DATE IN 6/12/98	SUSPENSE 7/2/98	ENGINEER DC	LOGGED BY KV	TYPE DHC

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
- Engineering Bureau -
2040 South Pacheco, Santa Fe, NM 87505

1993

ADMINISTRATIVE APPLICATION COVERSHEET

THIS COVERSHEET IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATION FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSP-Non-Standard Proration Unit] [NSL-Non-Standard Location]
[DD-Directional Drilling] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]

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JUN 12 1998
OIL CONSERVATION DIVISION

[A] Location - Spacing Unit - Directional Drilling
❑ NSL ❑ NSP ❑ DD ❑ SD

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement
☒ DHC ❑ CTB ❑ PLC ❑ PC ❑ OLS ❑ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
❑ WFX ❑ PMX ❑ SWD ❑ IPI ❑ EOR ❑ PPR

[2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or ❑ Does Not Apply

[A] ❑ Working, Royalty or Overriding Royalty Interest Owners

[B] ❑ Offset Operators, Leaseholders or Surface Owner

[C] ❑ Application is One Which Requires Published Legal Notice

[D] ❑ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ❑ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ❑ Waivers are Attached

[3] **INFORMATION / DATA SUBMITTED IS COMPLETE** - Certification

I hereby certify that I, or personnel under my supervision, have read and complied with all applicable Rules and Regulations of the Oil Conservation Division. Further, I assert that the attached application for administrative approval is accurate and complete to the best of my knowledge and where applicable, verify that all interest (WI, RI, ORRI) is common. ***I understand that any omission of data (including API numbers, pool codes, etc.), pertinent information and any required notification is cause to have the application package returned with no action taken.***

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Mark Stodola	Mark Stodola	Reservoir Engr.	6/9/98
Print or Type Name	Signature	Title	Date

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

APPLICATION FOR DOWNHOLE COMMINGLING

Form C-107-A
New 3-12-96

APPROVAL PROCESS:
X Administrative __Hearing

EXISTING WELLBORE
X YES __NO

Phillips Petroleum Company (Operator) 5525 Hwy. 64, Farmington, NM 87401 (Address)

San Juan 29-5 Unit (Lease) #65M (Well No.) E Sec, 28, T29N, R5W (Unit Ltr. - Sec - Twp - Rge) Rio Arriba, NM (County)

OGRID NO. 017654 Property Code 009256 API NO. 30-039-25492 Spacing Unit Lease Types: (check 1 or more) Federal X, 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)	5533' - 6104'		7993' - 8080'
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: Estimated Current Gas & Oil - Flowing: Measured Current All Gas Zones: Estimated Or Measured Original	a. (Current) 600 psi (est.) b. (Original) 1234 psi (est.)	a. b.	a. 645 psi (24 hr SI) b. 2981 psi (est.)
6. Oil Gravity (°API) or Gas BTU Content	1185 btu/ft^3		1030 btu/ft^3
7. Producing or Shut-In?	Producing		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 andoil/gas/ water rates of recent test (within 60 days)	Date: 4/25/87 Rates: 163 mcfd 0 bopd	Date: Rates:	Date: 4/25/98 Rates: 52 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 X No
If not, have all working, overriding, and royalty interests been notified by certified mail? X Yes ___ No
Have all offset operators been given written notice of the proposed downhole commingling? X Yes ___ No

11. Will cross-flow occur? X 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. X Yes ___ No (If No, attach explanation)

12. Are all produced fluids from all commingled zones compatible with each other? X Yes ___ No (see attachment

13. Will the value of production be decreased by commingling? ___ Yes X 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. X 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 Mark Stodola TITLE Reservoir Engr. DATE 6-9-98

TYPE OR PRINT NAME Mark Stodola TELEPHONE NO. (505) 599-3455

DISTRICT I
P.O. Box 1980, Hobbs, N.M. 88241-1980

DISTRICT II
P.O. Drawer DD, Artesia, N.M. 88211-0719

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, NM 87504-2088

RECEIVED
BLM
95 JAN 13 PM 1:30

Revised Febuary 21, 199
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹API Number	²Pool Code	³Pool Name
30-039-	72319 & 71599	Blanco Mesaverde & Basin Dakota

⁴Property Code	⁵Property Name	⁶Well Number
009256	SAN JUAN 29-5 UNIT	65M

⁷OGRID No.	⁸Operator Name	⁹Elevation
017654	PHILLIPS PETROLEUM	6731

¹⁰Surface Location

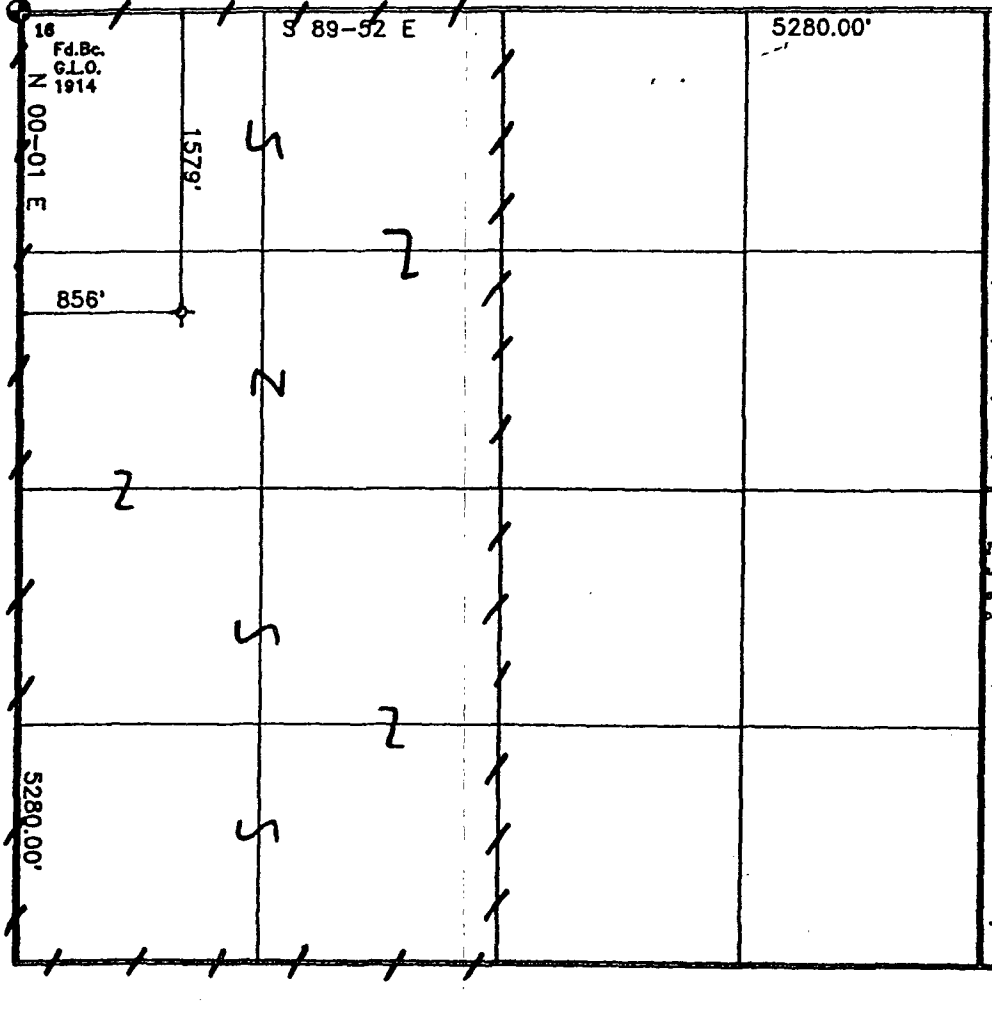
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	28	T. 29 N.	R. 5 W.		1579	NORTH	856	WEST	RIO ARRIBA

¹¹Bottom 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

¹²Dedicated Acres	¹³Joint or Infill	¹⁴Consolidation Code	¹⁵Order No.
MV=320 ac(W/2)	I	Unitized	
DK=320 ac(W/2)	I	Unitized	

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



¹⁷OPERATOR CERTIFICATION

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

Signature
Ed Hasely
Printed Name
Envir./Regulatory Eng.
Title
1-12-95
Date

¹⁸SURVEYOR 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.

NOVEMBER 22, 1994
Date of Survey
Signature and Seal of Professional Surveyor:

NEW MEXICO
8894
REGISTERED PROFESSIONAL LAND SURVEYOR
ROY A. RUSH

8894
Certificate Number

29-5 Unit #65M Dakota Forecast

Initial Production Rate	=	*60 MCFD*
Hyperbolic Exponent	=	*0.33*
Decline Rate	=	*8 %*

	Month	***Monthly MCF***
1998	Aug	***1,854***
	Sep	***1,782***
	Oct	***1,829***
	Nov	***1,758***
	Dec	***1,805***
1999	Jan	***1,793***
	Feb	***1,609***
	Mar	***1,770***
	Apr	***1,702***
	May	***1,747***
	Jun	***1,680***
	Jul	***1,724***
	Aug	***1,713***
	Sep	***1,647***
	Oct	***1,691***
	Nov	***1,626***
	Dec	***1,669***
2000	Jan	***1,658***

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

June 9, 1998

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

Downhole Commingling Allocation Method
on the San Juan 29-5 Unit #65M

Dear Sirs:

Phillips is proposing to utilize the subtraction method on the subject well for approximately 1 year after actual commingling occurs. After the first year, 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 plans are to restimulate the Lewis Shale interval of the Blanco Mesaverde formation before commingling both zones.

Dakota Production Forecast

August 1998	1,854	February 1999	1,609
September 1998	1,782	March 1999	1,770
October 1998	1,829	April 1999	1,702
November 1998	1,758	May 1999	1,747
December 1998	1,805	June 1999	1,680
January 1999	1,793	July 1999	1,724

For example, if the total volume for September 1998 were 3,140 mcf, then the Dakota would be allocated 1,782 mcf and the Mesaverde 1,358 mcf. And subsequently, the Dakota would be allocated (1,782/3,140) or 56.75%, and Mesaverde would be allocated (1,358/3,140) or 43.25%.

Sincerely,

PHILLIPS PETROLEUM COMPANY

Mark W. Stodola

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: MAY 27, 1998

WELL NAME: SAN JUAN 29-5 # 65M
FORMATION: DAKOTA

TYPE TEST: STATIC GRADIENT

COUNTY: RIO ARRIBA
STATE: NEW MEXICO

ELEVATION: GL
TOTAL DEPTH: PBTD 8141'
PERFORATIONS: 7993' TO 8080'
TUBING SIZE: 2 3/8 TO 7962'
CASING SIZE: TO
PACKER:
OTHER: SN @ 7931'
AT SHUT IN MV CASING 200, DK TUBING 200. 158,000 CFM

CASING PRESSURE: MV 360
TUBING PRESSURE: DK 220
OIL LEVEL:
WATER LEVEL: 7176'
TEMPERATURE:
AMERADA ELEMENT NUMBER: 87977
RANGE: 0-2500
WELL STATUS: SHUT IN 24 3/4 HRS

INDIVIDUAL WELL DATA SHEET

==========

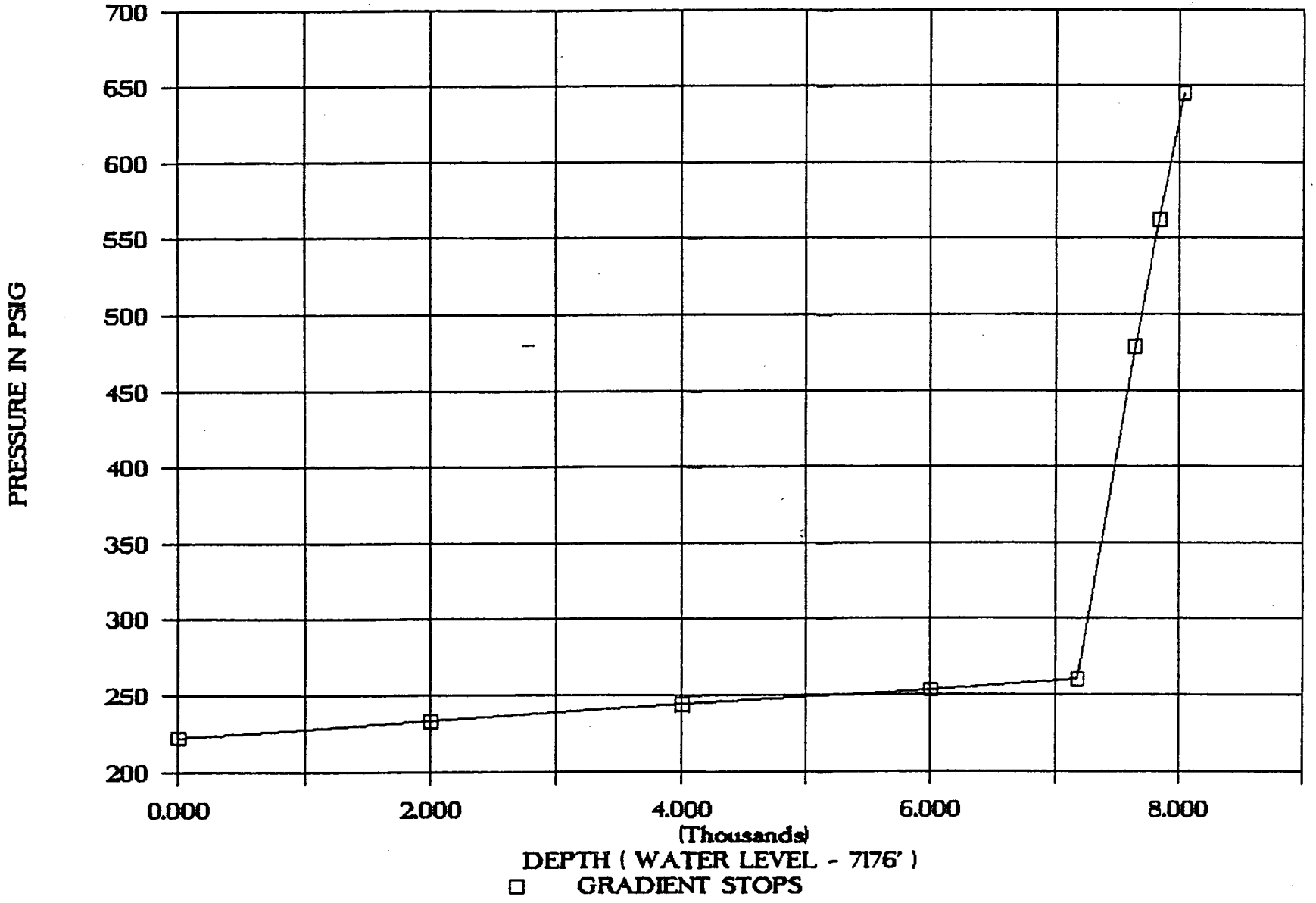
FLOWING GRADIENT TRAVERSE

DEPTH IN FEET	PRESSURE PSIG	GRADIENT PSI/FOOT
0	222	
2000	233	0.006
4000	244	0.006
6000	253	0.005
7637	479	0.138
7837	562	0.415
8037	645	0.415

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 29-5 # 65M

DATE: 05-27-98 STATIC GRADIENT



b) the average current shut-in bottomhole pressure within the Mesaverde and Dakota formations are approximately 843 psi and 1,224 psi, respectively.

(10) There is sufficient pressure data available within the San Juan 29-5 Unit so as to except pressure criteria as proposed by the applicant.

(11) The applicant testified that various allocation methods will be utilized for downhole commingled wells within the San Juan 29-5 Unit depending on the circumstances. Some of the methods and circumstances are described as follows:

a) in those instances where a newly completed zone is commingled with an existing producing interval with an established decline, the subtraction method will be utilized for a period of +/- 12 months. Subsequent to this time, and assuming that the production rate has stabilized, a fixed allocation will be determined and utilized; and,

b) in those instances where a well is newly drilled, the lower zone will be production tested for a period of two to four weeks or until a stabilized rate is obtained. Subsequent to that time, a stabilized rate from both commingled zones within the well will be obtained. A fixed allocation of production will then be determined utilizing the data obtained from the flow tests.

(12) The allocation methods proposed by the applicant are routinely utilized by industry and approved by the Division and therefore, the proposal to except allocation formulas should be approved.

(13) In support of its request to establish a "reference case" or administrative procedure for providing notice within the San Juan 29-5 Unit the applicant presented evidence and testimony which indicates that:

a) the interest ownership between two zones within a given wellbore in the San Juan 29-5 Unit is generally not common;

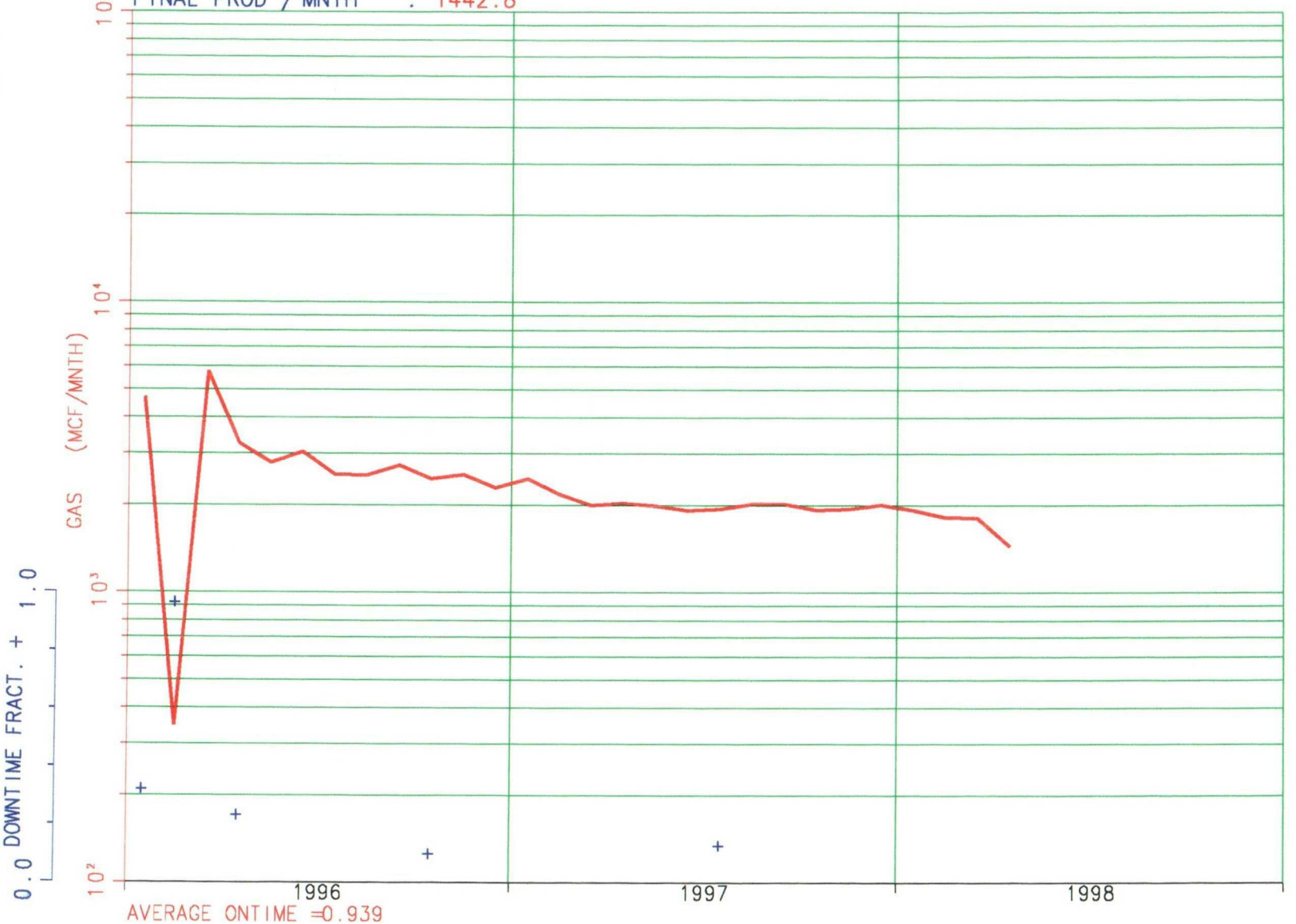
b) pursuant to Division Rule No. 303.D., applicant is currently required to notify all interest owners within the San Juan 29-5 Unit every time a Form C-107-A is submitted to the Division. There are a considerable number of such interest owners within the unit;

c) providing notice to each interest owner within the San Juan 29-5 Unit of subsequent downhole commingling is unnecessary and is an excessive burden on the applicant;

1/96-4/98

INITIAL PROD / MNTH : 6790.0
REMAINING LIFE : 2.33
0.00
CUM PRODUCTION : 66319.
FINAL PROD / MNTH : 1442.8

Current Cums
66319. MCF GAS



AVERAGE ONTIME =0.939

LEASE- 650265 : SAN JUAN 29-5 DAKOTA UNIT
RESVR- 076 : BASIN DAKOTA
WELL - 00065M CUM MCF = 66319.

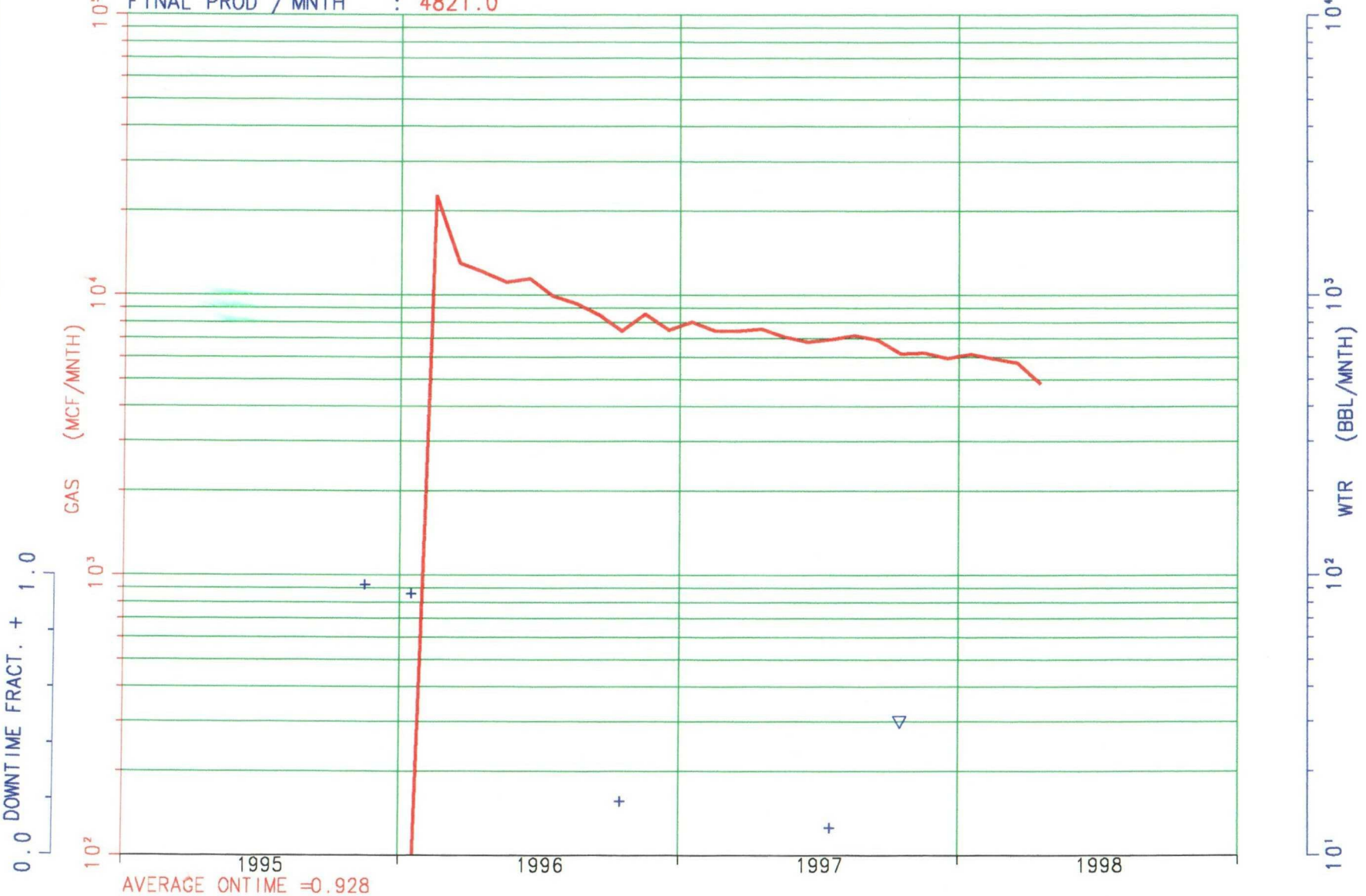
F061601
ZONE-650265076000065MF061601
API-30039254920000 THRU 98/04

MWST 06/05/98 10:46

11/95-4/98

INITIAL PROD / MNTH : 491.6
REMAINING LIFE : 2.50
0.00
CUM PRODUCTION : 226016.
FINAL PROD / MNTH : 4821.0

Current Cums
226016. MCF GAS
31. BBL WTR



AVERAGE ONTIME =0.928

LEASE- 650111 : SAN JUAN 29-5 MESA VERDE
RESVR- 002 : BLANCO MESAVERDE
WELL - 00065M CUM MCF =226017.

F061602
ZONE-650111002000065MF061602
API-30039254920000 THRU 98/04

MWST 06/05/98 10:44

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 = (Commingled rate - Lower zone rate) / 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.