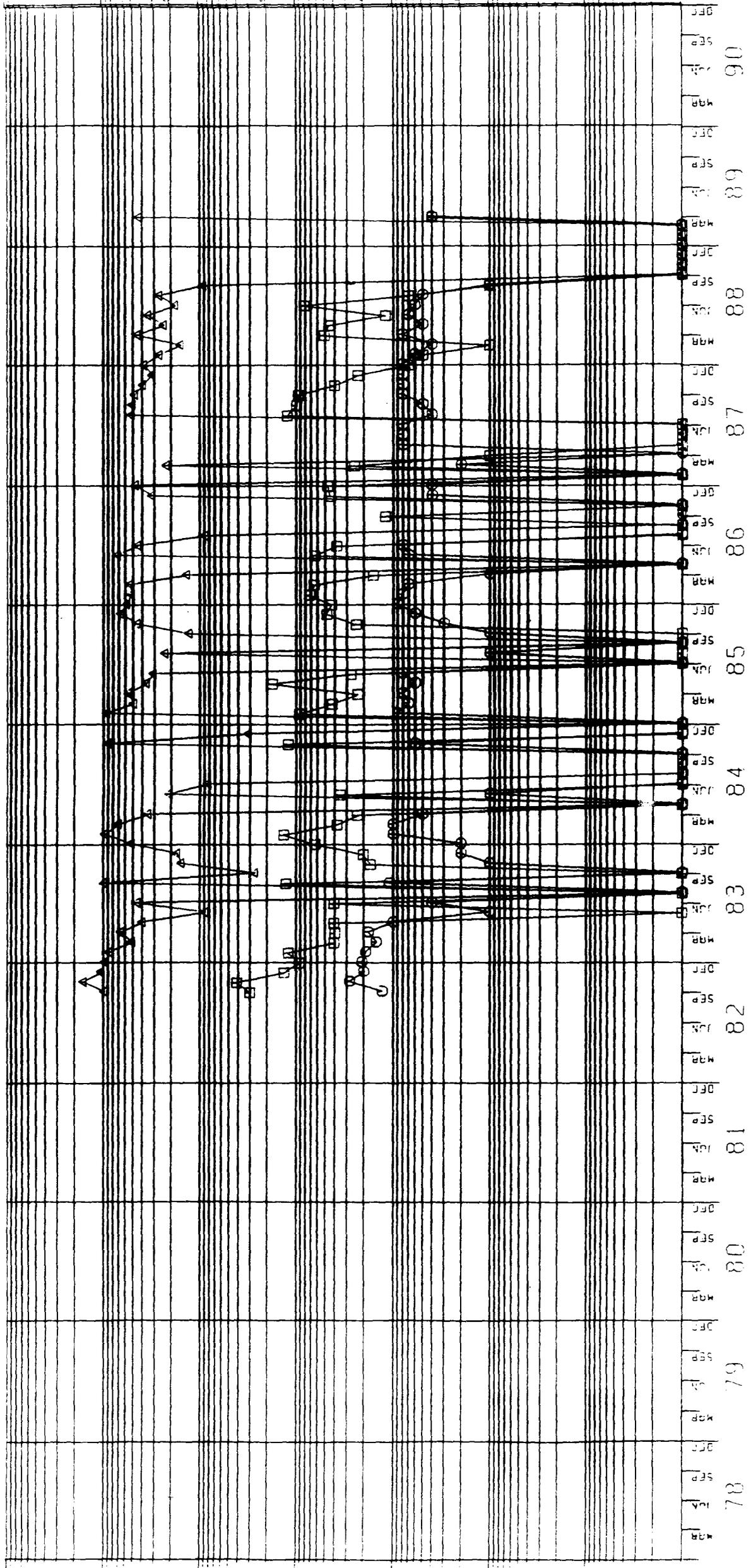
MARATHON OIL COMPANY

- LEGEND -
- ⊗ PICTURED CLIFFS GAS WELL
 - ⊗ MESAVARDE GAS WELL
 - ⊗ DAKOTA OIL WELL
 - ⊗ DAKOTA GAS WELL
 - ⊗ PICTURE CLIFFS B CHACRA GAS WELL
 - ⊗ PICTURE CLIFFS DEEPEMED TO DAKOTA
 - ⊗ CHACRA GAS WELL

JICARILLA AREA
RIO ARRIBA COUNTY, NEW MEXICO



JICARILLA
 BASIN DAKOTA
 APACHE
 BLANCO PICTURE CLIFFS CONT -90154
 RESERVOIR
 LEASE
 JICARILLA RD 13E
 WELL

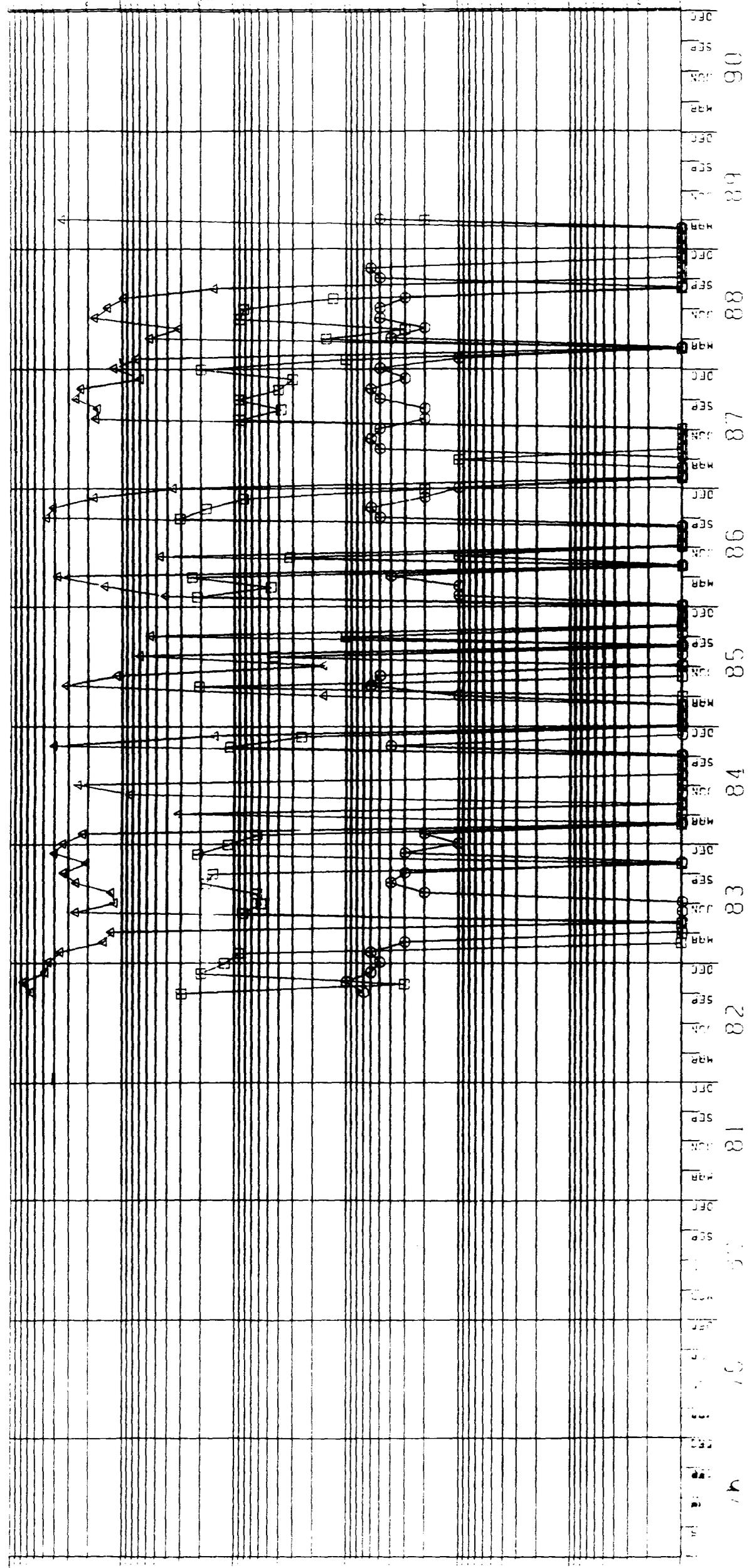


COND MONTHLY VOL □
 GAS MONTHLY VOL ○
 WATER MONTHLY VOLUME ▲

FIELD
 RESERVOIR
 LEASE
 WELL

JICARILLA
 BLANCO MESAVARDE
 JICARILLA APACHE
 JICARILLA PL 13E

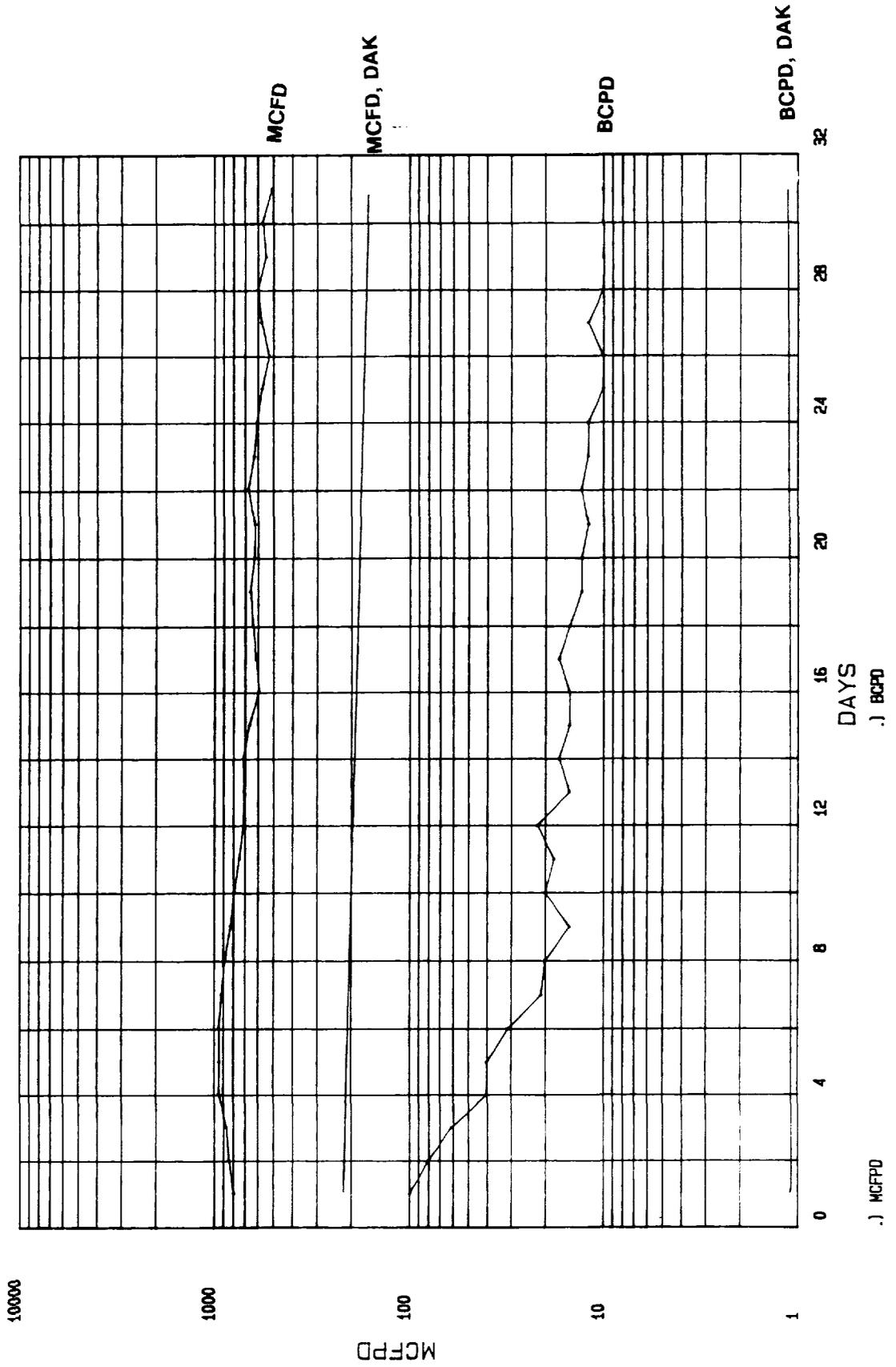
BLANCO PICTURE CLIFFS CONT-90154



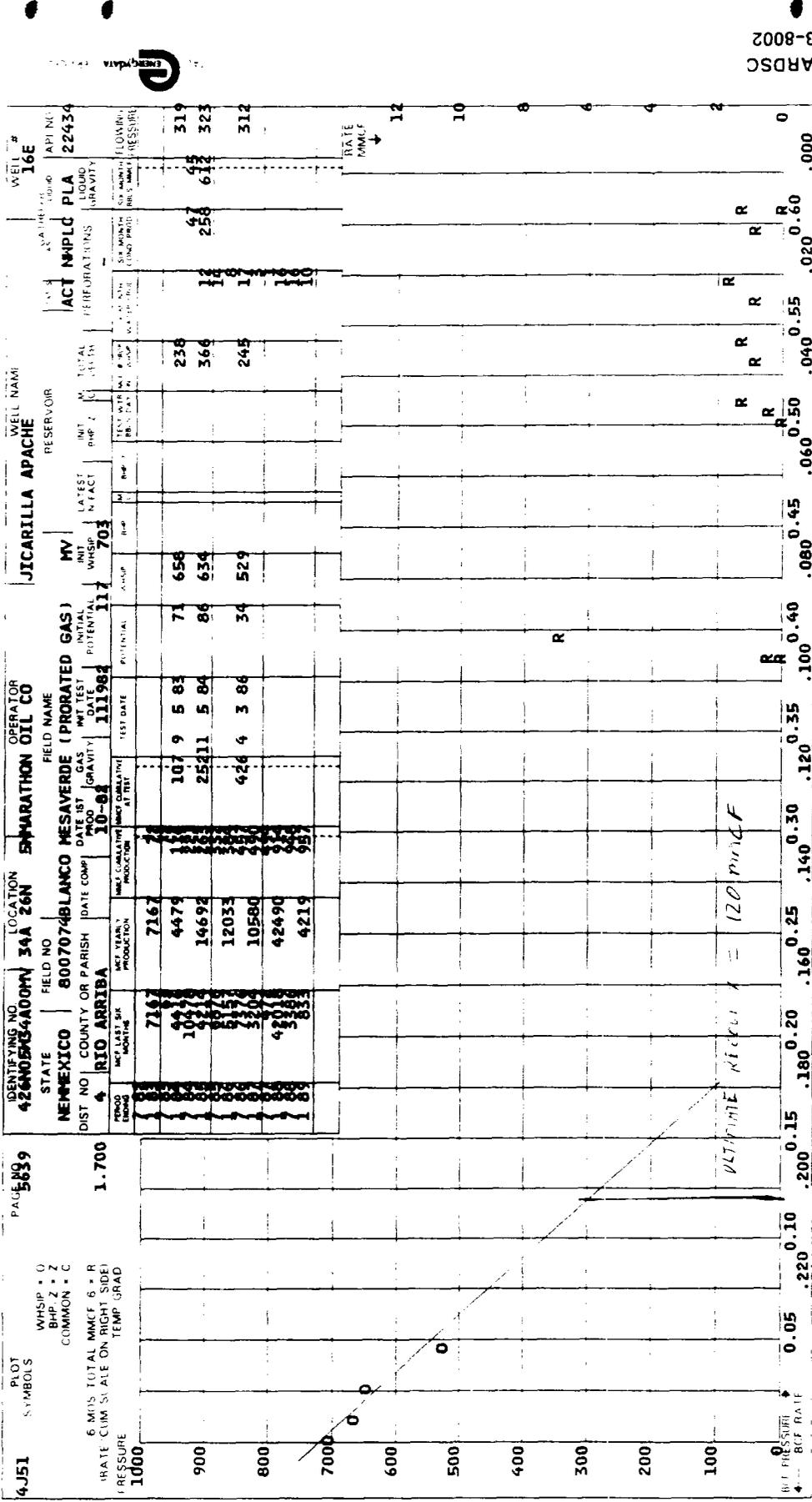
OIL MONTHLY VOLUME _____ (●)
 GAS MONTHLY VOLUME _____ (□)
 WATER MONTHLY VOLUME _____ (▲)

EXHIBIT 5

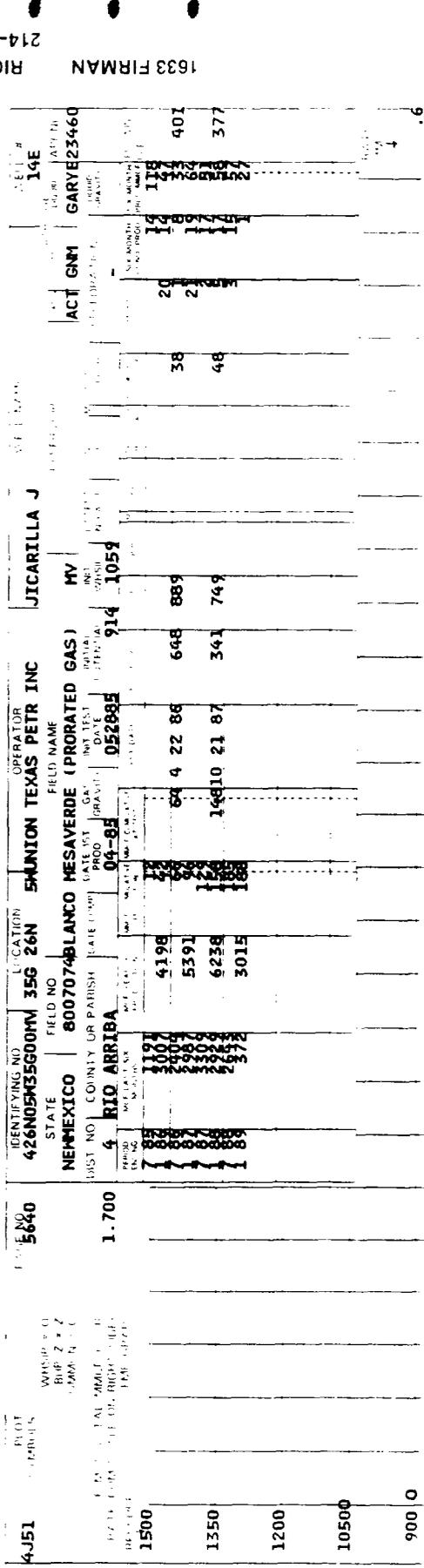
Jicarilla Apache No. 14E



BEFORE EXAMINER CATANACH
OIL CONSERVATION DIVISION
Marathon EXHIBIT NO. 5
CASE NO. 9733



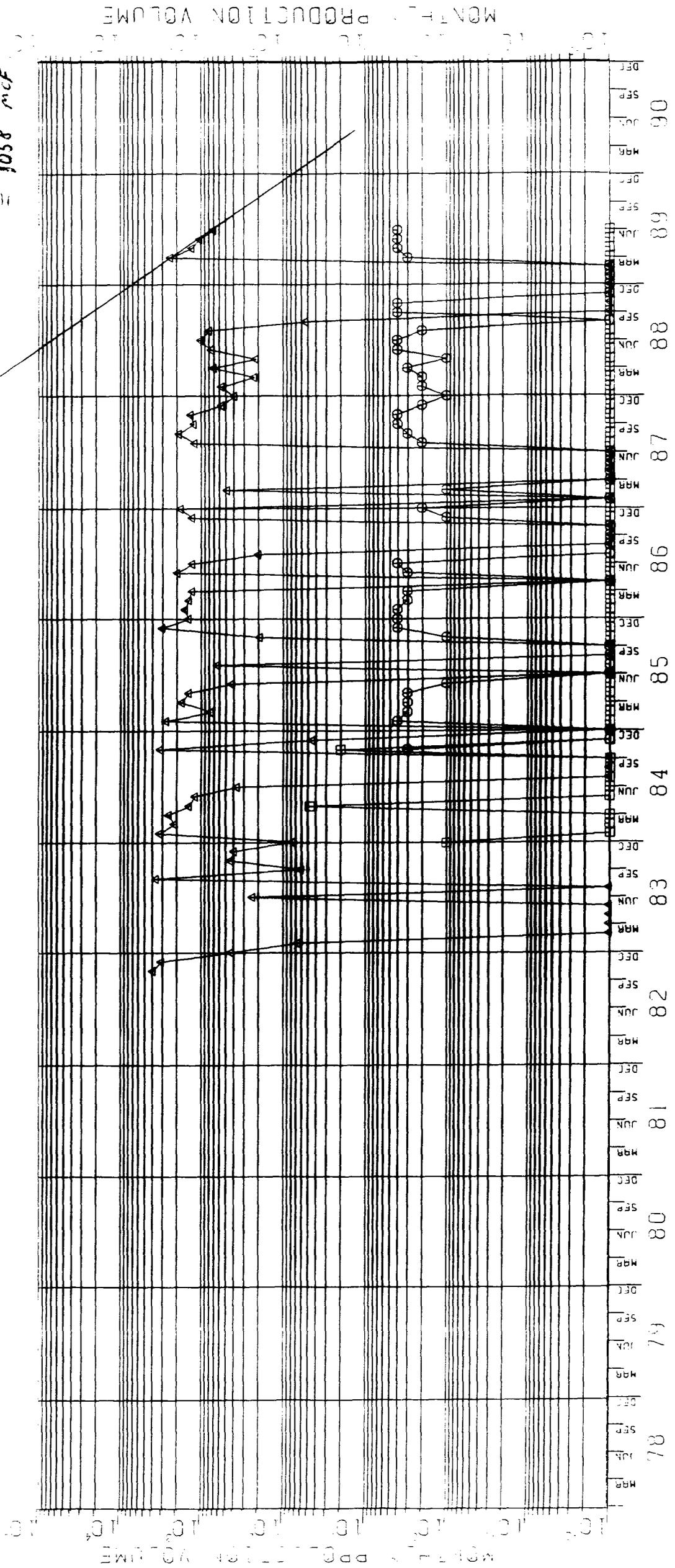
1633 FIRMAN
RICHARDSC
214-783-8002



$$D_i = \frac{14 (1000000)}{1 \text{ YR}} = 4.54 / \text{YR}$$

$$\text{REIN RESERVES} = \frac{700 - 300}{1.54} = 1058 \text{ MCF}$$

UCARILLA APACHE #16E (MV)



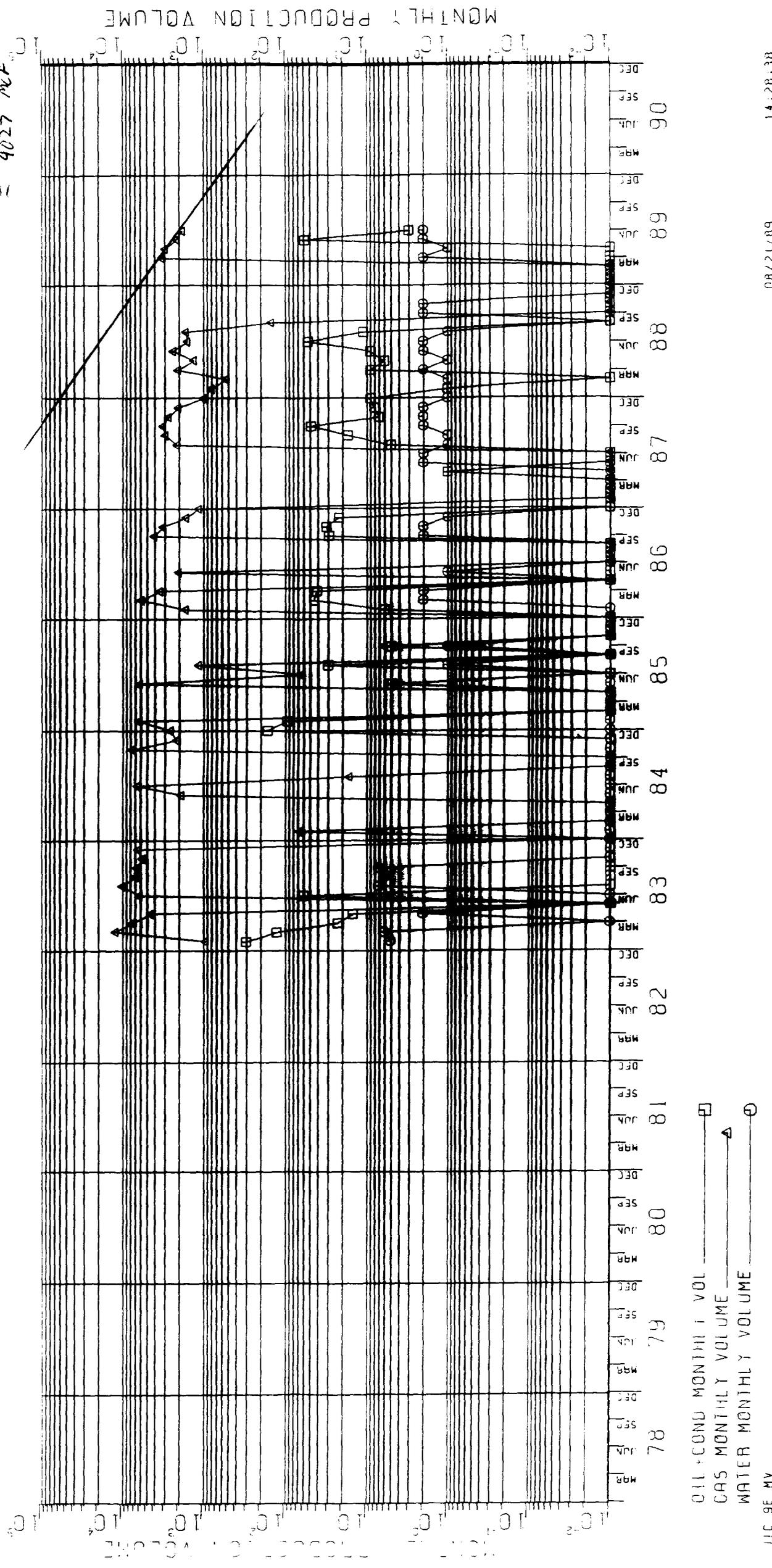
OIL MONTHLY VOL
 GAS MONTHLY VOLUME
 WATER MONTHLY VOLUME

MONTHLY PRODUCTION VOLUME

$$D_i = \frac{\ln(60000/650)}{2 \text{ YR}} = 2.26/\text{YR}$$

$$\text{REM RESERVES} = \frac{2000 - 300}{2.26} \times 12 = 9027 \text{ MCF}^{10^3}$$

JICARILLA APACHE #9E (MV)



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE APPLICATION
MARATHON OIL COMPANY FOR
DOWNHOLE COMMINGLING,
RIO ARriba COUNTY, NEW MEXICO

CASE NO. 9733

CERTIFICATE OF MAILING

AND

COMPLIANCE WITH ORDER R-8054

In accordance with Division Rule 1207 (Order R-8054) I hereby certify that on August 1, 1989, I caused to be mailed by certified mail, return-receipt requested, notice of this hearing and a copy of the application for the above referenced case along with the cover letter, at least twenty days prior to the hearing set for August 23 1989 to the parties shown in the application evidenced by the attached copy of the return receipt cards.

Original signed by
W. THOMAS KELLAHIN

W. Thomas Kellahin

SUBSCRIBED AND SWORN TO before me this 17th day of August, 1989.

Romulo Gomez
Notary Public

My Commission Expires:

March 3, 1993

BEFORE EXAMINER CATANACH OIL CONSERVATION DIVISION <u>Marathon</u> EXHIBIT NO. <u>6</u> CASE NO. <u>9733</u>
