



NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
GOVERNOR

AZTEC DISTRICT OFFICE
1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6170 Fax (505) 334-6170

JENNIFER A. SALISBURY
CABINET SECRETARY

ADMINISTRATIVE ORDER RECOMMENDATION

Date: 2/20/96

New Mexico Oil Conservation Division
PO Box 2088
Santa Fe NM 87504-2088

RE: Proposed MC _____
Proposed NSL _____
Proposed WFX _____
Proposed NSP _____

Proposed DHC X _____
Proposed SWD _____
Proposed PMX _____
Proposed DD _____

Gentlemen:

I have examined the application received on 2/15/96
for the Amoco Moore LS #5A

OPERATOR

LEASE & WELL NUMBER

E-24-32N-12W

and my recommendations are as follows:

UL-S-T-R

Approve

Yours truly,

[Signature]



Southern

Rockies

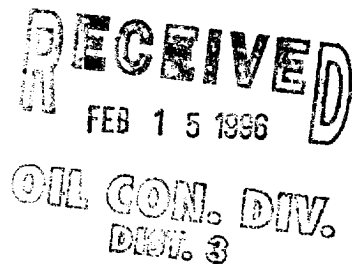
Business

Unit

February 12, 1996

Mr. William J. LeMay, Director
New Mexico Oil Conservation Division
2040 S. Pacheco Street
P. O. Box 6429
Santa Fe, NM 87505

Application for Exception to Rule 303-C
Downhole Commingling
Moore LS #5A Well
2000' FNL & 800' FWL, Unit E Section 24-T32N-R12W
Blanco Mesaverde and Blanco Pictured Cliffs Pools
San Juan County, New Mexico



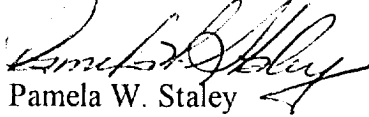
Amoco Production Company hereby requests administrative approval to downhole commingle production from the Blanco Mesaverde and Blanco Pictured Cliffs Pools in the Moore LS #5A well referenced above. The Moore LS #5A is currently a dual completion in the Mesaverde and Pictured Cliffs formations. We plan to complete the well with both the Mesaverde and Pictured Cliffs formations being downhole commingled in the wellbore. The two zones are expected to produce at a total commingled rate of about 145 MCFD with less than 1BCPD. The ownership (WI, RI, ORI) of these pools is common in this wellbore. Downhole commingling will offer an economical method of production while protecting against reservoir damage, waste of reserves and violation of correlative rights. Offset operators to this well will receive a copy of this application by certified mail.

The allocation method that we plan to use for this commingled well is as follows. Both formations have been producing at stabilized rates for some time. We recommend that the Mesaverde and Pictured Cliffs formations gas and condensate be allocated based on current rates. The Mesaverde is currently producing 115 MCFD with 0.03 BCPD while the Pictured Cliffs is currently producing 15 MCFD with 0.01 BCPD. The recommended allocation percentages after downhole commingling would be set as a percentage of the total rate with the Mesaverde attributing 79% of gas production and 75 % of condensate production. The Pictured Cliffs would be allocated at 21% of gas production and 25 % of condensate production. The actual commercial value of the commingled production will not be less than the sum of the values of the production from each of the common sources of supply.

Attached to aid in your review are plats showing the location of the well and offset wells in the same formation, a historical and recent production plot and a C-102 for each formation. This spacing unit is located on a federal lease (SF-078147) and we will send a copy of the application to the BLM as their notice.

Should you have questions concerning this matter, please contact me at (303) 830-5344.

Sincerely,



Pamela W. Staley

Enclosures

cc: Khanh Vu
Gail Jefferson

✓ Frank Chavez, Supervisor
NMOCD District III
1000 Rio Brazos Road
Aztec, NM 87410

Duane Spencer
Bureau of Land Management
1235 La Plata Hwy.
Farmington, NM 87401

Application for Exception to Rule 303: SEGREGATION OF PRODUCTION FROM POOLS

Requirements

- (1) Name and address of the operator:

Amoco Production Company
P.O. Box 800
Denver, CO 80201

- (2) Lease name, well number, well location, name of the pools to be commingled:

Lease Name: Moore

Well Number: #5A

Well Location: 2000' FNL & 800' FWL
Unit E Section 24-T32N-R12W
San Juan County, New Mexico

Pools Commingled: Blanco Mesaverde Pool
Blanco Pictured Cliffs Pool

- (3) A plat of the area showing the acreage dedicated to the well and the ownership of all offsetting leases.

Attached

- (4) A current (within 30 days) 24-hour productivity test on Division Form C-116 showing the amount of oil, gas and water produced from each zone.

The Blanco Mesaverde produced an average stabilized rate of 115 MCFD and 0.3 BCPD. The Blanco Pictured Cliffs zone produced at an average rate of about 30 MCFD and 0.1 BCPD.

- (5) A production decline curve for both zones showing that for a period of at least one year a steady rate of decline has been established for each zone which will permit a reasonable allocation of the commingled production to each zone for statistical purposes.

Blanco Pictured Cliffs Completion:

Historical production curve attached.

Blanco Mesaverde Completion:

Historical production curve attached.

- (6) Estimated bottomhole pressure for each zone. A current (within 30 days) measured bottom hole pressure for each zone capable of flowing.

Bottomhole pressures were estimated from 72 hour shut-in pressures during a packer leakage test for the well. Estimated bottomhole pressure in the Pictured Cliffs formation is 596 PSI while the estimated bottomhole pressure in the Mesaverde is 603 PSI. See attached calculations.

- (7) A description of the fluid characteristics of each zone showing that the fluids will not be incompatible in the wellbore.

The two formations do not produce any fluids that are expected to prohibit commingling, or promote the creation of emulsions or scale.

- (8) A computation showing that the value of the commingled production will not be less than the sum of the values of the individual streams:

Since the BTU content of the produced gasses are very similar, we would expect the commingled production to have a similar value as the sum of the individual streams.

- (9) A formula for the allocation of production to each of the commingled zones and a description of the factors or data used in determining such formula:

The allocation method that we plan to use for this commingled well is as follows. Both formations have been producing at stabilized rates for some time. We recommend that the Mesaverde and Pictured Cliffs formations gas and condensate be allocated based on current rates. The Mesaverde is currently producing 115 MCFD with 0.03 BCPD while the Pictured Cliffs is currently producing 15 MCFD with 0.01 BCPD. The recommended allocation percentages after downhole commingling would be set as a percentage of the total rate with the Mesaverde attributing 79% of gas production and 75 % of condensate production. The Pictured Cliffs would be allocated at 21% of gas production and 25 % of condensate production. The actual commercial value of the commingled production will not be less than the sum of the values of the production from each of the common sources of supply.

- (10) A statement that all offset operators and, in the case of a well on federal land, the United States Bureau of Land Management, have been notified in writing of the proposed commingling.

BLM will receive a copy of this application by certified mail. The offsetting operators listed on the attached sheet will receive a copy of this application by certified mail.

AND GAS

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SOUTHLAND ROYALTY

1
CHAMBERLAIN
PNLK, MVRD, GRRS, DKOT
300452010900N/A
N/A
N/A

300457026890

KINMARK OPERATING CO

10
HORTON 8
PCCF
300452293500

MESA PETROLEUM CO

NO 1 A
JOHNS FEDERAL
MVRD
300452259100

PUBCO PET

1
JOHNS
MVRD
300451145200

SOUTHLAND ROYALTY

1-A
CHAMBERLAIN 1A
MVRD
300452284400

KINMARK OPERATING CO

8
HORTON 8
PCCF
300452181600

GAS PRODUCTS

3
HORTON
MVRD
300451144800

MESA OPERATING

8
FC FEDERAL COM
FRLO
300452783100

AZTEC O&G

1
DECKER
PNLK
300451142300

SOUTHLAND ROYALTY

6
DECKER 6
PCCF
300452333300

SOUTHLAND ROYALTY

1A
DECKER
MVRD
300452284500

EL PASO NATURAL GAS

3-A
MOORE
MVRD
300452328900

CONOCO INC

2
JOHNS FEDERAL
MVRD
300451142201

PUBCO PET

2
JOHNS
MVRD
300451142200

PACIFIC NW PIPELINE

2-19
NEW MEXICO 32-11
MVRD
300451138000

AMOCO PRODUCTION CO

1
MOORE GAS COM E
300452861700

AZTEC O&G

3-A
DECKER
MVRD
300452232000N/A
4R
MOORE LS

300452920000



EL PASO NATURAL GAS

5-A
MOORE
PCCF, MVRD
300452316100N/A
N/A
N/A

30045607101

32.NN-11W

300457084590

AZTEC O&G

1
JOHNS
MVRD
300451130700

SOUTHLAND ROYALTY

1-A
DALSANT 1A
PCCF, MVRD
300452284700

AMOCO PRODUCTION CO

7
MOORE D
FRLO
300452824000

EL PASO NATURAL GAS

4-A
MOORE
MVRD
300452329000N/A
N/A
N/A

300452760600

EL PASO NATURAL GAS CO

NO 8
MOORE

300451131100

SOUTHLAND ROYALTY

5
DECKER 5
PCCF
300452333100

SOUTHLAND ROYALTY CO

NO-2
JOHNS
PCCF
300452180400

NORTHWEST PIPELINE CORP

NO 2
FRLO
PCCF
300452148600

EL PASO NATURAL GAS

2-A
MOORE
MVRD
300452282700AZTEC O&G
2
DECKER
MVRD, DKOT
300451204900

TENNECO OIL

2
MOORE-C
DKOT
300451181800

TENNECO OIL

1
MOORE COM
DKOT
300451182600

EL PASO NATURAL GAS

6-A
MOORE
MVRD
300452305400

DELHI TAYLOR OIL

1
HUBBARD
MVRD
300451123600

EL PASO NATURAL GAS

2
MOORE
MVRD
300451220000

SOUTHLAND ROYALTY

2-A
DECKER 2A
PCCF, MVRD
300452285200

EL PASO NATURAL GAS

7-A
MOORE
MVRD
300452282600

TENNECO OIL

2-E
MOORE-C
DKOT
300452465100

AMOCO PRODUCTION CO

8
MOORE D
300452808600

TENNECO OIL

1-E
MOORE COM
DKOT
300452508600

TENNECO OIL

1
HUBBARD COM
DKOT
300451182700

TENNECO OIL

1
HUBBARD-A
GRRS
300452343500

AMOCO PRODUCTION COMPANY

PLAT MAP

Moore LS 5A
Offset Wells

SCALE 1 IN. = 2,000 FT. APR 26, 1995

HORIZONTAL DATUM NAD27

108° 1' 9" E
1,015,868.35 FT. E36° 56' 56" N
13,420,713.39 FT. N

DWS08592--RUN#95116235414

NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-123
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

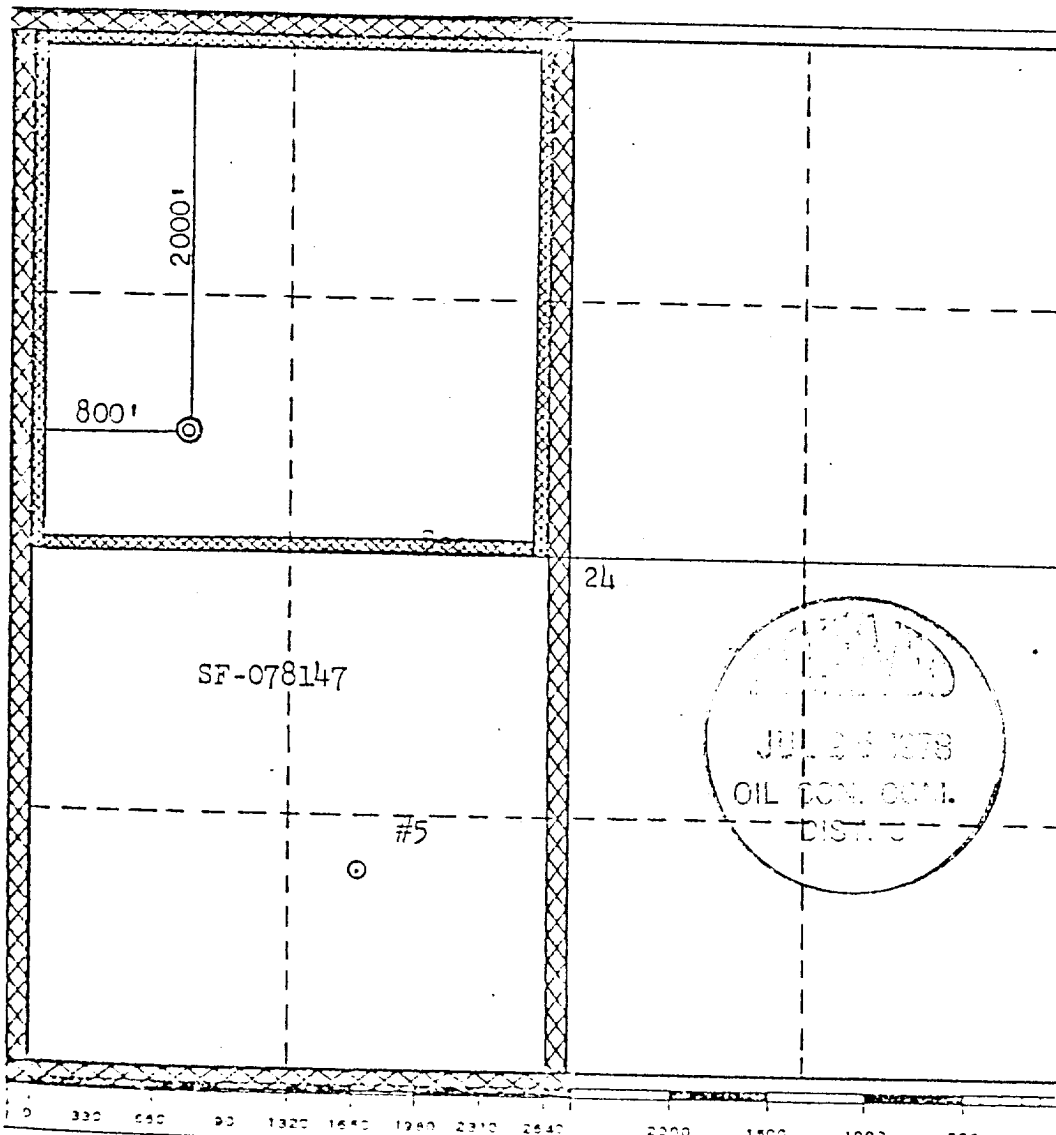
Operator EL PASO NATURAL GAS COMPANY			Lease MOORE (SF-078147)		Well No. 5A
Unit Letter E	Section 24	Township 32N	Range 12W	County San Juan	
Actual Footage Location of Well: 2000 feet from the North line and 800 feet from the West line					
Ground Level Elev. 6468	Producing Formation Pictured Cliffs-Mesa Verde		Pool Blanco Pictured Cliffs Ext. Blanco Mesa Verde		Dedicated Acreage: 160.00 & 320.00 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

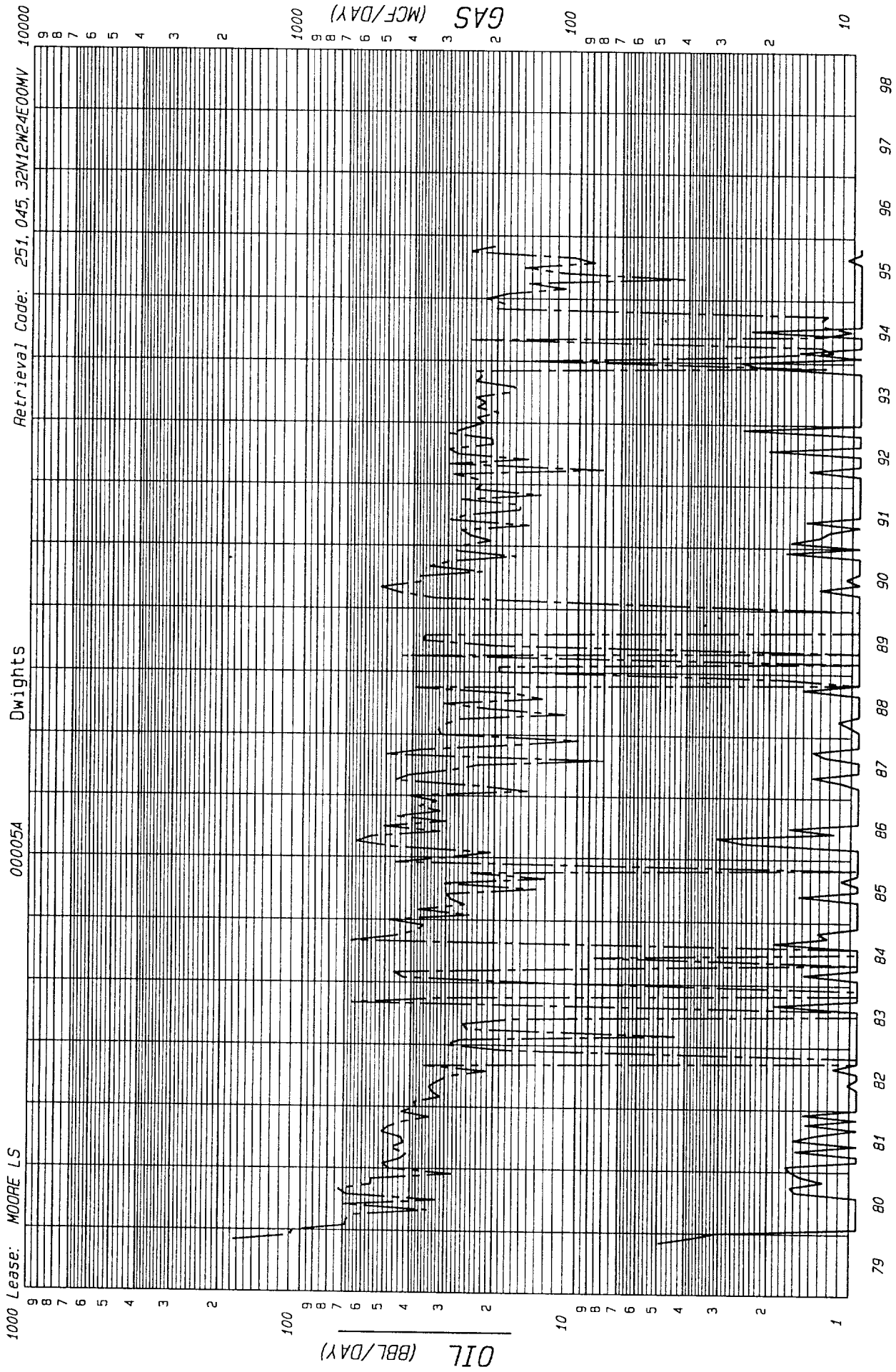
☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION	
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief. <i>Al. G. Sisco</i>	
Name	Drilling Clerk
Position	El Paso Natural Gas Co.
Company	July 20, 1978
Date	
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.	
Date Surveyed	June 20, 1978
Registered Professional Engineer and/or Land Surveyor	<i>Fred B. Kerr Jr.</i>
Certificate No.	2050

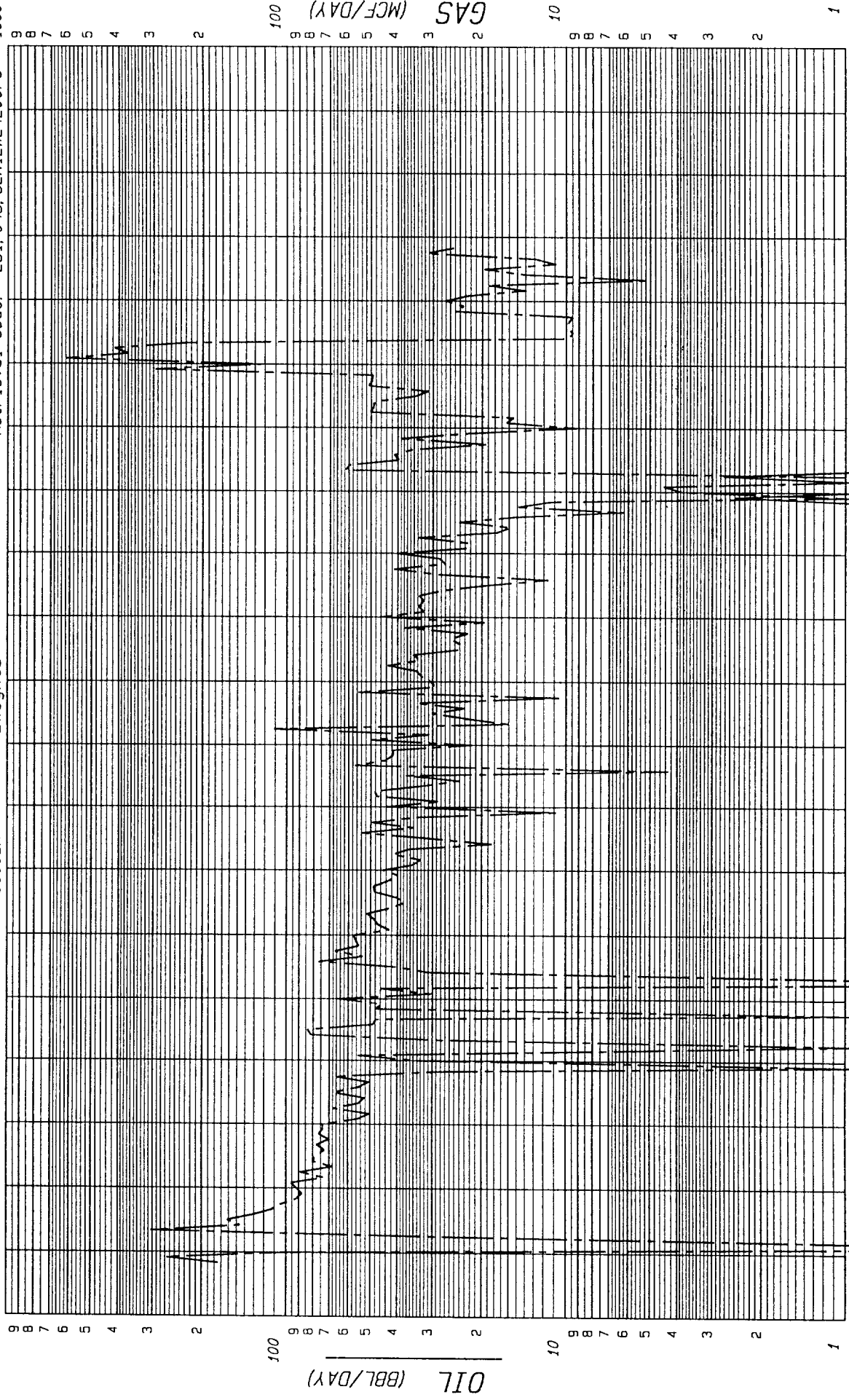


County: SAN JUAN State: NM
Field: BLANCO (MESAVEDE) MV
Reservoir: MESAVEDE
Operator: AMOCO PRODUCTION CO.
Oil Cum: 3937
Gas Cum: 1625902
Location: 24E 32N 12W

F.P. Date 10-79

Date: 02-12-96

1000 Lease: MOORE LS 000054 Dwigths Retrieval Code: 251, 045, 32N12W24E00PC 1000



County: SAN JUAN State: NM
Field: BLANCO (PICTURED CLIFFS) PC
Reservoir: PICTURED CLIFFS
Operator: AMOCO PRODUCTION CO
Oil Cum: 172 Gas Cum: 309220
Location: 24E 32N 12W

F.P. Date 10-79

Date: 02-12-96

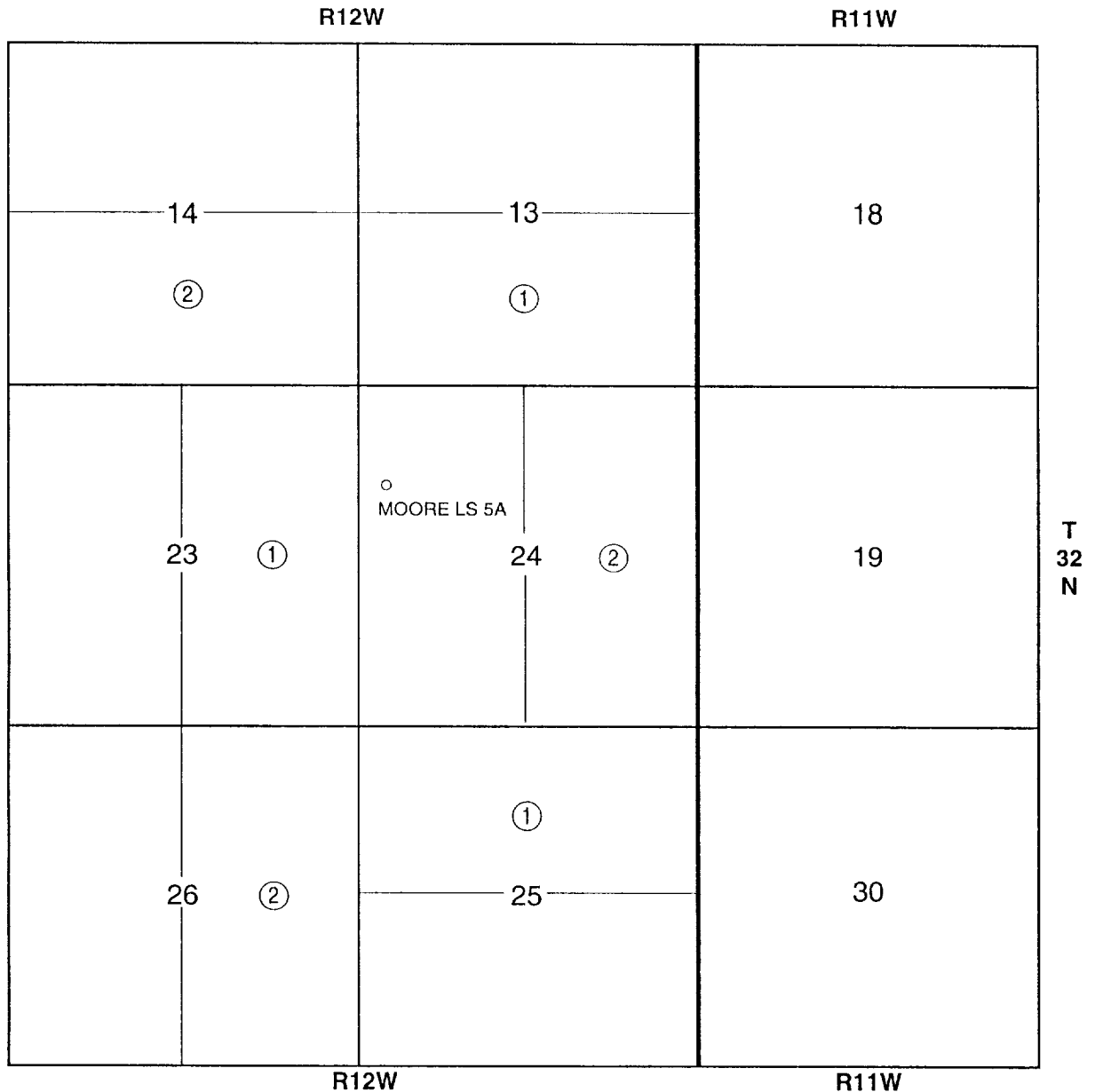
Amoco Production Company

Offset Operator Plat

Moore LS 5A

T32N-R12W Sec. 24

Blanco Mesaverde Formation



- ① Amoco Production Company
- ② Southland Royalty Company

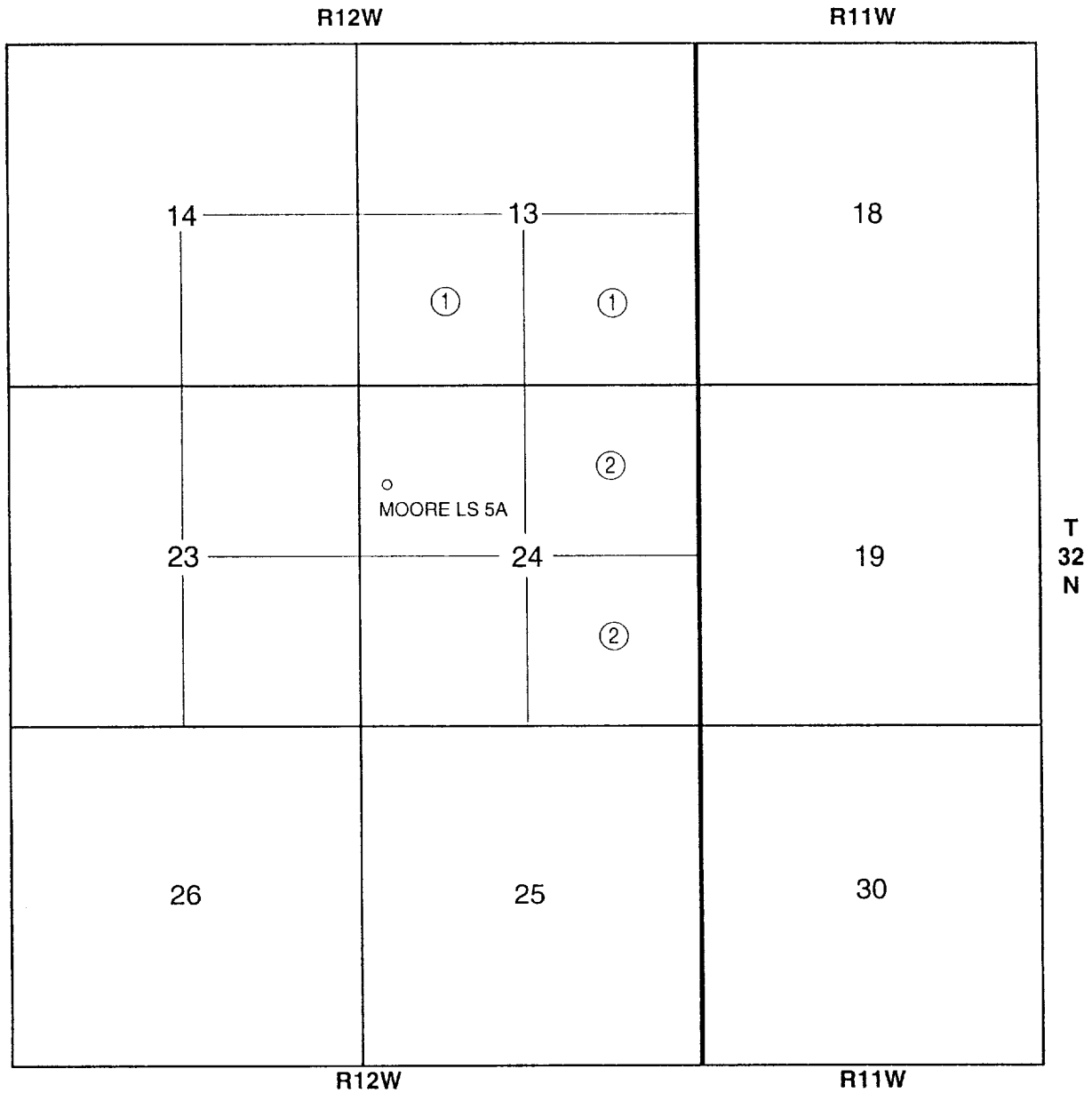
Amoco Production Company

Offset Operator Plat

Moore LS 5A

T32N-R12W Sec. 24

Aztec Pictured Cliffs Formation



- ① Amoco Production Company
- ② Southland Royalty Company

LIST OF ADDRESSES FOR OFFSET OPERATORS
Moore LS #5A

I Meridian Oil, Inc.
P.O. Box 4289
Farmington, NM 87499

STATE OF NEW MEXICO
ENERGY and MINERALS DEPARTMENT

Location of Well: **E243212** Page 1

OIL CONSERVATION DIVISION
NORTHWEST NEW MEXICO

Operator: AMOCO PRODUCTION COMPANY Lease/Well #: MOORE A 005A
Meter #: 97554 RTU: - - County: SAN JUAN *E6*

	NAME RESERVOIR OR POOL	TYPE PROD	METHOD PROD	MEDIUM PROD
UPR COMP	MOORE A 005A PC 90711 (97554)	GAS	FLOW	TBG
LWR COMP	MOORE A 005A MV 90710 (97554)	GAS	FLOW	TBG

PRE-FLOW SHUT-IN PRESSURE DATA

	Hour/Date Shut-In	Length of Time Shut-In	SI Press. PSIG	Stabilized
UPR COMP	10/07/95 <i>as</i>	<i>148 hrs</i>	<i>357</i>	<i>yes</i>
LWR COMP	10/07/95 <i>as</i>	<i>120 hrs</i>	<i>171</i>	<i>yes</i>

FLOW TEST DATE NO. 1

Commenced at (hour, date) *

TIME (hour, date)	LAPSED TIME SINCE*	PRESSURE		Prod Temp.	REMARKS
		Upper	Lower		
10/07/95	Day 1	<i>336</i>	<i>156</i>	<i>61</i>	Both Zones SI
10/08/95	Day 2	<i>344</i>	<i>162</i>	<i>59</i>	Both Zones SI
10/09/95	Day 3	<i>351</i>	<i>167</i>	<i>61</i>	Both Zones SI
10/10/95	Day 4	<i>357</i>	<i>171</i>	<i>63</i>	<i>flowed lower zone</i>
10/11/95	Day 5	<i>362</i>	<i>163</i>	<i>68</i>	
10/12/95	Day 6	<i>367</i>	<i>150</i>	<i>91</i>	

Production rate during test

Oil: _____ BOPD based on _____ BBLs in _____ Hrs _____ Grav _____ GOR _____
Gas: _____ MFCPD: Tested thru (Orifice or Meter): METER

MID-TEST SHUT-IN PRESSURE DATA

	Hour, Date SI	Length of Time SI	SI Press. PSIG	Stabilized (yes/no)
UPR COMP				RECEIVED
LWR COMP				NOV - 8 1995

(Continue on reverse side)

ESTIMATED BOTTOMHOLE PRESSURES						
MOORE LS #5A						
PC	PERFORATIONS	TOP 2906	BOTTOM 3074	MIDPERF	2990	
MV	PERFORATIONS	TOP 5105	BOTTOM 5692	MIDPERF	5399	
	Jun-95	SHUT-IN PRESSURES				
	PC	=	357	PSIG		
	MV	=	171	PSIG		
	GRADIENT	= 0.8 PSI/FT				
	PC BHP =	357	PSIG +	2990	X 0.08	PSIG
		=	596	PSI		
	MV BHP =	171	PSIG +	5399	X 0.08	PSIG
		=	603	PSI		