

DISTRICT I

P.O. Box 1980, Hobbs, NM 88241-1980

DISTRICT II

811 South First St., Artesia, NM 88210-2835

DISTRICT III

1000 Rio Grande Rd, Aztec, NM 87410-1693

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 3-12-96

APPROVAL PROCESS:

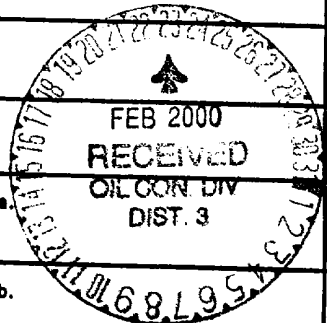
☒ Administrative ☐ Hearing

EXISTING WELLBORE

☒ YES ☐ NO

APPLICATION FOR DOWNHOLE COMMINGLING

Operator Phillips Petroleum Company Address 5525 Hwy. 64 Farmington, N.M. 87401Lease San Juan 29-6 Unit #87M Unit 0 Section 33, T29N, 6W Well No. Unit Ltr. - Sec - Twp - Rge County Rio ArribaOGRID NO. 017654 Property Code 009256 API NO. 30-039-26187 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	Blanco Mesaverde 72319		Basin Dakota 71599
2. Top and Bottom of Pay Section (Perforations)	4022-5710		7639-7807
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) 750 psi (est.) b. (Original) 1280 psi (est.)	 a. b.	a. 730 psig (24-hr. shut-in) b. 3130 psi (est.)
6. Oil Gravity (^o API) or Gas BTU Content	1200 Btu/scf.		1020 Btu/scf.
7. Producing or Shut-In?			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	Date: Rates:	Date: Rates:	Date: Rates:
• If Producing, give date and oil/gas/water rates of recent test (within 60 days)	Date: Estimated will Rates: be 500 mcfd	Date: Rates:	Date: 1/27/00 Rates: 107 mcfd 5 bwpd
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?
If not, have all working, overriding, and royalty interests been notified by certified mail?
Have all offset operators been given written notice of the proposed downhole commingling? ☐ Yes ☒ No ☐ Yes ☒ No11. 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 ☐ No13. 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 ☐ No15. NMOC Reference Cases for Rule 303(D) Exceptions: ORDER NO(S). R-11187

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 Mark Stodola TITLE Reservoir Engineer DATE 2/18/00TYPE OR PRINT NAME Mark Stodola TELEPHONE NO. (505) 599-3455



PHILLIPS PETROLEUM COMPANY

FARMINGTON, NEW MEXICO 87401
5525 HWY. 64 NBU 3004

February 21, 2000

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

Downhole Commingling Allocation Method
on the San Juan 29-6 Unit #87M

Dear Sirs:

Phillips is proposing to utilize the subtraction method on the subject well for approximately twelve months after actual commingling occurs. After the twelve month period, 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 considering that the Basin Dakota interval has been producing for months and it will take several months for the Blanco Mesaverde production to stabilize.

Dakota Forecast

March 2000	2,912	April 2000	2,990
May 2000	2,970	June 2000	2,855
July 2000	2,931	August 2000	2,818
September 2000	2,893	October 2000	2,874
November 2000	2,579	December 2000	2,838
January 2001	2,728	February 2001	2,801

For example, if the total volume for March 2000 were 18,412 mcf, then the Dakota would be allocated 2,912 mcf and the Mesaverde 15,500 mcf. And subsequently, the Dakota would be allocated $(2,912/18,412)$ or 15.82%, and Mesaverde would be allocated $(15,500/18,412)$ or 84.18%.

Sincerely,

PHILLIPS PETROLEUM COMPANY

Mark W. Stodola
Reservoir Engineer

MS/pc

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

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

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-102
Revised October 18, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

99 MAY 24 PM 1:10 ☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT, NM

* API Number		* Pool Code 71599	* Pool Name Basin Dakota	
* Property Code 009257	* Property Name SAN JUAN 29-6			* Well Number 87H
* OGRID No. 017654	* Operator Name PHILLIPS PETROLEUM COMPANY			* Elevation 6501'

10 Surface Location

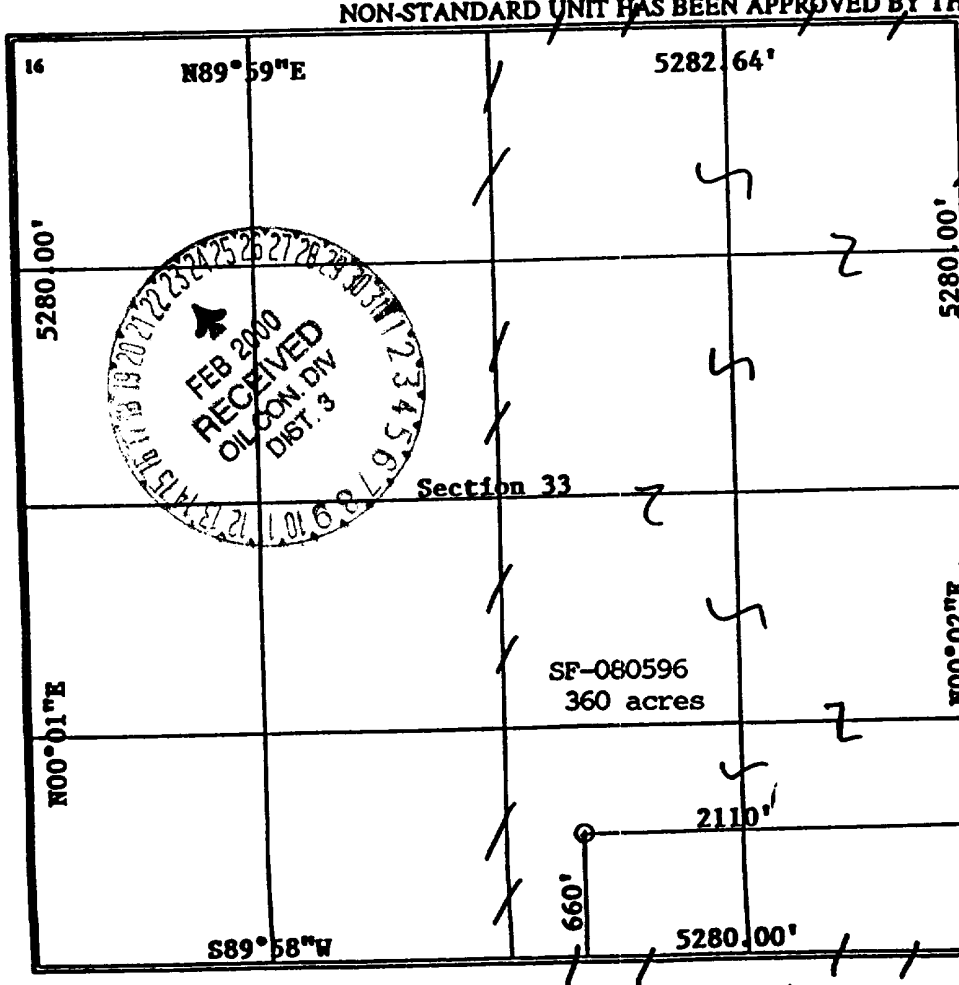
UL or lot no. 0	Section 33	Township 29N	Range 6W	Lot Idn	Feet from the 660'	North/South line SOUTH	Feet from the 2110'	East/West line EAST	County RIO ARriba
--------------------	---------------	-----------------	-------------	---------	-----------------------	---------------------------	------------------------	------------------------	----------------------

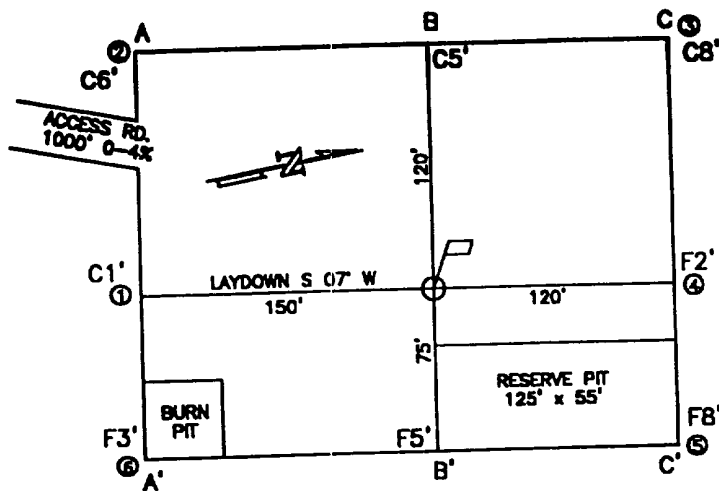
11 Bottom Hole Location If Different From Surface

UL or lot no. 0	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
--------------------	---------	----------	-------	---------	---------------	------------------	---------------	----------------	--------

* Dedicated Acres 320 E/2	* Joint or Infill I	* Consolidation Code U	* Order No. Unorthodox location & DMC applications have been submitted
------------------------------	------------------------	---------------------------	---

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 <i>Patsy Clugston</i> Signature Patsy Clugston Printed Name Regulatory Assistant Title May 20, 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. 03/23/99 Date of Survey Signature and Seal of Registered Surveyor: <i>Henry P. Broadhurst, Jr.</i> NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR 71593



ELEVATION A-A'

	C/L			
6521				
6511				
6501				
6491				
6481				

B-B'

	C/L			
6521				
6511				
6501				
6491				
6481				

C-C'

	C/L			
6521				
6511				
6501				
6491				
6481				

COMPANY: PHILLIPS PETROLEUM COMPANY

LEASE: SAN JUAN 29-6 UNIT No.87M

FOOTAGE: 660' FSL. 2110' FEL UNIT 0

SEC. 33 TWN. 29-N RNG. 06-W N.M.P.M.

COUNTY, RIO ARriba STATE, N.M.

ELEVATION: 6501

LATITUDE: 36-40-36

LONGITUDE: 107-27-59



PHILLIPS PETROLEUM COMPANY
FARMINGTON, NEW MEXICO

SURVEYED: 3/23/89

REV. DATE:

APP. BY H.B.

DRAWN BY: T.C.

DATE DRAWN: 3/30/89

FILE NAME: P007701

UNITED
FIELD SERVICES INC.

P.O. BOX 3851
FARMINGTON, NM 87489
OFFICE: (505)334-0408

PHILLIPS PETROLEUM COMPANY
SAN JUAN 29-6 UNIT NO.87M
660' FSL, 2110' FEL
NW/4 SEC. 33, T-29-N, R-06-W, N.M.P.M.,
RIO ARRIBA COUNTY, NEW MEXICO
GROUND LEVEL ELEVATION: 6501'

FOURMILE CANYON QUADRANGLE

PHILLIPS PETROLEUM COMPANY
5525 HWY 64 NBU 3004
FARMINGTON, NEW MEXICO 87401

DATE: FEBRUARY 9, 2000

WELL NAME: SAN JUAN 29-6 # 87M
FORMATION: DAKOTA

TYPE TEST: STATIC GRADIENT

COUNTY: RIO ARRIBA
STATE: NEW MEXICO

TOTAL DEPTH:
PERFS: MID PERF 7757'
TUBING: 2 3/8" 7615'
CASING SIZE:
PACKER:
OTHER: 1.81" FN @ 7584'
PRESSURED UP @ 07:30

CASING PRESSURE: 650
TUBING PRESSURE: 620
OIL LEVEL:
WATER LEVEL:
TEMPERATURE:
ELEMENT NO. 86484
ELEMENT RANGE 0 TO 3000

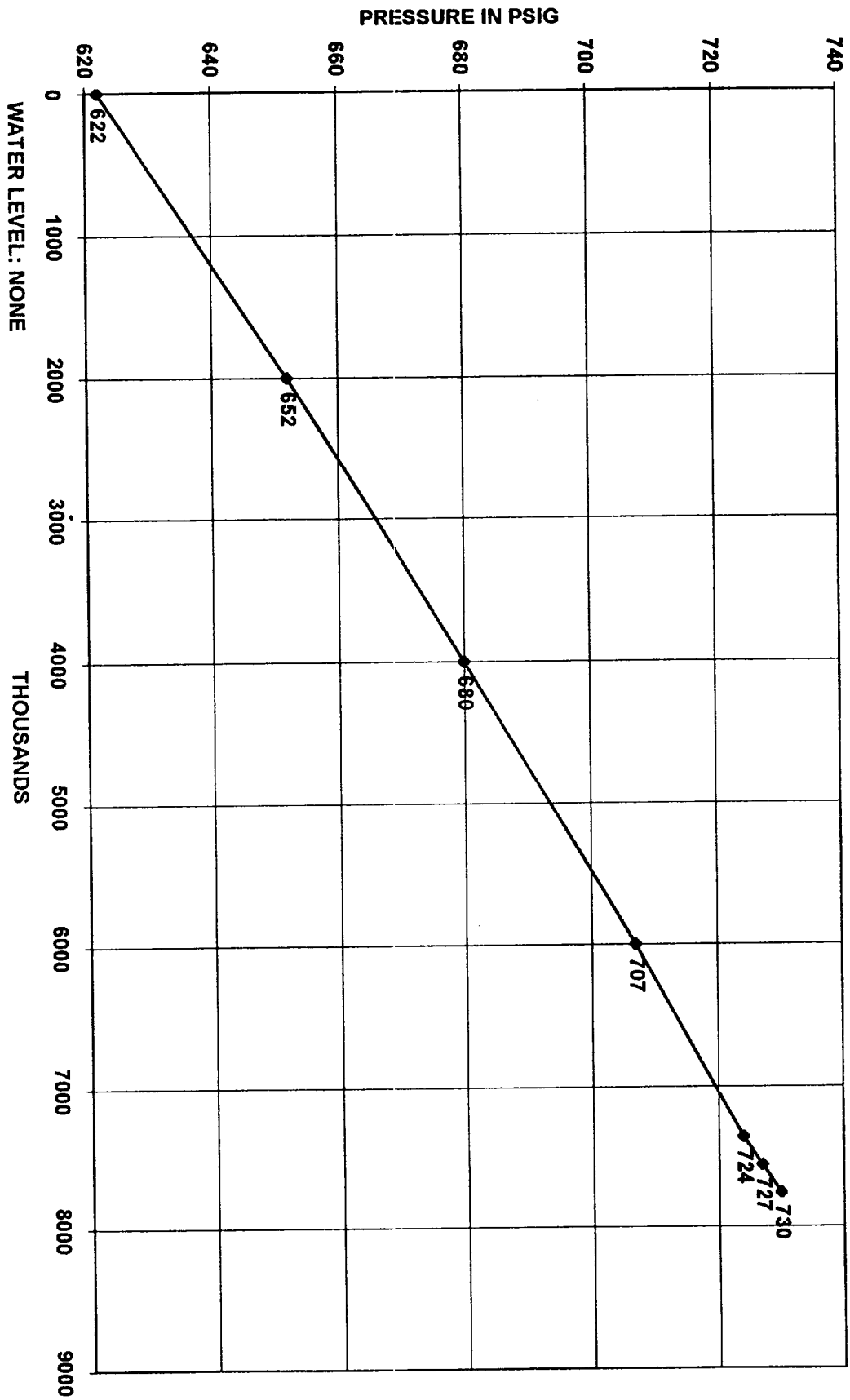
WELL STATUS: SHUT IN

DEPTH IN FEET	PRESSURE PSIG	GRADIENT PSI/FOOT
0	622	
2000	652	0.015
4000	680	0.014
6000	707	0.014
7357	724	0.012
7557	727	0.015
7757	730	0.015

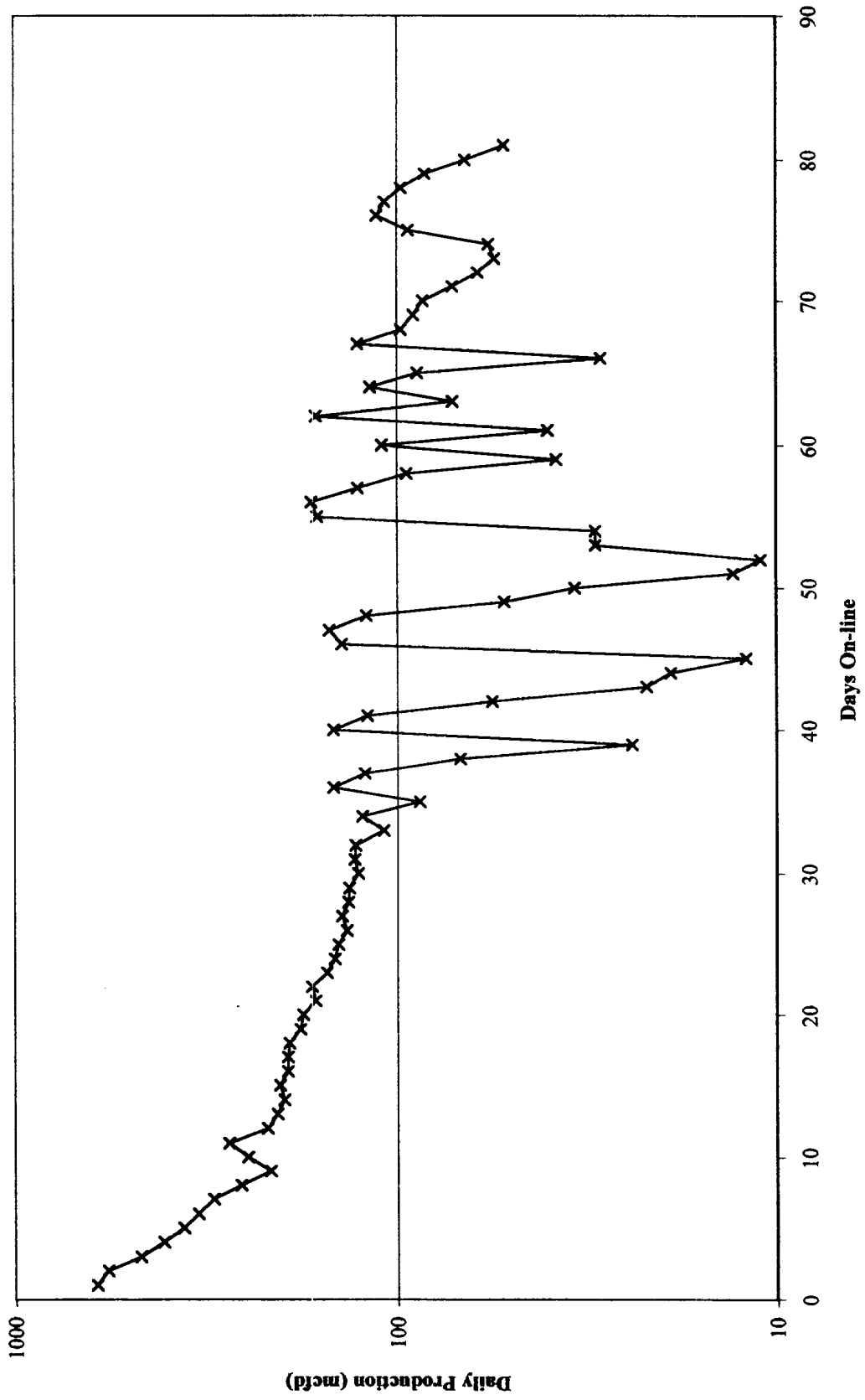
TD @ 7820'

H & H WIRELINE SERVICE INC.
P. O. BOX 899
FLORA VISTA, NEW MEXICO 87415
OPERATOR: CHARLES HUGHES
UNIT NO. T-11

PHILLIPS PETROLEUM: SAN JUAN 29-6 # 87M
DATE: FEBRUARY 9, 2000



San Juan 29-6 Unit #87M Dakota - Daily Rate vs. Days On-line



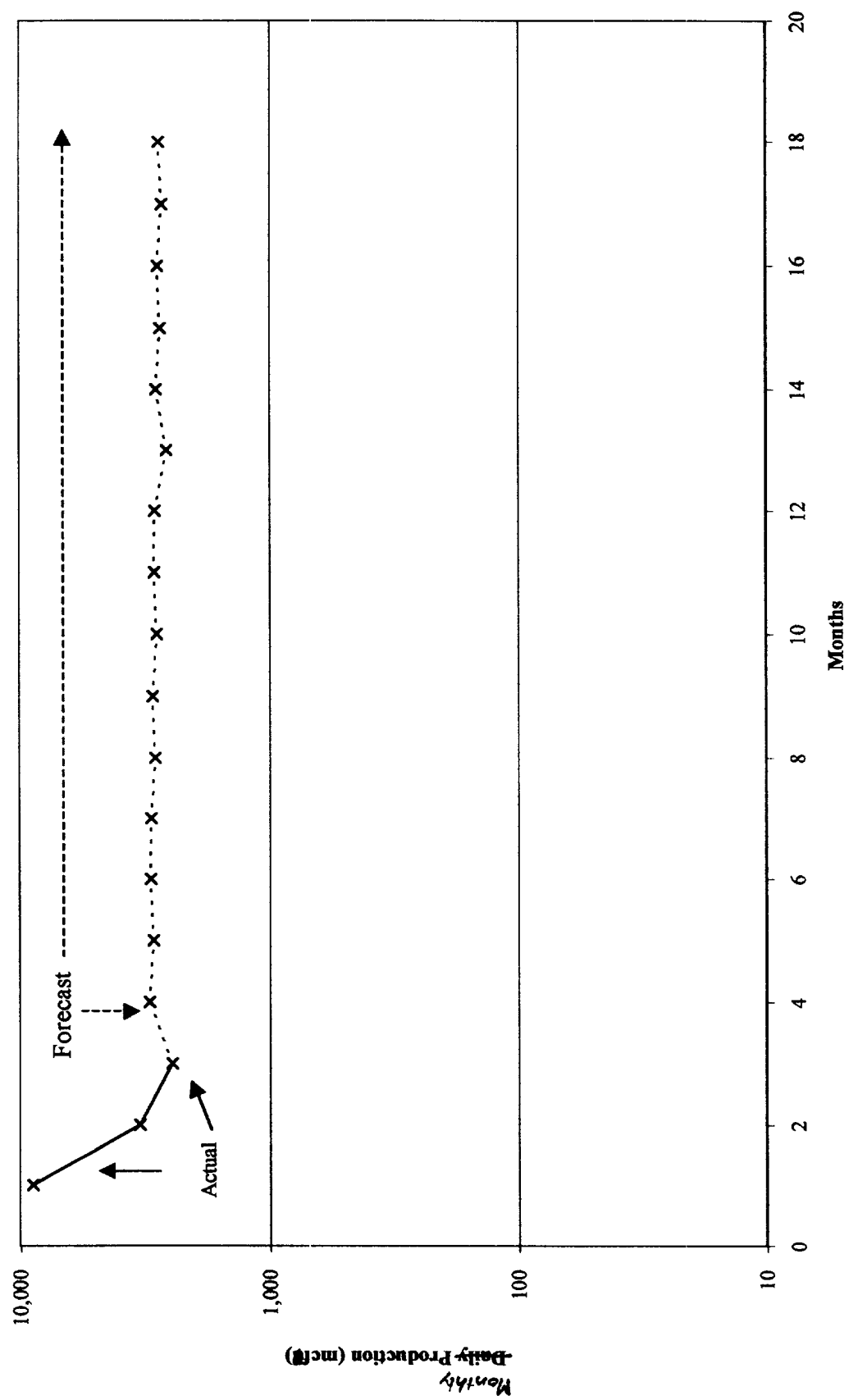
29-6 Unit #87M Dakota Forecast

<i>Initial Production Rate</i>	=	100 MCFD
<i>Hyperbolic Exponent</i>	=	0.33
<i>Decline Rate</i>	=	8 %

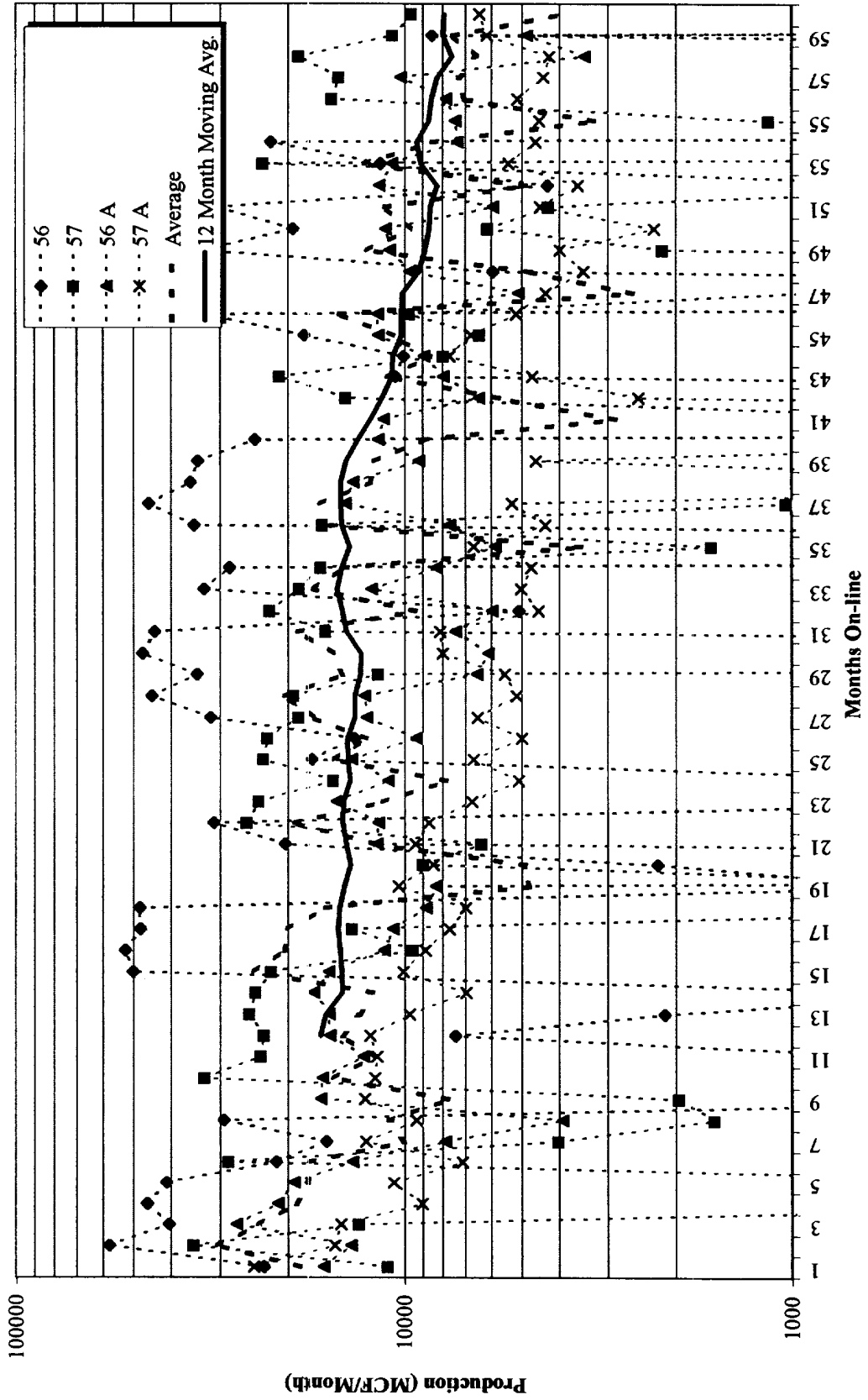
	Month	Monthly MCF	
1999	Nov	8,877	actual
	Dec	3,305	actual
2000	Jan	2,457	actual
	Feb	3,029	
	Mar	2,912	
	Apr	2,990	
	May	2,970	
	Jun	2,855	
	Jul	2,931	
	Aug	2,818	
	Sep	2,893	
	Oct	2,874	
	Nov	2,579	
	Dec	2,838	
2001	Jan	2,728	
	Feb	2,801	
	Mar	2,693	
	Apr	2,765	

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

San Juan 29-6 Unit #87M Dakota - Monthly Production and Forecast



San Juan 29-6 Unit #87M Area Mesaverde Production
First Five Years



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 = $\frac{(\text{Commingled rate} - \text{Lower zone rate})}{\text{Commingled rate}}$