

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 87410-1693

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

2040 S. Pacheco
Santa Fe, New Mexico 87505-6429Form C-107-A
New 3-12-96

APPROVAL PROCESS:

☒ Administrative ☐ Hearing

EXISTING WELLBORE

☒ YES ☐ NO

APPLICATION FOR DOWNHOLE COMMINGLING

Phillips Petroleum Company 5525 Hwy. 64, Farmington, NM 87401
Operator Address
San Juan 30-5 Unit #70 A, Sec. 9, T30N, R5W, Rio Arriba
Lease Well No. Unit Ltr. - Sec - Twp - Rge County
OGRID NO. 017654 Property Code 009258 API NO. 30-039-22462 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	72319 Blanco Mesaverde		71599 Basin Dakota
2. Top and Bottom of Pay Section (Perforations)	4100' - 5850'		7764' - 7790'
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) 1030 psi (est.) b. (Original) 1294 pis (est.)	a. b.	a. 24 hr. SI 889 psig b. 3412 (est.)
6. Oil Gravity ($^{\circ}$ API) or Gas BTU Content	1050 btu/ft ³ (est)		985 btu/ft ³
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: Estimate Rates: 400 mcfd 0 bopd	Date: Rates:	Date: 7/29/98 Rates: 101 mcfd 0 bopd
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 (see attachment)
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-10771
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 Engr. DATE 8-14-98TYPE OR PRINT NAME Mark Stodola TELEPHONE NO. (505) 599-3455

District I
PO Box 1980, Hobbs, NM 88241-1980
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811 South First, Artesia, NM 88210
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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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-039-22462	² Pool Code 72319	³ Pool Name Blanco Mesaverde
⁴ Property Code 009258	⁴ Property Name San Juan 30-5 Unit	⁴ Well Number #70
¹ OGRID No. 017654	¹ Operator Name Phillips Petroleum Company	¹ Elevation 6367

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	9	30N	5W		790	North	790	East	Rio Arriba

¹¹ Bottom Hole Location If Different From Surface

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

¹² Dedicated Acres 320 ac	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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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

<p>16</p>	<p>¹⁷ OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief</p> <p><i>Patsy Clugston</i> Signature Patsy Clugston Printed Name Regulatory Assistant Title 8-14-98 Date</p>	
	<p>¹⁸ SURVEYOR CERTIFICATION</p> <p>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.</p> <p>Date of Survey Signature and Seal of Professional Surveyer: See original dated 4/23/80 signed by Fred B. Kerr, Jr. for 30-5 #70 Dakota Certificate Number</p>	

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

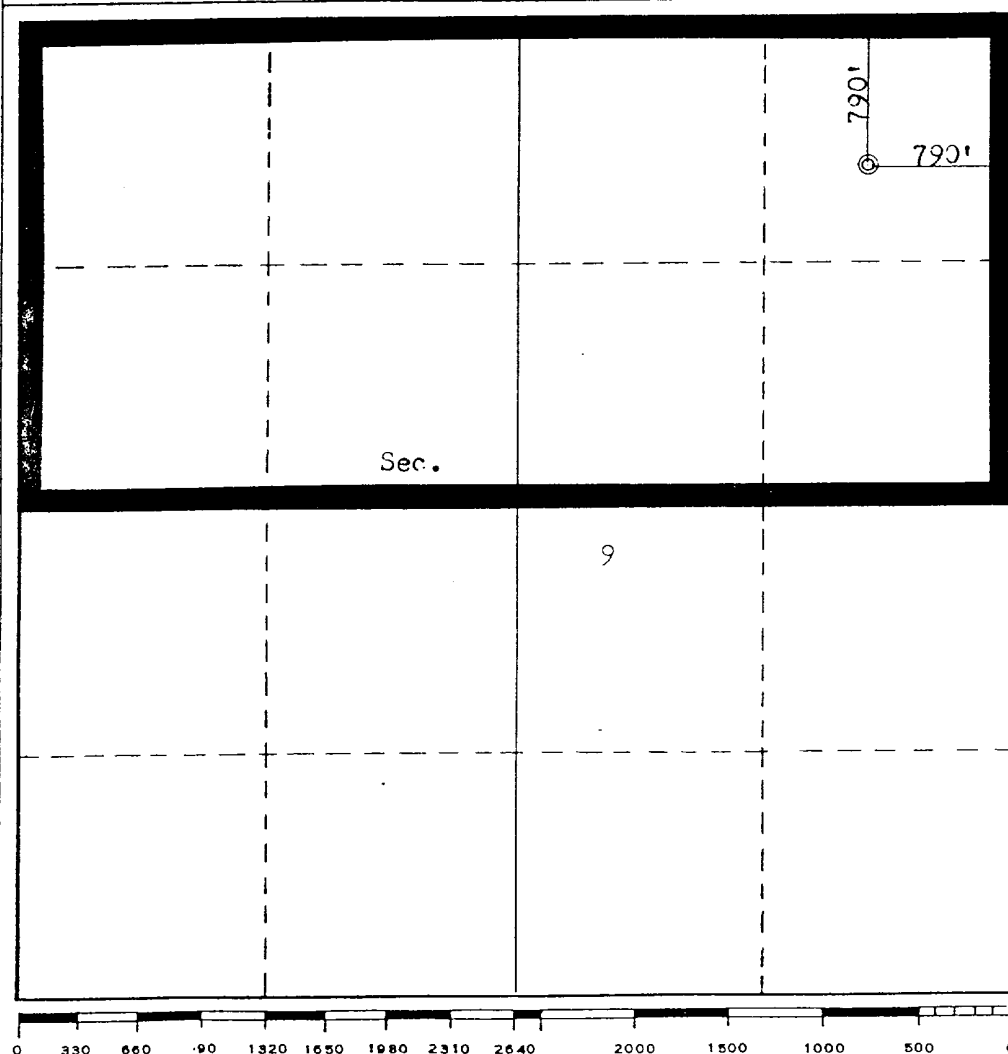
Operator NORTHWEST PIPELINE CORPORATION			Lease SAN JUAN 30-5 UNIT		Well No. 70
Unit Letter A	Section 9	Township 30N	Range 5W	County Rio Arriba	
Actual Footage Location of Well: 790 feet from the North line and 790 feet from the East line					
Ground Level Elev. 6367	Producing Formation Dakota		Pool Basin Dakota		Dedicated Acreage: 320 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.

Paul C. Thompson
Name

Paul C. Thompson

Position

Drilling Engineer

Company

Northwest Pipeline Corp.

Date

April 29, 1980

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

April 23, 1980

Registered Professional Engineer
and/or Land Surveyor

Fred B. Kerr Jr.
Fred B. Kerr Jr.

Certificate No.

3950



PHILLIPS PETROLEUM COMPANY

FARMINGTON, NEW MEXICO 87401
5525 HWY. 64 NBU 3004

August 14, 1998

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

Downhole Commingling Allocation Method
on the San Juan 30-5 Unit #70

Dear Sirs:

Phillips is proposing to utilize the subtraction method on the subject well for approximately six months after actual commingling occurs. After the six 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 Dakota interval has been producing for several months and that the production will not be stabilized on the Mesaverde for several months.

Dakota Production Forecast

September 1998	2,390	October 1998	2,459
November 1998	2,448	December 1998	2,438
January 1999	2,428	February 1999	2,417
March 1999	2,407	April 1999	2,397
May 1999	2,386	June 1999	2,376
July 1999	2,366	August 1999	2,356

For example, if the total volume for December 1998 were 6,520 mcf, then the Dakota would be allocated 2,438 mcf and the Mesaverde 4,082 mcf. And subsequently, the Dakota would be allocated $(2,438/6,520)$ or 37.39%, and Mesaverde would be allocated $(4,082/6,520)$ or 62.61%.

Sincerely,

PHILLIPS PETROLEUM COMPANY

Mark W. Stodola
Reservoir Engineer

MS/pc

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

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

DATE: AUGUST 7, 1998

WELL NAME: SAN JUAN 30-5 # 70
FORMATION: DAKOTA

TYPE TEST: STATIC GRADIENT

COUNTY: RIO ARRIBA
STATE: NEW MEXICO

ELEVATION: GL.
TOTAL DEPTH: PBTD 7785'
PERFORATIONS: 7764' TO 7790'
TUBING SIZE: 3 1/2 TO 7741'
CASING SIZE: 4 1/2 TO 7850'
PACKER:
OTHER:

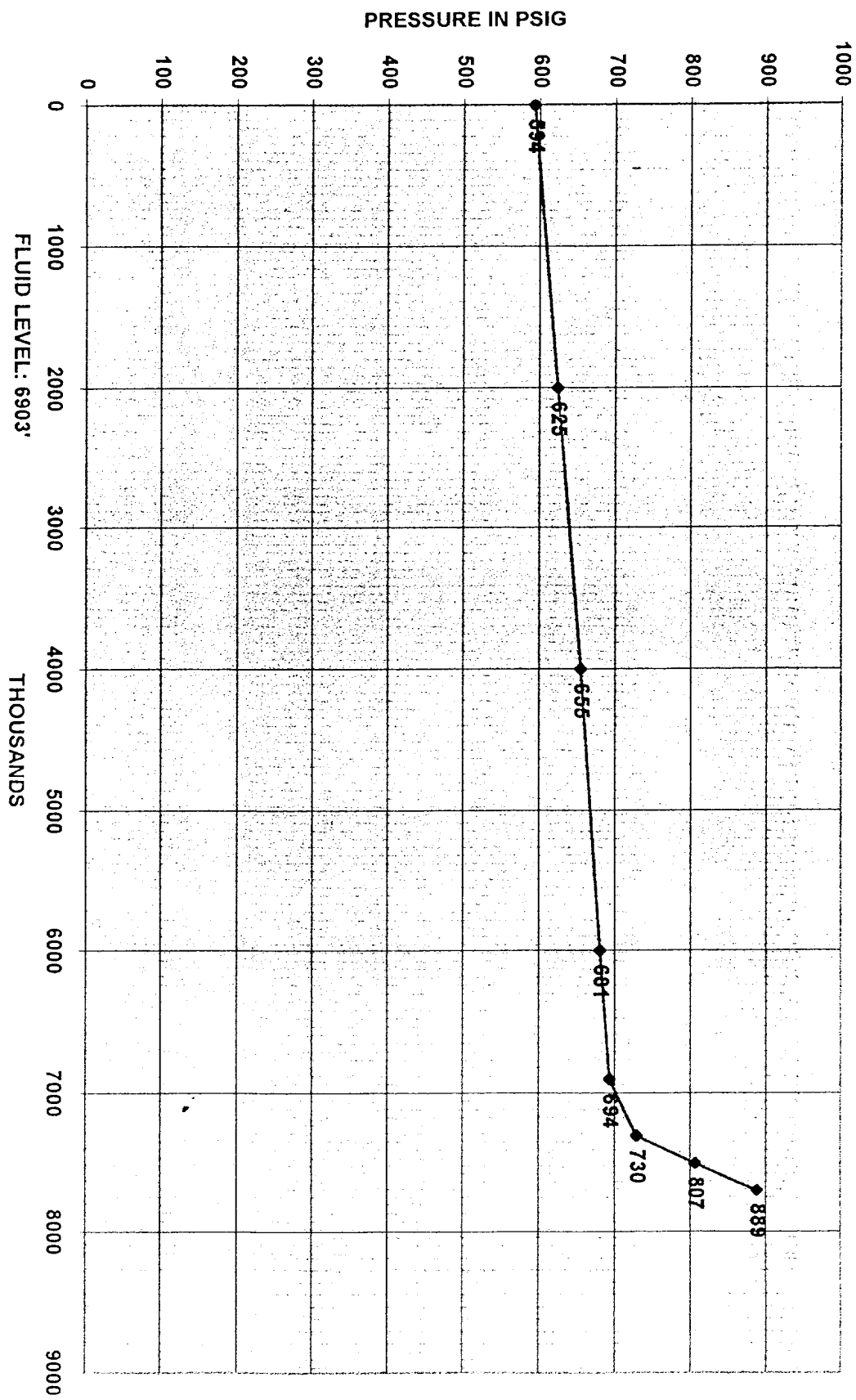
CASING PRESSURE: 789
TUBING PRESSURE: 601
OIL LEVEL:
WATER LEVEL: 6903'
TEMPERATURE:
ANERADA ELEMENT # 87977
RANGE: 0 TO 2500
WELL STATUS: SHUT IN

INDIVIDUAL WELL DATA SHEET

<u>DEPTH IN FEET</u>	<u>PRESSURE PSIG</u>	<u>GRADIENT PSI/FOOT</u>
0	594	0
2000	625	0.016
4000	655	0.015
6000	681	0.013
7300	730	0.038
7500	807	0.385
7700	889	0.41

H & H WIRELINE SERVICE INC.
P. O. BOX 899
FLORA VISTA, N. MEX. 87415
OPERATOR: C. HUGHES
UNIT NO. T-11

PHILLIPS PETROLEUM SAN JUAN 30-5 # 70
DATE: AUGUST 7, 1998



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MEP81-01          PARPI - WELLZONE PRODUCTION BROWSE          Date: 8/14/98
                   DAILY AVERAGE BY MONTH                    User: MWSTODO
Wellzone L9891 01 Yr: 1997 Mth: 07  Property: 650262 SAN JUAN 30-5 DAKOTA UNIT
Screen: 1 (1-Prod, 2-Inj, 3-Both)    Well No: 000070
Type:   D (T-Total, D-Daily Avg)      Field: 042233 BASIN
Period: M (M-Mnthly, Y-Yrly, C-Cum)  Resvr: 20076 DAKOTA

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ADJ		PRODUCED			DAYS		WELL			
FLG	DATE	OIL (BBL)	GAS (MCF)	WATER (BBL)	PROD	OP	ST	CL	TY	
	1997-07	0.00	71	0	31.00	31	11	03	2	
	1997-08	0.00	64	0	31.00	31	11	03	2	
	1997-09	0.00	80	0	26.00	26	11	03	2	
*	1997-10	0.00	91	0	31.00	31	11	03	2	
*	1997-11	0.00	88	0	30.00	30	11	03	2	
	1997-12	0.00	107	0	31.00	31	11	03	2	
*	1998-01	0.00	76	0	31.00	31	11	03	2	
	1998-02	0.00	87	0	28.00	28	11	03	2	
*	1998-03	0.00	91	0	24.00	24	11	03	2	
	1998-04	0.00	81	0	23.00	23	11	03	2	
	1998-05	0.00	90	0	31.00	31	11	03	2	
	1998-06	0.00	72	0	30.00	30	11	03	2	

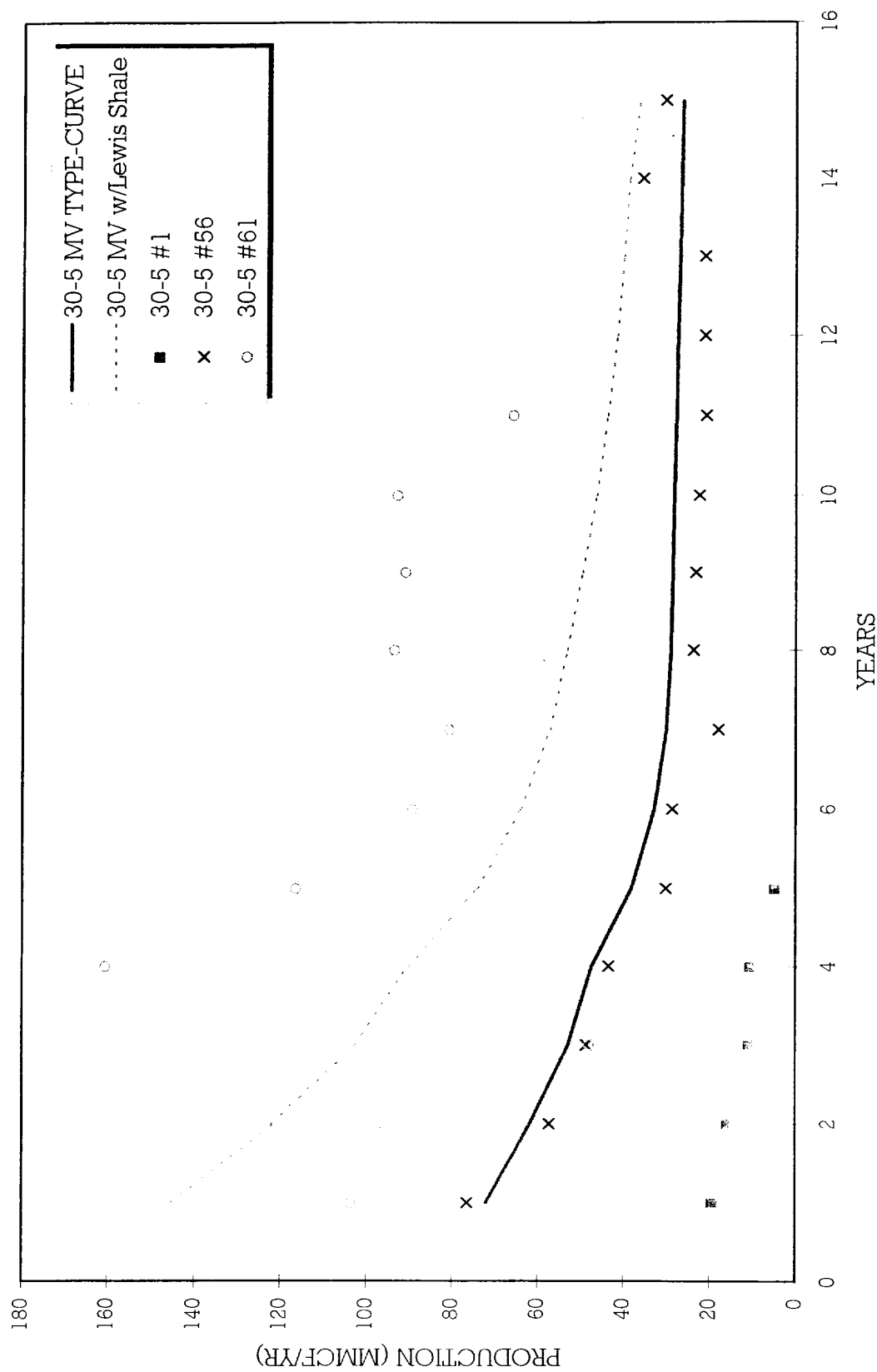
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Transfer-> PF7=Backward PF8=Forward PF10=GRAND MENU PF12=LOG GRAPH

Dakota Production Forecast for 30-5 Unit
Well #70

Year	Month	Gas (MCF)
Sept. 98	1	2,390
Oct	2	2,459
Nov	3	2,448
Dec	4	2,438
1999	5	2,428
Feb	6	2,417
Mar	7	2,407
Apr	8	2,397
May	9	2,386
Jun	10	2,376
Jul	11	2,366
Aug	12	2,356
Sep	13	2,346
Oct	14	2,336
Nov	15	2,326
Dec	16	2,316
Jan	17	2,306
Feb	18	2,074

Initial Rate = 80 MCF/D

30-5 UNIT MESAVERDE



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

Attachment

OCD Form C-107A (3/12/96)

Item No. 12 - additional explanation:

Based on water analysis from the Mesaverde and Dakota zones and discussions with the chemical treating/analysis company the water from these two zones are compatible. Lab analysis of the individual waters from both the Mesaverde and Dakota formations resulted in positive scaling indices for barium sulfate. There was a slight increase in the barium sulfate scaling index of the combined waters relative to the scaling index of the individual waters.

None of the waters, combined or individual, had meaningful scaling tendencies and combined with the fact that typical water production from either of these zones in San Juan 30-5 are 0-1 BWPD and no barium sulfate scale has been detected to date, no negative impacts to the formations are anticipated.