

DISTRICT I
P.O. Box 1980, Hobbs, NM 88241-1980
DISTRICT II
811 South First St., Artesia, NM 88210-2835
DISTRICT III
1000 Rio Brazos Rd, Aztec, NM 87410-1893

State of New Mexico
Energy, Minerals and Natural Resources Department
OIL CONSERVATION DIVISION
2040 S. Pacheco
Santa Fe, New Mexico 87505-6429

Form C-107-A
New 3-12-98

APPROVAL PROCESS:

☒ Administrative ☐ Hearing

EXISTING WELLBORE

☒ YES ☐ NO

APPLICATION FOR DOWNHOLE COMMINGLING

Operator Phillips Petroleum Company Address 5525 Hwy. 64, Farmington, NM 87401
Lease San Juan 29-5 Unit Well No. 45 Unit Ltr. - Sec - Twp - Rge A, Section 22, T29N, R5W County Rio Arriba
OGRID NO. 017654 Property Code 009256 API NO. 30-039-07596 Spacing Unit Lease Types: (check 1 or more)
Federal ☒ State ☐ (and/or) Fee ☐

The following facts are submitted in support of downhole commingling:	Upper Zone	Intermediate Zone	Lower Zone
1. Pool Name and Pool Code	77440 Gobernador PC		72319 Blanco Mesaverde
2. Top and Bottom of Pay Section (Perforations)	3730' - 3780'		4662' - 5140'
3. Type of production (Oil or Gas)	gas		gas
4. Method of Production (Flowing or Artificial Lift)	flowing		flowing
5. Bottomhole Pressure Oil Zones - Artificial Lift: Gas & Oil - Flowing: All Gas Zones: Estimated Current Measured Current Estimated Or Measured Original	a. (Current) 540 psi (est.) b. (Original) 1288 (est.)		a. 800 psi (est.) b. 1234 psi (est.)
6. Oil Gravity (^o API) or Gas BTU Content	1145 btu		1150 btu
7. Producing or Shut-In?	n/a		producing
Production Marginal? (yes or no)	yes		yes
• If Shut-In, give date and oil/gas/water rates of last production Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data • If Producing, give date and oil/gas/water rates of recent test (within 60 days)	Date: Rates: Date: Estimated Rates: 200 mcf/d	Date: Rates: Date: Rates:	Date: Rates: Date: 1/17/00 Rates: 285 mcf/d
8. Fixed Percentage Allocation Formula - % for each zone	Oil: % Gas: %	Oil: % Gas: %	Oil: % Gas: %

9. If allocation formula is based upon something other than current or past production, or is based upon some other method, submit attachments with supporting data and/or explaining method and providing rate projections or other required data.

10. Are all working, overriding, and royalty interests identical in all commingled zones? ☐ Yes ☒ No
If not, have all working, overriding, and royalty interests been notified by certified mail? ☐ Yes ☒ No
Have all offset operators been given written notice of the proposed downhole commingling? ☒ Yes ☐ No

11. Will cross-flow occur? ☒ Yes ☐ No If yes, are fluids compatible, will the formations not be damaged, will any cross-flowed production be recovered, and will the allocation formula be reliable. ☒ Yes ☐ No (If No, attach explanation)

12. Are all produced fluids from all commingled zones compatible with each other? ☒ Yes ☐ No

13. Will the value of production be decreased by commingling? ☐ Yes ☒ No (If Yes, attach explanation)

14. If this well is on, or communitized with, state or federal lands, either the Commissioner of Public Lands or the United States Bureau of Land Management has been notified in writing of this application. ☐ Yes ☒ No

15. NMOCD Reference Cases for Rule 303(D) Exceptions: ORDER NO(S). R-10770

16. ATTACHMENTS:

- C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
- Production curve for each zone for at least one year. (If not available, attach explanation.)
- For zones with no production history, estimated production rates and supporting data.
- Data to support allocation method or formula.
- Notification list of all offset operators.
- Notification list of working, overriding, and royalty interests for uncommon interest cases.
- Any additional statements, data, or documents required to support commingling.

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

SIGNATURE Hank Baca TITLE Reservoir Engr. DATE 2/16/00

TYPE OR PRINT NAME Hank Baca TELEPHONE NO. (505) 599-3470

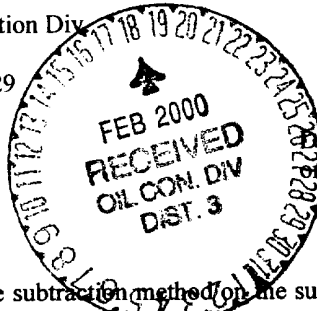


PHILLIPS PETROLEUM COMPANY

FARMINGTON, NEW MEXICO 87401
5525 HWY. 64 NBU 3004

February 16, 2000

New Mexico Oil & Gas Conservation Div.
2040 South Pacheco
Santa Fe, New Mexico 87505-6429



Downhole Commingling Allocation Method
the San Juan 29-5 Unit #45

Dear Sirs:

Phillips is proposing to utilize the subtraction method on the subject well for approximately 12 months after actual commingling occurs. After the first 12 months, we will convert to the ratio method as indicated in our commingling application. We believe this will be a more accurate method of allocating production by giving the Pictured Cliffs production time to stabilize.

Mesaverde Production Forecast

February 2000	6,174	March 2000	5,925
April 2000	6,072	May 2000	6,021
June 2000	5,395	July 2000	5,926
August 2000	5,687	September 2000	5,829
October 2000	5,595	November 2000	5,735
December 2000	5,687	January 2001	5,460

For example, if the total volume for February 2000 were 11,974 mcf, then the Mesaverde would be allocated 6,174 mcf and the Pictured Cliffs 5,800 mcf. And subsequently, the Mesaverde would be allocated $(6,174/11,974)$ or 51.56%, and the Pictured Cliffs would be allocation $(5,800/11,974)$ or 48.44%.

Sincerely,

PHILLIPS PETROLEUM COMPANY

Hank Baca
Reservoir Engineer

HB/pc

cc: OCD – Aztec
BLM- Farmington
NM Commissioner of Public Lands – Santa Fe

District I
PO Box 1900, Hobbs, NM 88241-1900
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

Revised October 18, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

RECEIVED
BLM

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

BLM

99 JUN 14 PM 4:18 ☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-039-07596		Pool Code 77440	Pool Name Gobernador Pictured Cliffs
Property Code 009256	Property Name San Juan 29-5		Well Number #45
OGRID No. 017654	Operator Name Phillips Petroleum Company		Elevation 6775'

Surface Location

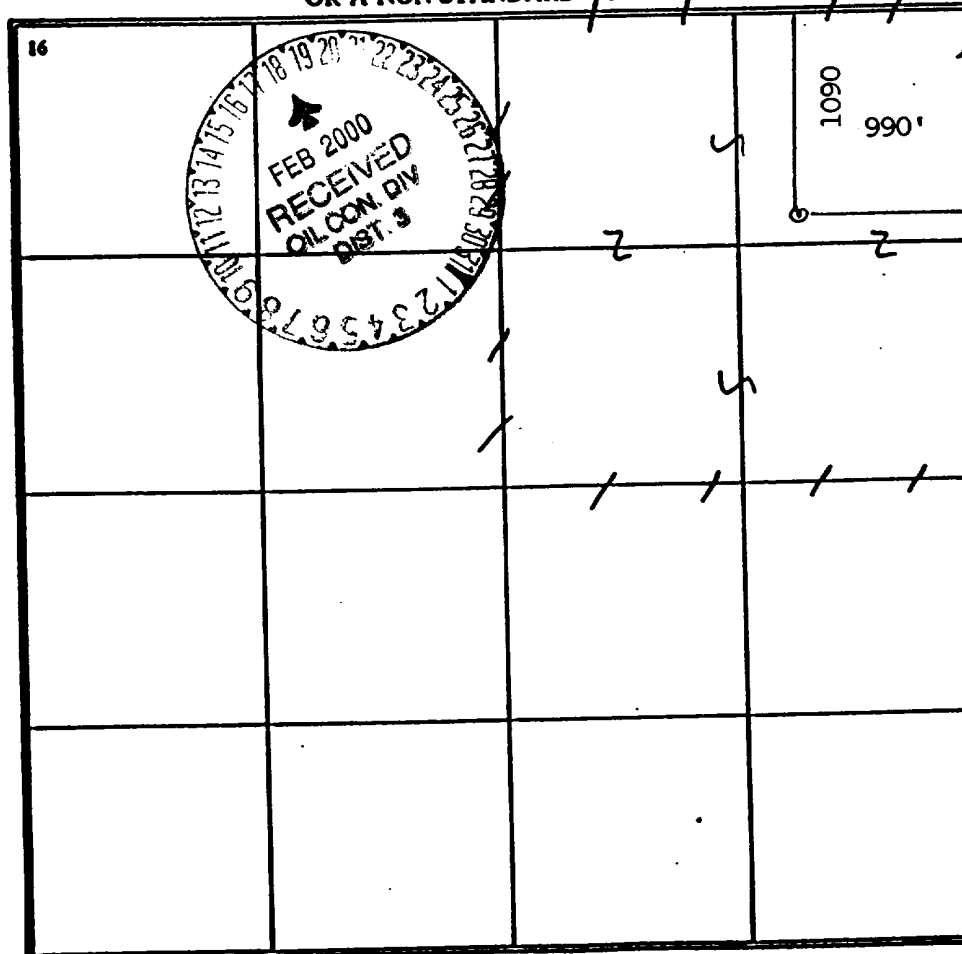
UL or lot no.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
A	22	29N	5W		1090	North	990	East	Rio Arriba

Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
A									

Dedicated Acres 160 ac	Joint or Infill J	Consolidation Code U	Order No. Downhole commingling application will be applied for.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



17 OPERATOR CERTIFICATION
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Patsy Clugston
Signature
Patsy Clugston
Printed Name
Regulatory Assistant
Title
June 14, 1999
Date

18 SURVEYOR CERTIFICATION

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 belief.

October 30, 1958
Date of Survey

Signature and Seal of Professional Surveyor:
see original Well location and acreage dedication Plat signed by David O. Vilner dated 9/28/59

Certificate Number

Well Location and Acreage Dedication Plat

Date **September 28, 1959**

Section A.

RECEIVED

BLM

Operator **El Paso Natural Gas Company**Lease **San Juan 29-5 Unit SF080069**Well No. **45-22 (MD)** Unit Letter **A**Township **29N**Range **5W**

NMPN

Located **1090**

Feet From

Section **22**
North **30** PM **4:30**

Foot from

East

Line

County **Rio Arriba**

G. L. Location

6775

Dedication Acreage

320 & 320

Acre

Name of Producing Formation **Mesa Verde & Dakota, NM**Pool **Blanco MV - Wildcat Dakota**

1. Is the Operator the only owner in the delineated acreage outlined on the plat below?

Yes ☐ No ☒2. If the answer to question one is "no", have the interests of all the owners been consolidated by agreement or otherwise? Yes ☒ No ☐ If answer is "yes", Type of Consolidation:**Unit Agreement.**

3. If the answer to question two is "no", list all the owners and their respective interests below:

Owner

Land Description

RECEIVED
BLM
99 JUN 14 PM 4:19
970 FARMINGTON, NM

Section B.

This is to certify that the information in Section A above is true and complete to the best of my knowledge and belief.

El Paso Natural Gas Company

(Operator)

Original Signed By: **D.H. Oheim**

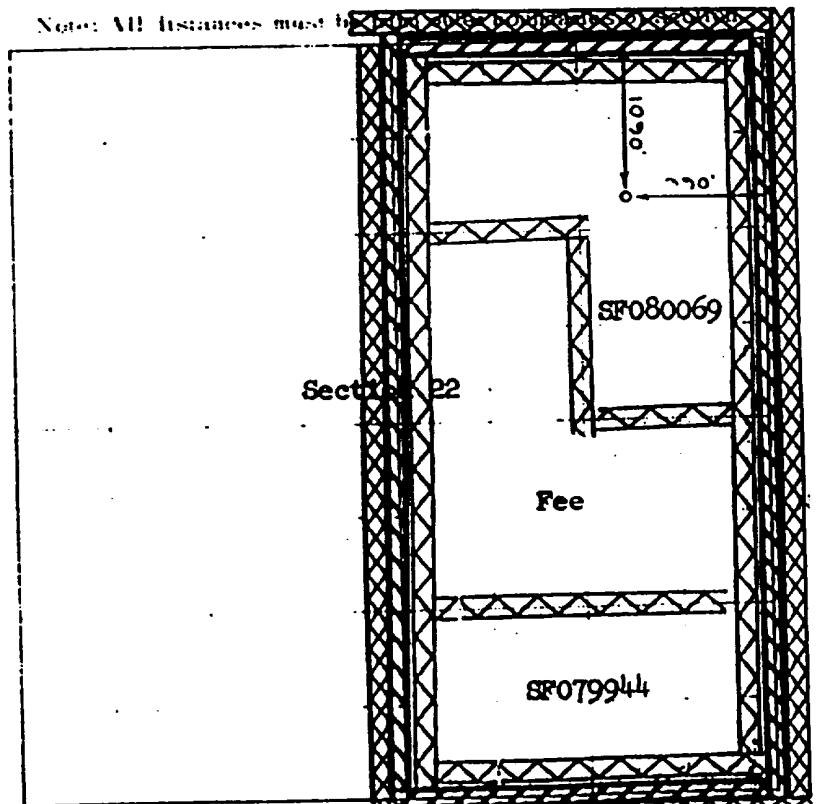
(Representative)

Box **997**

(Address)

Farmington, New Mexico

Note: All distances must be



0 100 200 300 400 500 600 700 800 900 1000

Scale 1 inch equals 1 mile

This is to certify that the above plat was prepared from field notes of actual survey made by me or under my supervision and that the same are true and correct to the best of my knowledge and belief.

Date Surveyed **October 30, 1958***David A. Kilmer*
State Surveyor and Engineer in Charge of Land Survey

(Seal)

Farmington, New Mexico

29-5 Unit #45 Lewis Shale (Meas Verde) Forecast

<i>Initial Production Rate</i>	=	200 MCFD
<i>Hyperbolic Exponent</i>	=	0.33
<i>Decline Rate</i>	=	10 %

	Month	Monthly MCF
2000	Feb	6,174
	Mar	5,925
	Apr	6,072
	May	6,021
	Jun	5,395
	Jul	5,926
	Aug	5,687
	Sep	5,829
	Oct	5,595
	Nov	5,735
	Dec	5,687
2001	Jan	5,460
	Feb	5,596
	Mar	5,372
	Apr	5,507
	May	5,462
	Jun	4,895
	Jul	5,378

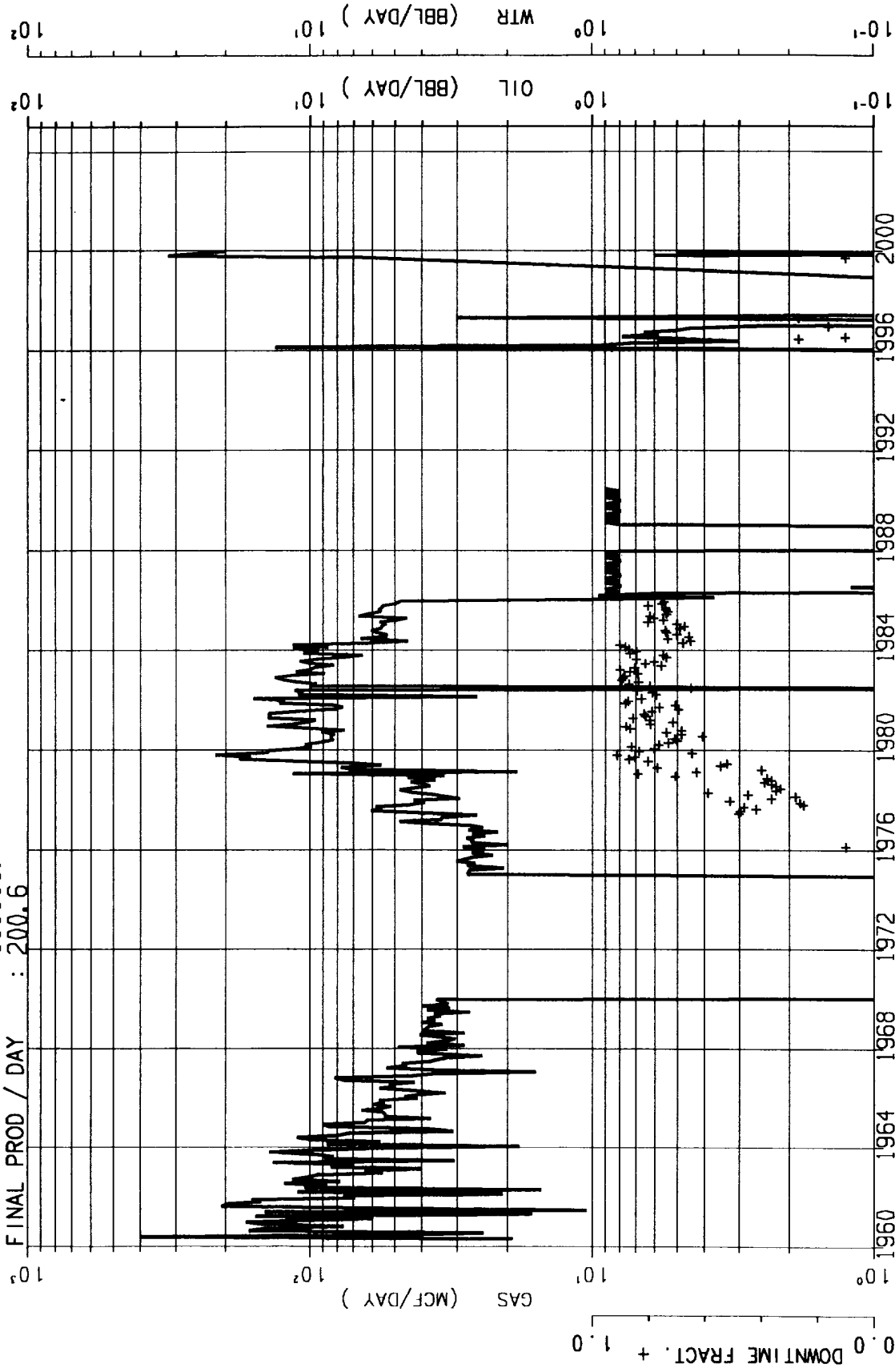
Use subtraction method for +/- 12 months based on this LS forecast.

4/60-12/99

INITIAL PROD / DAY : 19.2
REMAINING LIFE : 39.75

CUM PRODUCTION : 356336.
FINAL PROD / DAY : 200.6

ASSOC. Current Cums
356336. MCF GAS
34. BBL OIL
1074. BBL WTR



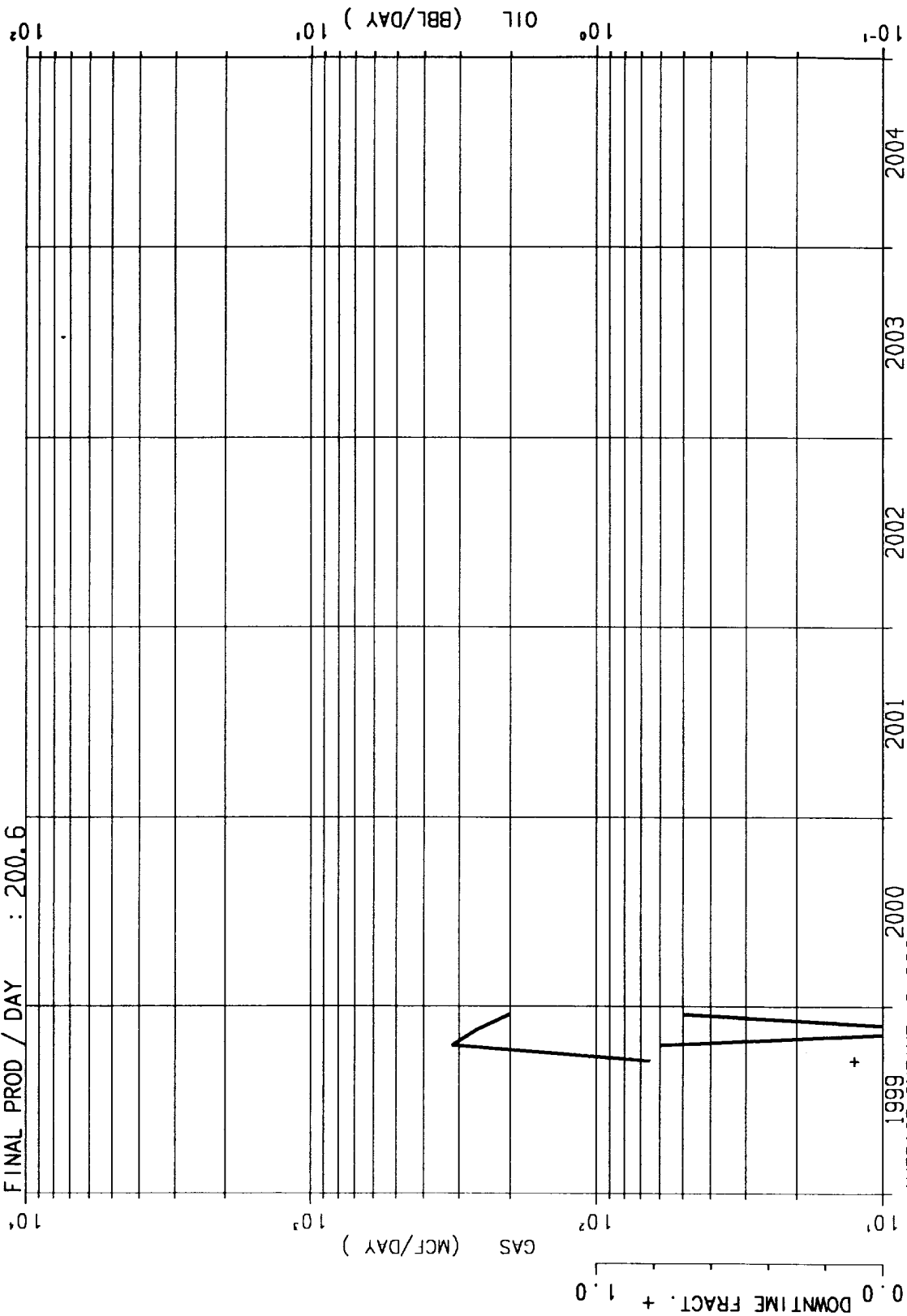
LEASE- 650111 : SAN JUAN 29-5 MESA VERDE
RESVR- 002 : BLANCO
WELL - 000045 CUM MCF =356516.

F016401
ZONE-650111002000045 F016401
API-30039075960000 THRU 99/12

9/99-12/99

ASSOC. Current Cums
25814. MCF GAS
34. BBL OIL

INITIAL PROD / DAY : 65.1
REMAINING LIFE : 0.33
CUM PRODUCTION : 25814.
FINAL PROD / DAY : 200.6



AVERAGE ONTIME = 0.992

LEASE- 650111 : SAN JUAN 29-5 MESA VERDE
RESVR- 002 : BLANCO MESAVERDE
WELL - 000045 CUM MCF = 356516.

F016401
ZONE-650111002000045 F016401
API-30039075960000 THRU 99/12

29-5 #45

DATE	MCF
12/1/99	3.879065
12/2/99	414.6071
12/3/99	27.87056
12/4/99	409.6721
12/5/99	34.31796
12/6/99	290.5909
12/7/99	274.5142
12/8/99	229.9215
12/9/99	202.0014
12/10/99	208.6758
12/11/99	216.6562
12/12/99	188.6617
12/13/99	229.4049
12/14/99	4.207569
12/15/99	56.84777
12/16/99	153.5101
12/17/99	210.2728
12/18/99	208.2498
12/19/99	227.8764
12/20/99	218.9084
12/21/99	219.9829
12/22/99	223.827
12/23/99	216.2548
12/24/99	207.682
12/25/99	219.6172
12/26/99	214.4545
12/27/99	205.8143
12/28/99	217.9405
12/29/99	269.9665
1/1/00	273.6745
1/2/00	274.1813
1/3/00	267.5344
1/4/00	268.4331
1/5/00	266.0611
1/6/00	261.9212
1/7/00	256.7694
1/8/00	265.646
1/9/00	266.4908
1/10/00	74.56277
1/11/00	269.1917
1/12/00	278.6158
1/13/00	288.3824
1/14/00	288.4003
1/15/00	288.4888
1/16/00	284.2938
1/17/00	285.8317
Average	223.1449

Production Allocation Methodology

◆ Adding New Zone to Existing Zone - Initially Subtraction Method followed by Fixed Allocation Method

- Subtraction Method (+/- 1st 12 months)
 - Forecast production rate by month for existing zone utilizing established decline curve for zone
 - Subtract forecasted rate from commingled rate to define new zone rate
 - Utilize subtraction method for +/- 12 months until new zone rate stabilizes, then utilize fixed allocation method with current rates
- Fixed Allocation Method (after Subtraction Method)
 - Utilize forecasted rate from established decline curve for lower zone
 - Calculate upper zone rate by subtracting lower zone rate from commingled rate
 - Lower zone allocation = $\frac{\text{Lower zone rate}}{\text{Commingled rate}}$
 - Upper zone allocation = $\frac{(\text{Commingled rate} - \text{Lower zone rate})}{\text{Commingled rate}}$