



Southern

Rockies

Business

Unit

March 13, 1996

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

RECEIVED
MAR 18 1996

OIL CON. DIV.
DIST. 3

Application for Exception to Rule 303-C

Downhole Commingling

Barnes LS #4A Well

1018' FNL & 1720' FWL, Unit C Section 26-T32N-R11W

Blanco Mesaverde (Pool IDN 72319) and Blanco Pictured Cliffs (Pool IDN 72359) Pools
San Juan County, New Mexico

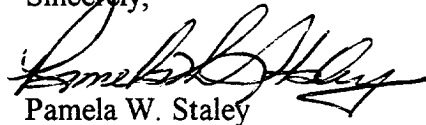
Amoco Production Company hereby requests administrative approval to downhole commingle production from the Blanco Mesaverde and Blanco Pictured Cliffs Pools in the Barnes LS #4A well referenced above. The Barnes LS #4A is currently a dual completion in the Mesaverde and Pictured Cliffs formations with the Pictured Cliffs formation temporarily shut-in. We plan to complete the well with both the Mesaverde and Pictured Cliffs formations being downhole commingled in the wellbore restoring the Pictured Cliffs to production. The two zones are expected to produce at a total commingled rate of about 273 MCFD with less than 1 BCPD. The ownership (WI, RI, ORI) of these pools is not 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 and all interest owners involved in the two formations 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 historically produced at stabilized rates until the Pictured Cliffs became temporarily abandoned due to low productivity. We recommend that the Mesaverde and Pictured Cliffs formations gas and condensate be allocated based on historical rates. The Mesaverde is currently producing 273 MCFD with 0.33 BCPD while the Pictured Cliffs has historically produced at 20 MCFD with less than 1 BCPD. The recommended allocation percentages after downhole commingling would be set as a percentage of the total rate with the Mesaverde attributing 93% of gas production and 93 % of condensate production. The Pictured Cliffs would be allocated at 7% of gas production and 7 % 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-078039) 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
Proration File
Well File

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: Barnes LS
Well Number: #4A
Well Location: 1018' FNL & 1720' FWL
Unit C Section 26-T32N-R11W
San Juan County, New Mexico

Pools Commingled: Blanco Mesaverde Pool (Pool IDN 72319)
Blanco Pictured Cliffs Pool (Pool IDN 72359)

- (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 253 MCFD and 0.33 BCPD. The Blanco Pictured Cliffs zone historically produced at an average rate of about 20 MCFD and less than 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 447 PSI while the estimated bottomhole pressure in the Mesaverde is 326 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:

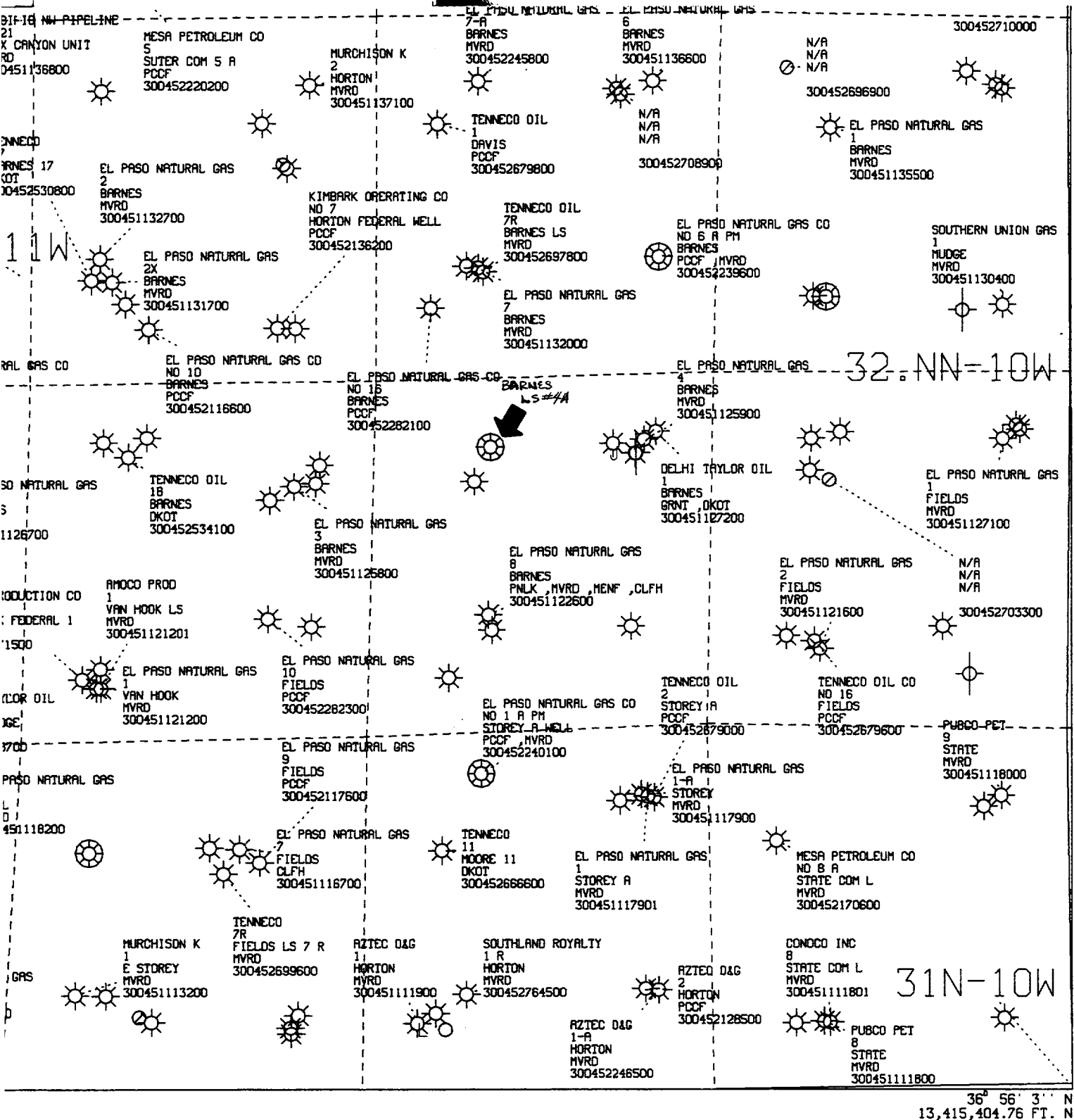
The allocation method that we plan to use for this commingled well is as follows. Both formations historically produced at stabilized rates until the Pictured Cliffs became temporarily abandoned due to low productivity. We recommend that the Mesaverde and Pictured Cliffs formations gas and condensate be allocated based on historical rates. The Mesaverde is currently producing 273 MCFD with 0.33 BCPD while the Pictured Cliffs has historically produced at 20 MCFD with less than 1 BCPD. The recommended allocation percentages after downhole commingling would be set as a percentage of the total rate with the Mesaverde attributing 93% of gas production and 93 % of condensate production. The Pictured Cliffs would be allocated at 7% of gas production and 7 % 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.

- (11) Referencing NMOCD Order No. 10470 Rule 303 (D) (11): In a case where there is diversity of ownership between the zones to be commingled (including working royalty, or overriding royalty interest), the applicant shall submit a statement that all such interest owners have been notified in writing of the proposed commingling.

All interest owners in the two formations will receive a copy of this application by certified mail.



NEW MEXICO OIL CONSERVATION COMMISSION
LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

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

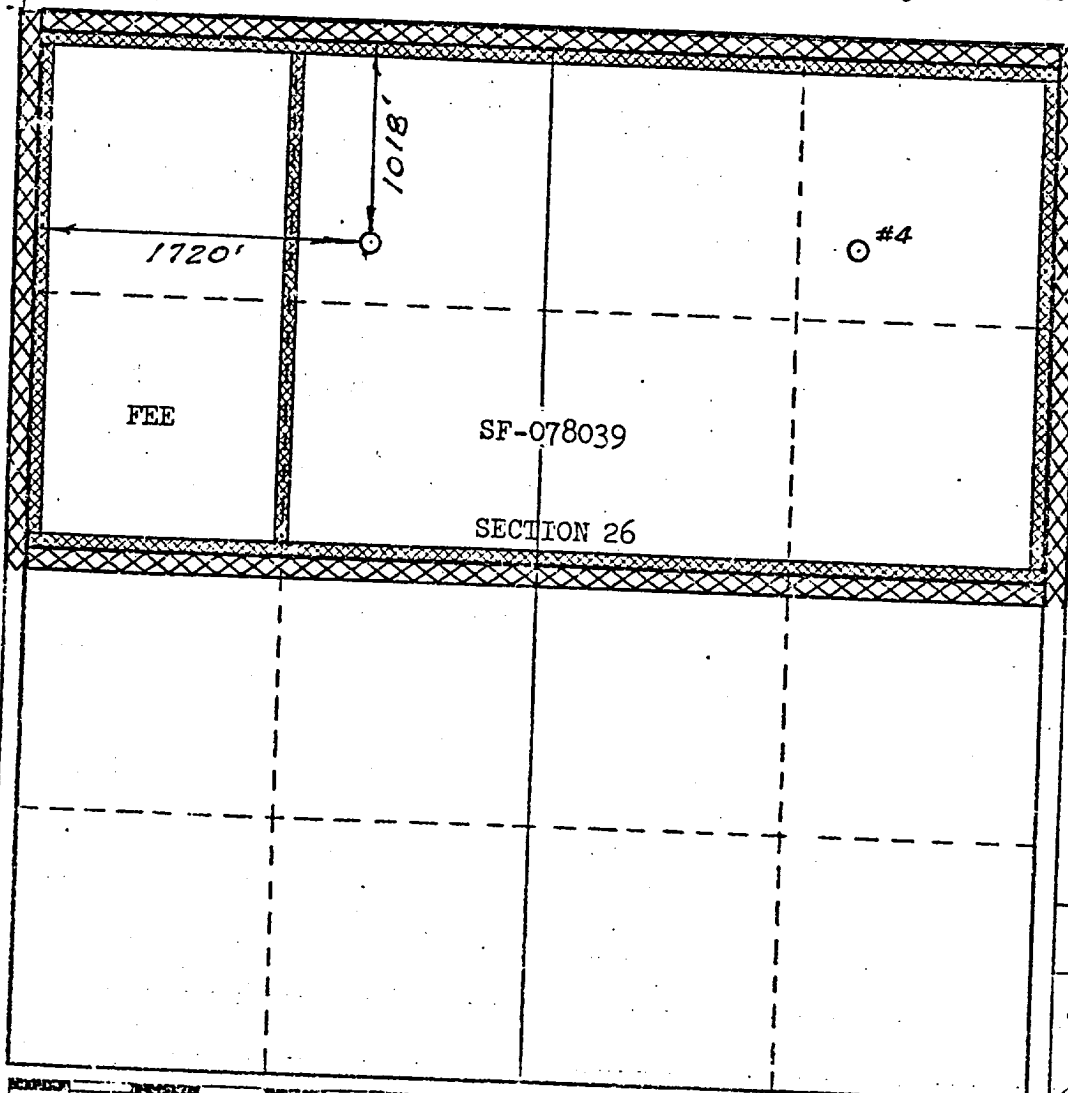
Operator EL PASO NATURAL GAS COMPANY			Lease BARNES (SF-078039)		Well No. 4A
Unit Letter C	Section 26	Township 32-N	Range 11-W	County SAN JUAN	
Actual Footage Location of Well: 1018 feet from the NORTH line and 1720 feet from the WEST line					
Ground Level Elev. 6487	Producing Formation MESA VERDE		Pool BLANCO MESA VERDE	Dedicated Acreage: 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 Communitization

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.

Original Signed by
D. G. Brice

Name
Drilling Clerk
Position
El Paso Natural Gas
Company
March 17, 1977
Date

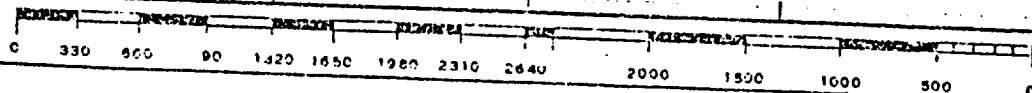
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed
FEBRUARY 28, 1977

Registered Professional Engineer
and/or Land Surveyor

[Signature]

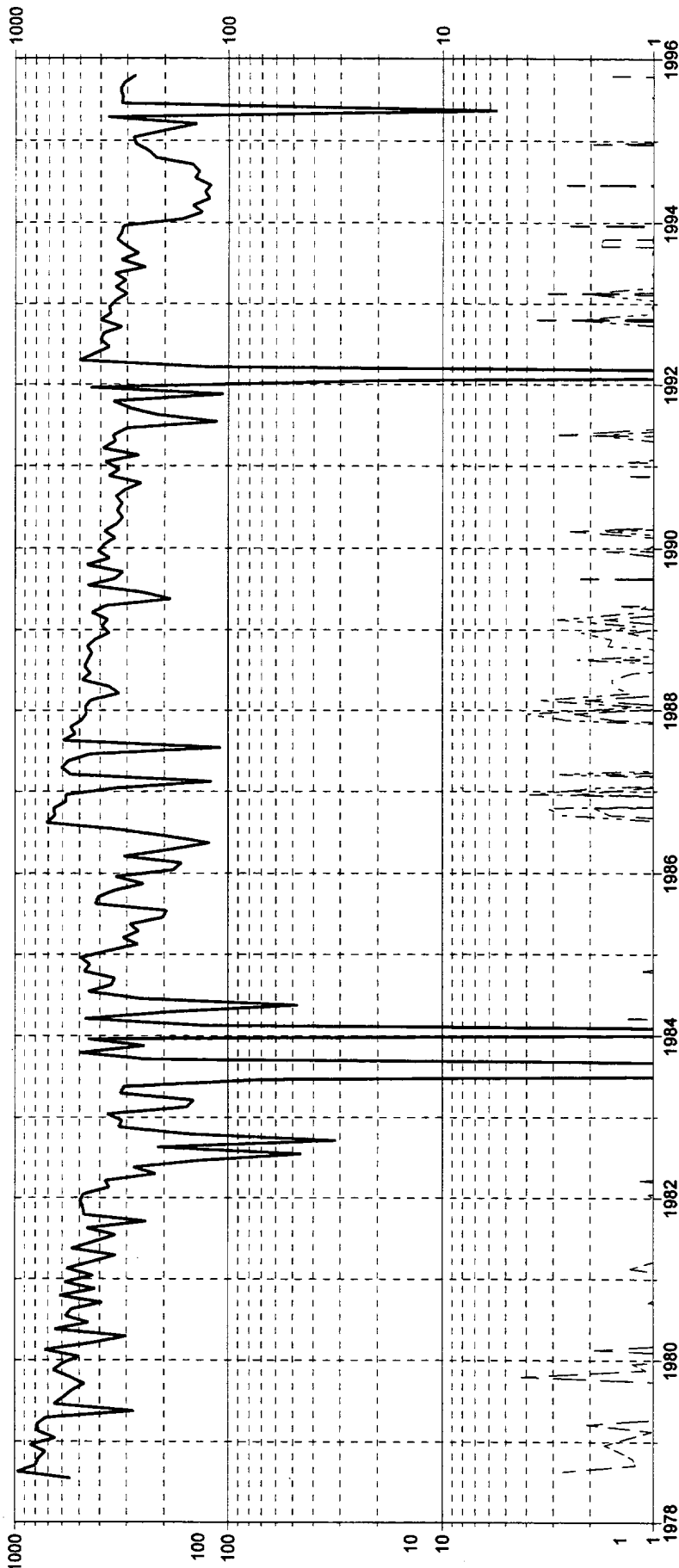
Certificate No. **1760**



Dwights

1000 Lease: BARNES LS 00004A

Retrieval Code: 251,045,32N11W26C00M



County: SAN JUAN

Field: BLANCO (MESAVERDE) MV

Reservoir: MESAVERDE

Operator: AMOCO PRODUCTION CO

State: NM

Oil Cum: 4186 bbl

Gas Cum: 2282 mmcf

Location: 26C 32N 11W

F.P. Date: 07/78

Water (bbl/day)

Gas (mcf/day)

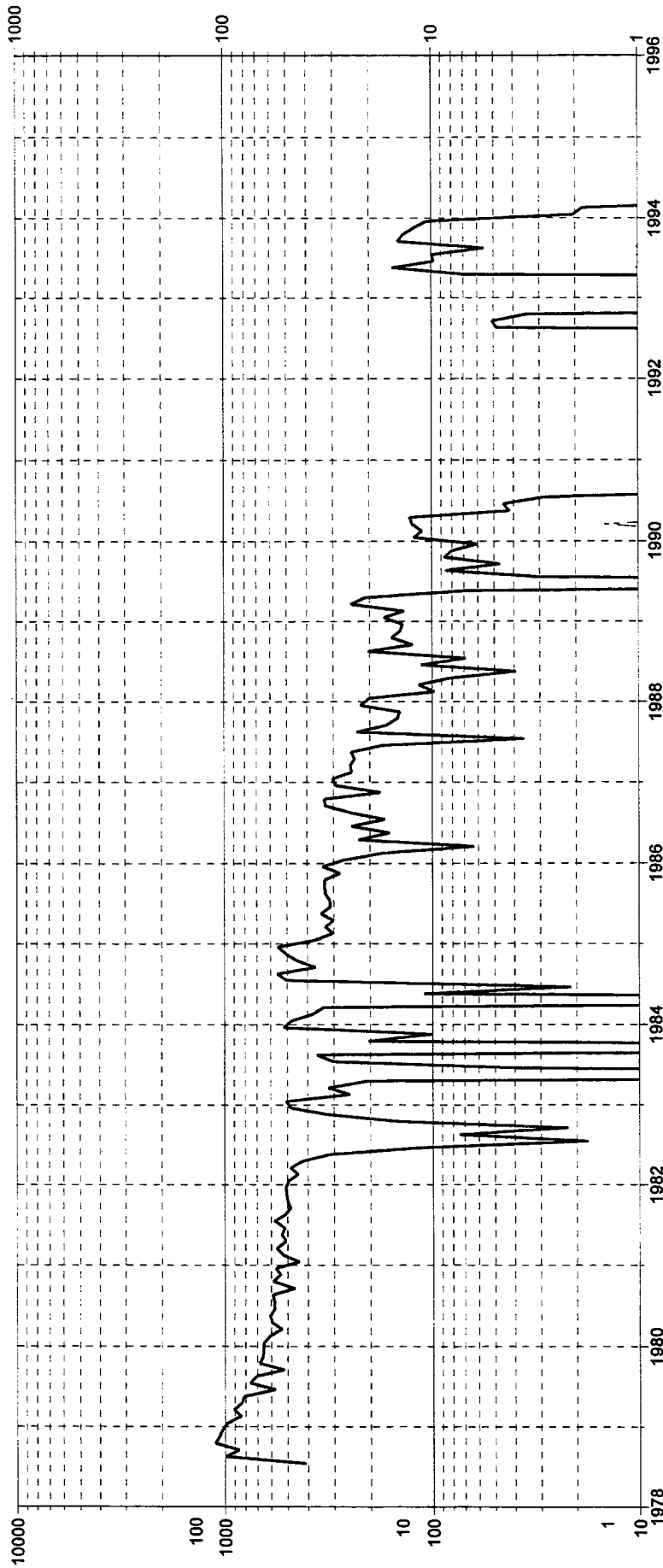
Date: 03/12/96

Oil (bbl/day)

Dwights

1000 Lease: BARNES LS 00004A

Retrieval Code: 251,045,32N11W26C00P



County: SAN JUAN

State: NM

F.P. Date: 0778

Date: 03/12/96

Field: BLANCO (PICTURED CLIFFS) PC

Oil Cum: 84 bbl

Reservoir: PICTURED CLIFFS

Gas Cum: 1555 mmcf

Water (bbl/day)

Operator: AMOCO PRODUCTION CO

Location: 26C 32N 11W

Gas (mcf/day)

Oil (bbl/day)

<u>ESTIMATED BOTTOMHOLE PRESSURES</u>							
<u>Barnes LS #4A</u>							
PC	PERFORATIONS	TOP	3256	BOTTOM	3290	MIDPERF	3273
MV	PERFORATIONS	TOP	4769	BOTTOM	5141	MIDPERF	4955
	Jun-94	SHUT-IN PRESSURES					
		PC	=	349 PSIG			
		MV	=	177 PSIG			
	GRADIENT	= 0.3 PSI/FT					
	PC BHP =	349 PSIG +	3273	X 0.03 PSI/FT			
		=	447 PSI				
	MV BHP =	177 PSIG +	4955	X 0.03 PSI/FT			
		=	326 PSI				

Barnes LS #4A

PC	PERFORATIONS	TOP	3256	BOTTOM	3290	MIDPERF	3273
MV	PERFORATIONS	TOP	4769	BOTTOM	5141	MIDPERF	4955
Jun-94		SHUT-IN PRESSURES					
	PC	=	349	PSIG			
	MV	=	177	PSIG			
GRADIENT		= 0.3 PSI/FT					
PC BHP =		349	PSIG +	3273	X 0.03 PSI/FT		
		=	447	PSI			
MV BHP =		177	PSIG +	4955	X 0.03 PSI/FT		
		=	326	PSI			

STATE OF NEW MEXICO
ENERGY and MINERALS DEPARTMENT

Location of Well: C263211 Page 1

OIL CONSERVATION DIVISION
NORTHWEST NEW MEXICO PACKER-LEAKAGE TEST

C-26-32-11

Operator: AMOCO PRODUCTION COMPANY Lease/Well #:BARNES LS 004A
Meter #:90112 RTU:2-046-05 County:SAN JUAN

	NAME RESERVOIR OR POOL	TYPE PROD	METHOD PROD	MEDIUM PROD
UPR COMP	BARNES LS 004A PC 90113	GAS	FLOW	TBG
LWR COMP	BARNES LS 004A MV 90112	GAS	FLOW	TBG

PRE-FLOW SHUT-IN PRESSURE DATA

	Hour/Date Shut-In	Length of Time Shut-In	SI Press. PSIG	Stabilized
UPR COMP	06/15/94 9 ⁰⁰ am 12	121 HRS	C 349 T 342	YES
LWR COMP	06/15/94 9 ⁰⁰ am 12	75 HRS	177	yes

FLOW TEST DATE NO.1

Commenced at (hour,date)*

Zone Producing (Upr/Lwr)

TIME (hour, date)	LAPSED TIME SINCE*	PRESSURE		Prod Temp.	REMARKS
		Upper	Lower		
06/15/94 12 9 ⁰⁰ am	Day 1	C 347/T 338	T 95		Both Zones SI
06/16/94 13 11 ³⁰ am	Day 2	C 349/T 338	T 160		Both Zones SI
06/17/94 14	Day 3	C 349/T 341	T 174		Both Zones SI
15/06/18/94 15	Day 4	C 349/T 341	T 177		ON @ 1 ¹⁵ pm
06/19/94 15 16	Day 5	C 349/T 342	T 147		LOWER ZONE FLOWING
06/20/94 17	Day 6	C 349/T 342	T 142		LOWER ZONE FLOWING

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

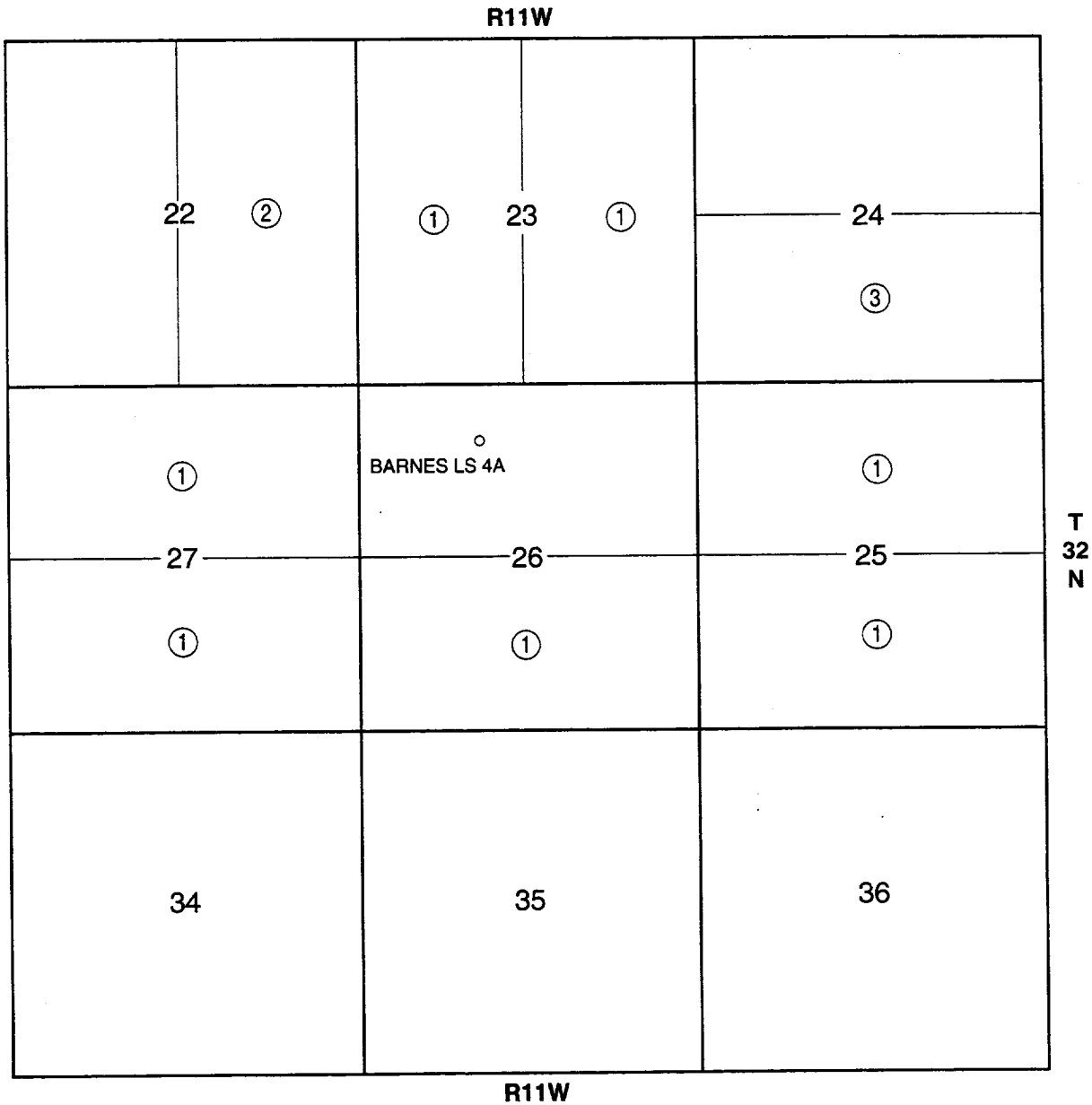
	Hour,Date SI	Length of Time SI	SI Press. PSIG	Stabilized (yes/no)
UPR COMP				
LWR COMP				

(Continue on reverse side)

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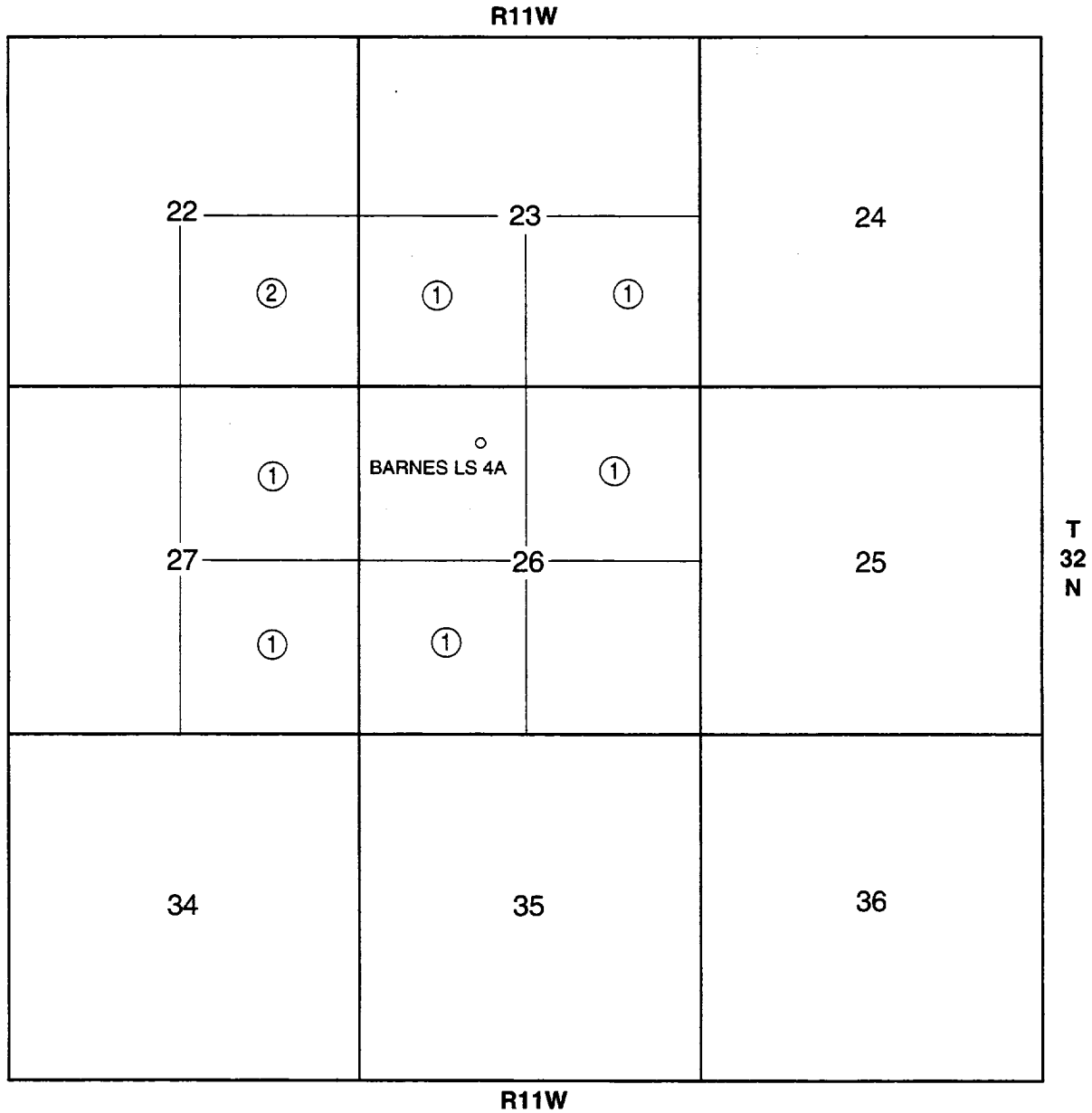
OIL CON. DIV.
DIST. 3

Amoco Production Company
 Offset Operator Plat
 Barnes LS 4A
 T32N-R11W Sec. 26
 Blanco Mesaverde Formation



- ① Amoco Production Company
- ② Kimbark Oil & Gas Co.
- ③ Southland Royalty Company

Amoco Production Company
 Offset Operator Plat
 Barnes LS 4A
 T32N-R11W Sec. 26
 Blanco Pictured Cliffs Formation



- ① Amoco Production Company
- ② Kimbark Oil & Gas Co.

LIST OF ADDRESSES FOR OFFSET OPERATORS
Barnes LS #4A

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

- 2 Kimbark Oil and Gas Co.
1660 Lincoln Street, Suite 2700
Denver, CO 80202

69896600 00001
617000 00
AMOCO PRODUCTION COMPANY
P O BOX 591
TULSA

ZJAM63
OK 74102-0591

69896600 00001
923261 00
PAUL B AND SUSAN D HORTON
C/O MCCALL PARKHURST AND HORTON
900 MAXUS ENERGY TOWER
717 NORTH HARWOOD SUITE 900
DALLAS TX 75201-6587

69896600 00001
682516 00
R E BEAMON III
SUITE 470
THREE RIVERWAY
HOUSTON

ZJAM63
TX 77056-1942

69896600 00001
686997 00
GLORIA WYNNE LANKFORD
248 SUGARBERRY CIRCLE
HOUSTON TX 77024-7246

69906800 00001
129567 00
BETSY BRYANT
2201 BROOKHOLLOW
ABILENE

ZJAM63
TX 79605-5507

69896600 00001
680325 00
PATTIE BEAMON LUNDELL
1616 SOUTH VOSS #870
HOUSTON TX 77057-2626

69896600 00001
924261 00
HARRIET BUCHENAU
P O BOX 867585
PLANO

ZJAM63
TX 75086-7585

69896600 00001
927775 00
LINDA BROWN MCGIMSEY
221 TUCKER LANE
DAYFIELD CO 81122-9237

69906800 00001
926545 00
WILLIAM J CAPEY
C/O CONERICA BANK TEXAS
P O BOX 650282
DALLAS

ZJAM63
TX 75265-0282

69896600 00001
926364 00
SARAH S MIMS TRUST
WILLIAM L MADSEN AND SARAH S MIMS
COTRUSTEES
P O BOX 111846
CARROLLTON TX 75011-1846

69896600 00001
603416 25
CONOCO INC
P O BOX 951063
DALLAS

ZJAM63
TX 75395-1063

69896600 00001
710000 01
MINERALS MANAGEMENT SERVICE
ROYALTY MANAGEMENT PROGRAM
PO BOX 5810 TA
DENVER CO 80217-5810

69896600 00001
134698 00
CROSS TIMBERS OIL COMPANY
P O BOX 840287
DALLAS

ZJAM63
TX 75284-0287

69896600 00001
929031 00
MOORE LOYAL TRUST
LEE WAYNE MOORE TRUSTEE
403 NORTH MARIENFIELD
MIDLAND TX 79701-4323

69906800 00001
129569 00
MITZI EASLEY
3900 DOMINION COVE
AUSTIN

ZJAM63
TX 78759-7300

69906800 00001
129568 00
SUSAN RITTER
P O BOX 162606
AUSTIN TX 78716-2606

69906800 00001 ZJAM63
133354 00
HENRIETTA E SCHULTZ TRUSTEE
LINCOLN PLAZA SUITE 2160 LB-1
500 NORTH AKARD
DALLAS TX 75201-3360

69906800 00001 ZJAM63
924869 00
MARTHA M TOW
BOX 87
THOREAU NM 87323-0087

69906800 00001 ZJAM63
615188 00
UNION OIL COMPANY OF CALIFORNIA
P O BOX 4531
HOUSTON TX 77210-4531

69906800 00001 ZJAM63
924274 00
CHARLINE SMITH WHITE
61 RD 5251
BLOOMFIELD NM 87413-9720