

DHC 4/16/97

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 87505-6429

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, NM 87401  
San Juan 30-5 Unit #53E I, Sec. 16-T30N, R5W, Rio Arriba  
Lease Well No. Unit Ltr. - Sec - Twp - Rge County  
OGRID NO. 017654 Property Code 009258 API NO. 30-039-25155 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)	4206' - 5986'		7790' - 7885'
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 psi (est.)	a.  b.	a. 803 psig (24 hr SI) b. 3412 psi (est.)
6. Oil Gravity (°API) or Gas BTU Content	1030 BTU/cu.ft.		1000 BTU/cu. ft.
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: 420 mcf/d	Date: Rates:	Date: 2/26/97 Rates: 515 mcf/d 1 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? ☒ 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 attached)
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 Sean C Helton TITLE Staff Reservoir Engineer DATE 3-25-97

TYPE OR PRINT NAME Sean C. Helton TELEPHONE NO. ( 505 ) 599-3455

**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**

**OIL CONSERVATION DIVISION**  
2040 South Pacheco  
Santa Fe, NM 87505

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

☐ AMENDED REPORT

# WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number		2 Pool Code		3 Pool Name	
30-039-25155		72319		Blanco Mesaverde	
4 Property Code		5 Property Name			6 Well Number
009258		San Juan 30-5 Unit			#53E
7 OGRID No.		8 Operator Name			9 Elevation
017654		Phillips Petroleum Company			6438

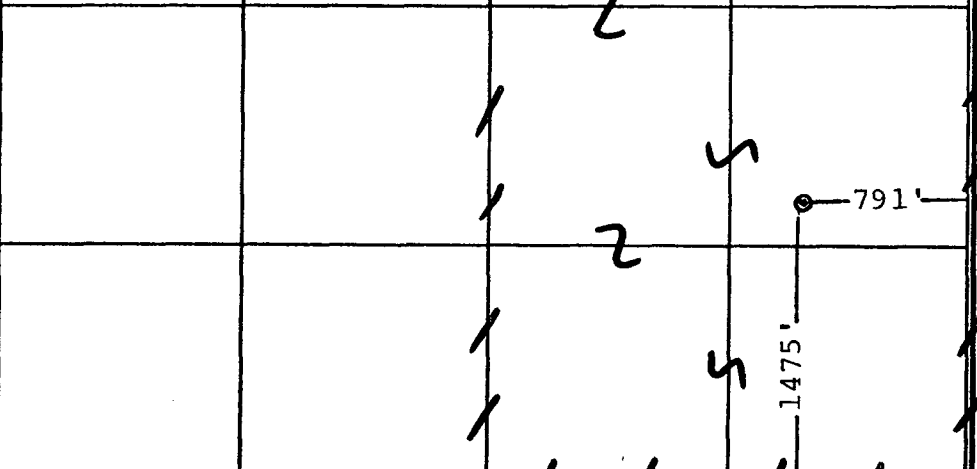
### <sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	16	30N	5W		1475	South	791	East	Rio Arriba

## 11 Bottom Hole Location If Different From Surface

UL or lot no. I	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
13 Dedicated Acres 320	13 Joint or Infill Y	14 Consolidation Code U		15 Order No.					

**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**

16		<b>17 OPERATOR CERTIFICATION</b> I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.  <u>Sean C Helton</u> Signature <u>Sean C. Helton</u> Printed Name <u>Staff Reservoir Engineer</u> Title <u>March 25, 1997</u> Date
SECTION 16		
		<b>18 SURVEYOR CERTIFICATION</b> 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.  Date of Survey  Signature and Seal of Professional Surveyor:  <u>See Dakota C-102 dated 11-11-91</u>  Certificate Number

Submit to Appropriate  
District Office  
State Lease - 4 copies  
Fee Lease - 3 copies

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-102  
Revised 1-1-89

OIL CONSERVATION DIVISION

P.O. Box 2088  
Santa Fe, New Mexico 87504-2088

DISTRICT I

P.O. Box 1980, Hobbs, NM 88240

DISTRICT II

P.O. Drawer DD, Artesia, NM 88210

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator <b>PHILLIPS PETROLEUM</b>			Lease <b>SAN JUAN 30-5 UNIT</b>		Well No. <b>53E</b>
Unit Letter <b>I</b>	Section <b>16</b>	Township <b>T.30 N.</b>	Range <b>R.5 W.</b>	County <b>RIO ARRIBA</b>	<b>NMPM</b>
Actual Footage Location of Well: <b>1475</b> feet from the <b>SOUTH</b> line and <b>791</b> feet from the <b>EAST</b> line					
Ground level Elev. <b>6438</b>	Producing Formation <b>Dakota</b>		Pool <b>Basin Dakota</b>		Dedicated Acreage: <b>320</b> Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.

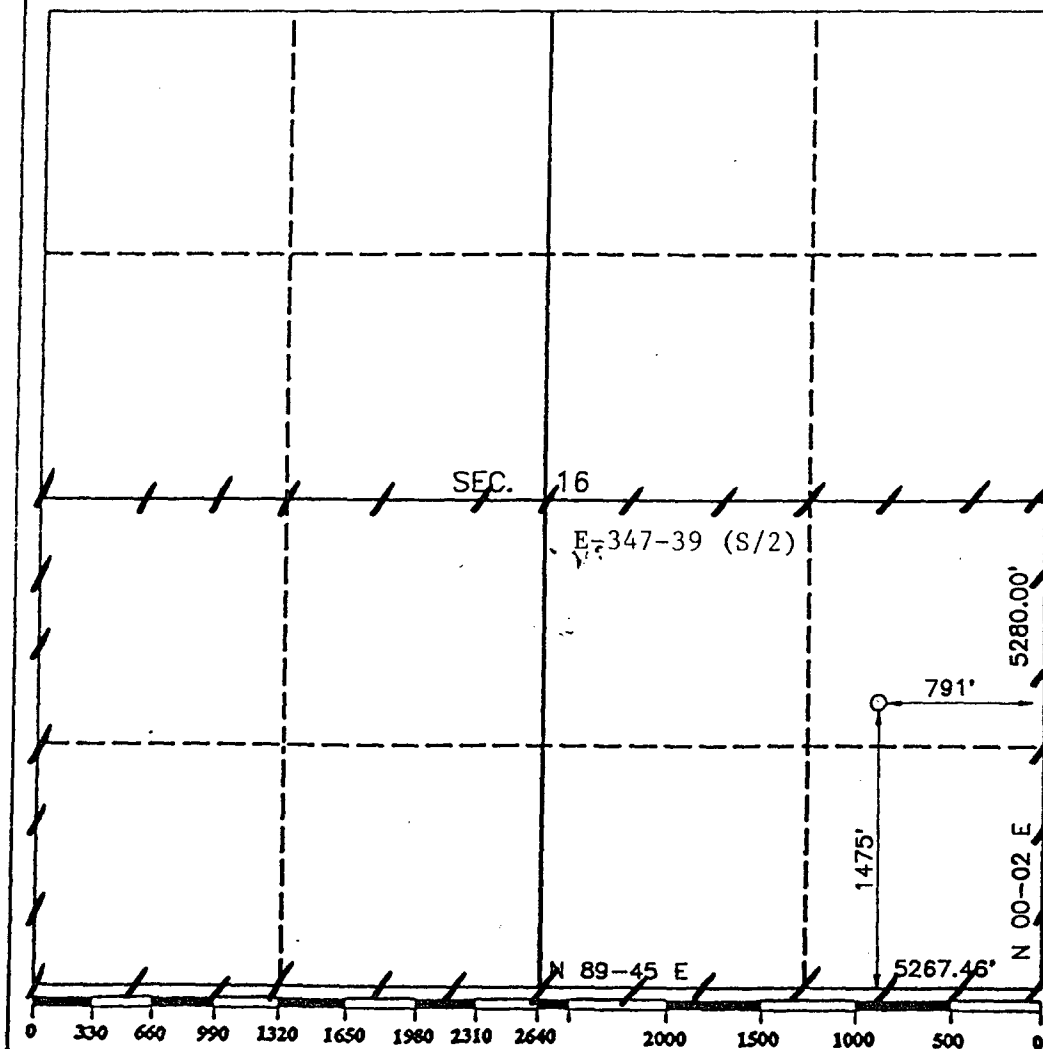
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest 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 interest, has been approved by the Division.



OPERATOR CERTIFICATION

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

Signature

*L. E. Robinson*

Printed Name

L. E. Robinson

Position

Sr. Drlg. & Prod. Engr.

Company

Phillips Petroleum Company

Date

January 27, 1992

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 knowledge and belief.

Date Surveyed

NOVEMBER 11, 1991

Signature & Seal of  
Professional Surveyor

*ROY A. RUSH*  
ROY A. RUSH  
NEW MEXICO

Certificate No.

8804  
8894

REGISTERED PROFESSIONAL LAND SURVEYOR

**SAN JUAN 30-5 UNIT #53E DAKOTA**

	<b><u>MONTH</u></b>	<b><u>MONTHLY FORECAST (MCF)</u></b>
	Mar-97	18,573
1	Apr-97	18,371
2	May-97	18,172
3	Jun-97	17,976
4	Jul-97	17,783
5	Aug-97	17,593
6	Sep-97	17,406
7	Oct-97	17,222
8	Nov-97	17,041
9	Dec-97	16,863
10	Jan-98	16,687
11	Feb-98	16,514
12	Mar-98	16,343
13	Apr-98	16,175
14	May-98	16,009
15	Jun-98	15,846
16	Jul-98	15,686
17	Aug-98	15,527
18	Sep-98	15,371

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

DATE: MARCH 05, 1997

WELL NAME: SAN JUAN 30-5 # 53E  
FORMATION: DAKOTA

TYPE TEST: STATIC GRADIENT

COUNTY: RIO ARRIBA  
STATE: NEW MEXICO

ELEVATION: GL  
TOTAL DEPTH: 7893' PBD  
PERFORATIONS: 7790' TO 7885'  
TUBING SIZE: 2-3/8" TO 7712'  
CASING SIZE: TO  
PACKER:  
OTHER: SEAT NIPPLE @ 7679'

CASING PRESSURE: 675  
TUBING PRESSURE: 675  
OIL LEVEL:  
WATER LEVEL:  
TEMPERATURE:  
AMERADA ELEMENT NUMBER: 86184  
RANGE: 0-3500  
WELL STATUS: SHUT IN  
24 HOURS

INDIVIDUAL WELL DATA SHEET

=====

STATIC GRADIENT TRAVERSE

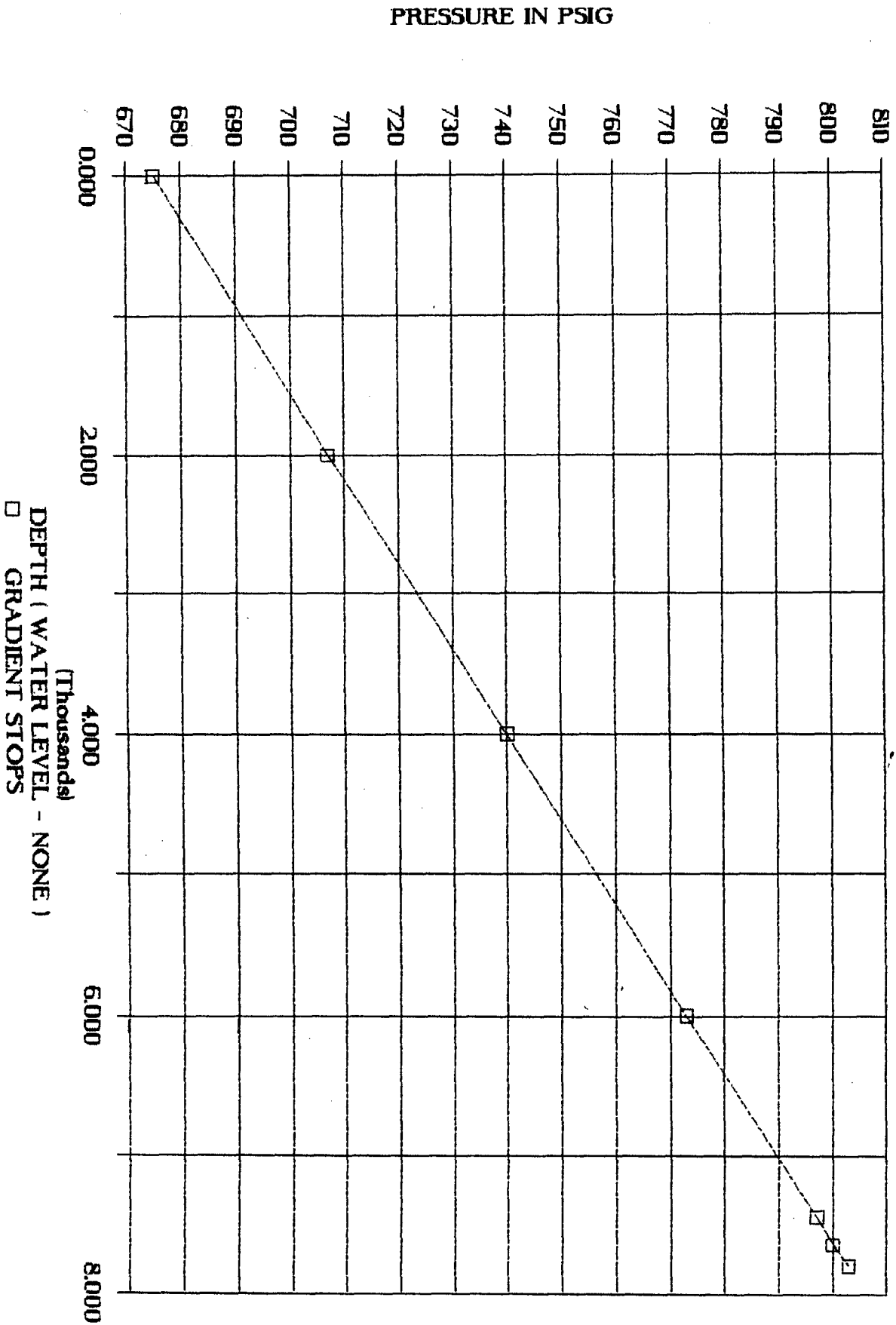
DEPTH IN FEET	PRESSURE PSIG	GRADIENT PSI/FOOT
0	675	
2000	707	0.016
4000	740	0.016
6000	773	0.016
7438	797	0.016
7638	800	0.015
7790	803	0.019

TD @ 7800. NO CHANGE IN PRESSURE.

H & H WIRELINE SERVICE INC.  
P. O. BOX 899  
FLORA VISTA, N. MEX. 87415  
OPERATOR: CHARLES HUGHES  
UNIT NO. T-10

# PHILLIPS PETROLEUM SAN JUAN 30-5 #53E

DATE: 03-05-97 STATIC GRADIENT



MEP81-01

## PARPI - WELLZONE PRODUCTION BROWSE

Date: 3/06/97

## DAILY AVERAGE BY MONTH

User: #60X

Wellzone F0606 01 Yr: 1996 Mth: 02 Property: 650402 SAN JUAN 30-5 DAKOTA UNIT-  
 Screen: 1 (1-Prod, 2-Inj, 3-Both) Well No: 000053E  
 Type: D (T-Total, D-Daily Avg) Field: 042233 BASIN  
 Period: M (M-Mnthly, Y-Yrly, C-Cum) Resvr: 20079 DAKOTA NQ

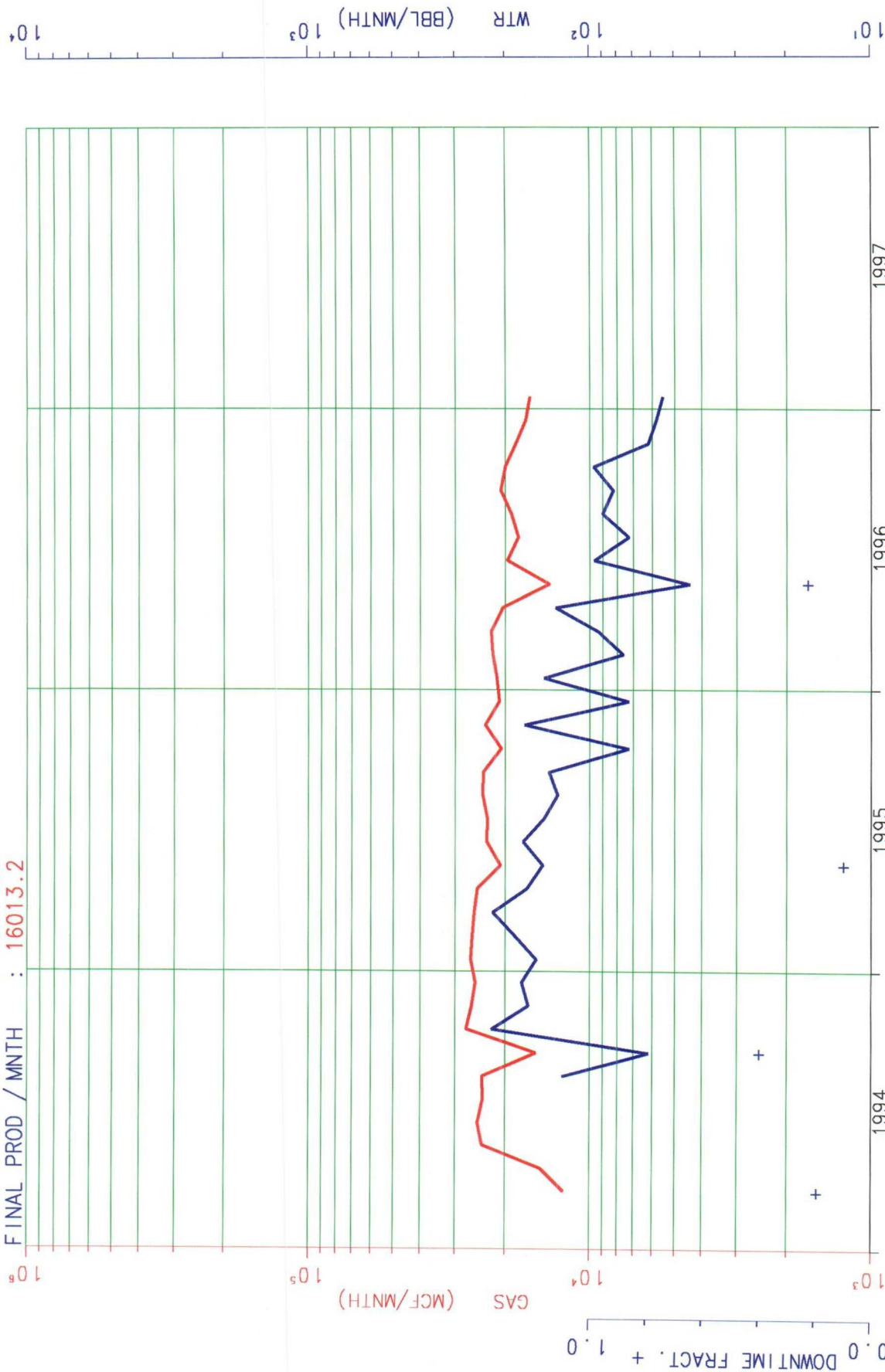
ADJ	PRODUCED				DAYS		WELL			
FLG DATE	OIL (BBL)	GAS (MCF)	WATER (BBL)	PROD	OP	ST	CL	TY		
* 1996-02	0.00	685	2	29.00	29	11	03	2		
* 1996-03	0.00	716	3	31.00	31	11	03	2		
* 1996-04	0.00	653	4	30.00	30	11	03	2		
* 1996-05	0.00	577	1	24.00	24	11	03	2		
* 1996-06	0.00	629	3	30.00	30	11	03	2		
* 1996-07	0.00	584	2	31.00	31	11	03	2		
1996-08	0.00	598	2	31.00	31	11	03	2		
1996-09	0.00	650	2	30.00	30	11	03	2		
1996-10	0.00	649	3	31.00	31	11	03	2		
1996-11	0.00	577	2	30.00	30	11	03	2		
1996-12	0.00	548	1	31.00	31	11	03	2		
1997-01	0.00	513	1	31.00	31	11	03	2		

PA1=ICE PA2=Exit PF1=Help PF3=End PF11=GRAPH  
 Transfer-> PF7=Backward PF8=Forward PF10=GRAND MENU PF12=LOG GRAPH

3/94-1/97

INITIAL PROD / MNTH : 15344.2  
 REMAINING LIFE : 2.92  
 CUM PRODUCTION : 751112.  
 FINAL PROD / MNTH : 16013.2

Current Cums  
 751112. MCF GAS  
 3620. BBL WTR



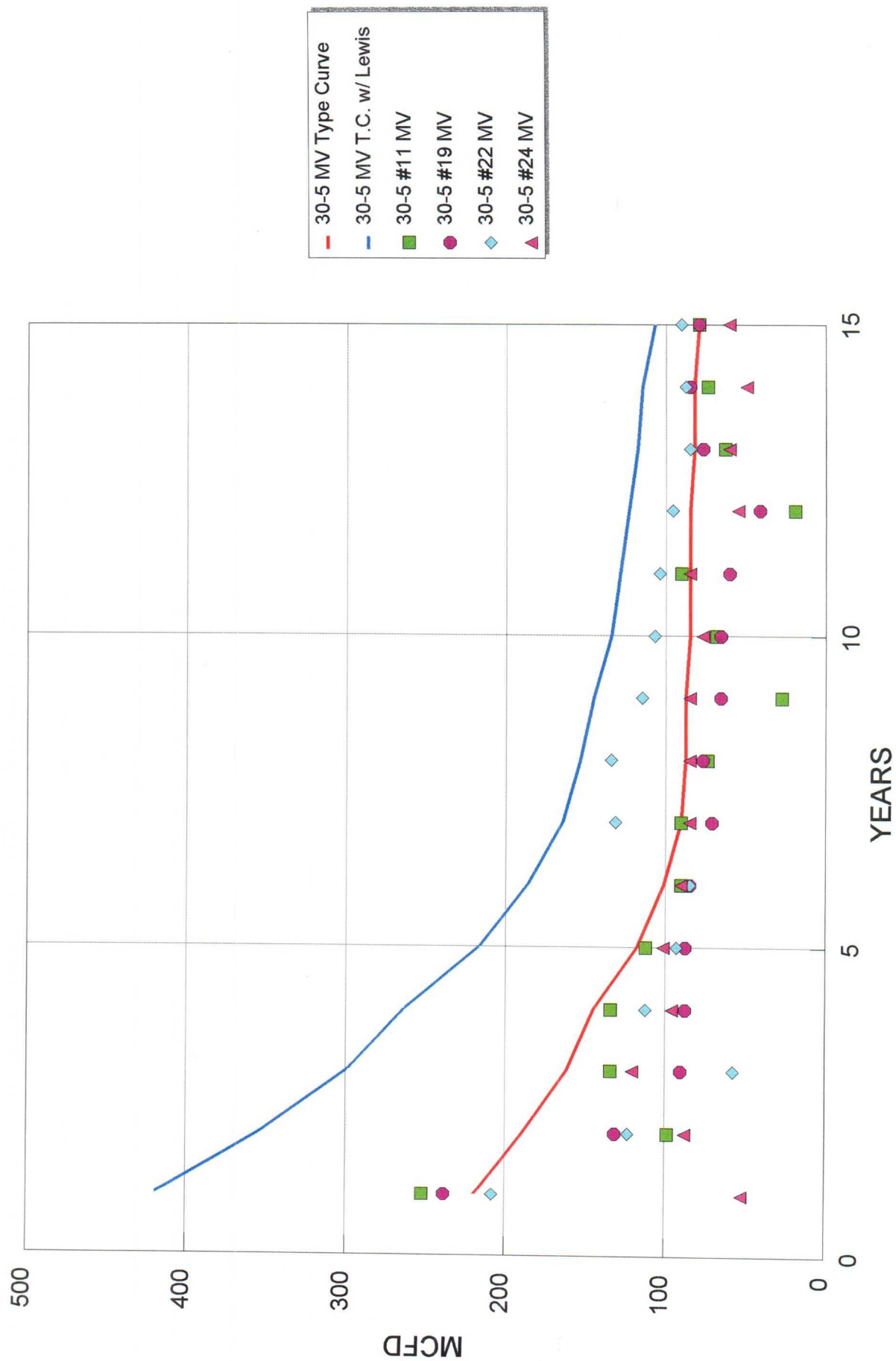
AVERAGE ONTIME = 0.975

LEASE- 650402 : SAN JUAN 30-5 DAKOTA UNIT-APO  
 RESVR- 079 : BASIN DAKOTA NQ  
 WELL - 00053E CUM MCF = 751113.

F060601  
 ZONE-650402079000053EF060601  
 API-30039251550000 THRU 97/01



# SAN JUAN 30-5 UNIT MESAVERDE



### Production Allocation Methodology

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

- Subtraction Method ( +/- 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.