

DATE IN 10/26/06	SUSPENSE 11/16/06	ENGINEER WJD	LOGGED IN 10/27/06	TYPE DHE 3817	APP NO. P.J. 250630045888
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ABOVE THIS LINE FOR DIVISION USE ONLY

**NEW MEXICO OIL CONSERVATION DIVISION**  
 - Engineering Bureau -  
 1220 South St. Francis Drive, Santa Fe, NM 87505



**ADMINISTRATIVE APPLICATION CHECKLIST**

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

**Application Acronyms:**

- [NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [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]
- [A] Location - Spacing Unit - Simultaneous Dedication  
 NSL  NSP  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
- [D] Other: Specify \_\_\_\_\_
- [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] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

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

Justin M. Stolarczyk DISTRICT ENGINEER  
 Print or Type Name Signature Title Date  
 JSTOLWAR@ENERGEN.COM  
 e-mail Address

RECEIVED

October 12, 2006

OCT 23 2006

Mr. Mark E. Fesmire, P.E. - Director  
New Mexico Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, NM 87505

Oil Conservation Division  
1220 S. St. Francis Drive  
Santa Fe, NM 87505

RE: Administrative Approval to Downhole Commingle  
Energen Resources Corporation  
Northwest #4E  
1520' FSL, 790' FEL, Section 08, T26N, R4W, NMPM  
Rio Arriba County, New Mexico

Dear Mr. Fesmire:

Energen Resources Corporation requests administrative approval to downhole commingle the Blanco Mesa Verde (MV), Basin Dakota, and BS Mesa Gallup pools in the subject well. It is our intent to commingle the three zones to increase the economic potential of this well. The well is currently on a plunger lift system, and we believe it is the most economical method to recover gas from all three zones in the subject well. We identify this method to improve the overall efficiency of the well.

To comply with New Mexico Oil Conservation Rules, Energen Resources Corporation is submitting the following data for your approval of the proposed commingling.

1. C-107A - Application for Downhole Commingling
2. C-102 - Location plat showing each spacing unit and dedicated acreage
3. Offset Operator Ownership Plat
4. Production curves from the current well in the following zone:
  - i) Blanco Mesa Verde
  - ii) Basin Dakota/BS Mesa Gallup
5. Allocation method

In accordance to New Mexico Oil Conservation Division Rule 303C, Energen Resources has notified all offset operators.

If additional information is needed, please contact me at 505-325-6800.

Sincerely,



Justin M. Stolworthy  
District Engineer II

xc:

NMOCD – Aztec District Office  
BLM- FFO notified via Federal Sundry Notice 3160-5 and sent NMOCD form C-107A

District I  
1625 N. French Drive, Hobbs, NM 88240

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-107A  
Revised June 10, 2003

District II  
1301 W. Grand Avenue, Artesia, NM 88210

Oil Conservation Division  
1220 South St. Francis Dr.

APPLICATION TYPE  
X Single

District III  
Well  
1000 Rio Brazos Road, Aztec, NM 87410

Santa Fe, New Mexico 87505

Establish Pre-Approved Pools  
EXISTING WELLBORE  
X Yes      No

District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

APPLICATION FOR DOWNHOLE COMMINGLING

DHC 3817

Energen Resources

2198 Bloomfield Highway, Farmington, New Mexico 87401

Operator Northwest Address I Section 08, T26N, R4W N.M.P.M. Rio Arriba  
Lease 162928 Well No. 302938 Unit Letter-Section-Township-Range 30-039-23578 County  
OGRID No. Property Code API No. Lease Type: X Federal      State      Fee

DATA ELEMENT	UPPER ZONE	INTERMEDIATE ZONE	LOWER ZONE
Pool Name	Blanco Mesa Verde <i>no gas</i>	BS Mesa Gallup <i>gas</i>	Basin Dakota <i>no gas</i>
Pool Code	72319	<del>71599</del> 72920	<del>72920</del> 71599
Top and Bottom of Pay Section (Perforated or Open-Hole Interval)	5523-5778	6934-7140	7695-7888
Method of Production (Flowing or Artificial Lift)	Artificial Lift - Plunger	Artificial Lift - Plunger	Artificial Lift - Plunger
Bottomhole Pressure (Note: Pressure data will not be required if the bottom perforation in the lower zone is within 150% of the depth of the top perforation in the upper zone)	N/A within 150%	N/A within 150%	N/A within 150%
Oil Gravity or Gas BTU (Degree API or Gas BTU)	1267	1267	1267
Producing, Shut-In or New Zone	Producing	Shut-In	Shut-In
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: 10/11/2006 Rates: 0 BOPD/ 105MCFPD/0 BWPD	Date: 8/14/04 Rates: 0 BOPD/ 10 MCFPD/ 0 BWPD	Date: 8/14/04 Rates: 0 BOPD/ 40 MCFPD/0 BWPD
Fixed Allocation Percentage (Note: If allocation is based upon something other than current or past production, supporting data or explanation will be required.)	Oil <u>    </u> Gas <u>    </u> 0 % 70 %	Oil <u>    </u> Gas <u>    </u> 20 % 6 %	Oil <u>    </u> Gas <u>    </u> 80 % 24 %

ADDITIONAL DATA

Are all working, royalty and overriding royalty interests identical in all commingled zones? Yes      No X  
If not, have all working, royalty and overriding royalty interest owners been notified by certified mail? Yes X No     

Are all produced fluids from all commingled zones compatible with each other? Yes X No     

Will commingling decrease the value of production? Yes      No X

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

NMOCD Reference Case No. applicable to this well: Approval has been given to DCH Basin DK and BS Mesa GI # DAC 1443AZ

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 working, royalty and overriding royalty interests for uncommon interest cases.
- Any additional statements, data or documents required to support commingling.

PRE-APPROVED POOLS

If application is to establish Pre-Approved Pools, the following additional information will be required:

- List of other orders approving downhole commingling within the proposed Pre-Approved Pools
- List of all operators within the proposed Pre-Approved Pools
- Proof that all operators within the proposed Pre-Approved Pools were provided notice of this application.
- Bottomhole pressure data.

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

SIGNATURE [Signature] TITLE District Engineer II DATE 10/12/06

TYPE OR PRINT NAME Justin M. Stolworthy TELEPHONE NO. ( 505 ) 325-6800

E-MAIL ADDRESS istolwor@energen.com

**District I**  
1625 N. French Dr., Hobbs, NM 88240

**District II**  
1301 W. Grand Avenue, Artesia, NM 88210

**District III**  
1000 Rio Brazos Rd., Aztec, NM 87410

**District IV**  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals & Natural Resources Department  
**OIL CONSERVATION DIVISION**  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-102  
Revised June 10, 2003  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

AMENDED REPORT

**WELL LOCATION AND ACREAGE DEDICATION PLAT**

<sup>1</sup> API Number 30-039-23578		<sup>2</sup> Pool Code 72319/71599/72920		<sup>3</sup> Pool Name Blanco Mesa Verde/ Basin Dakota/ BS Mesa Gallup	
<sup>4</sup> Property Code 302938		<sup>5</sup> Property Name Northwest			<sup>6</sup> Well Number 4E
<sup>7</sup> OGRID No. 162928		<sup>8</sup> Operator Name Energen Resources Corporation			<sup>9</sup> Elevation 6835'

<sup>10</sup> Surface Location

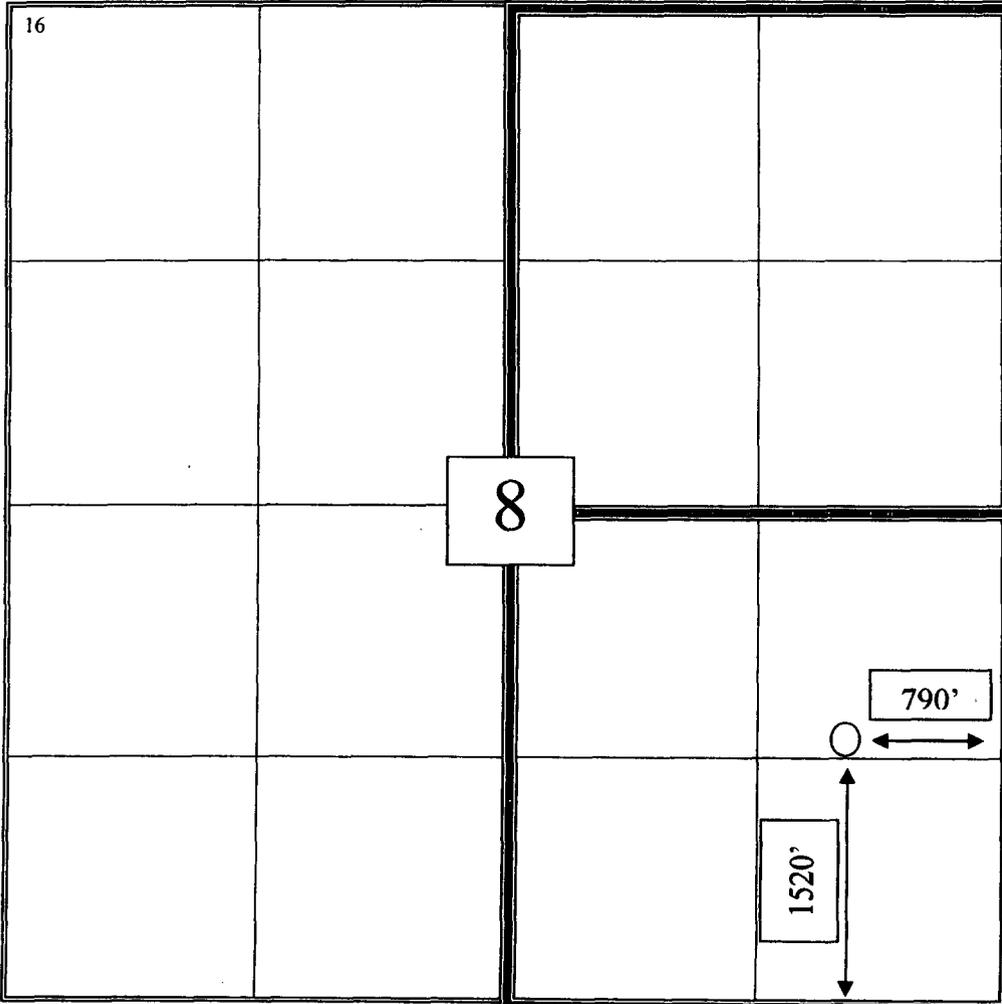
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
1	8	26N	4W		1520	South	790	East	Rio Arriba

<sup>11</sup> 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

<sup>12</sup> Dedicated Acres 320/160/320	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> 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



<sup>17</sup> OPERATOR CERTIFICATION

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

*[Handwritten Signature]*  
Signature

Justin M. Stolworthy  
Printed Name

District Engineer II jstolwor@energen.com

Title and E-mail Address

10/12/06

Date

<sup>18</sup> 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.

August 18, 2004

Date of Survey

Signature and Seal of Professional Surveyor:

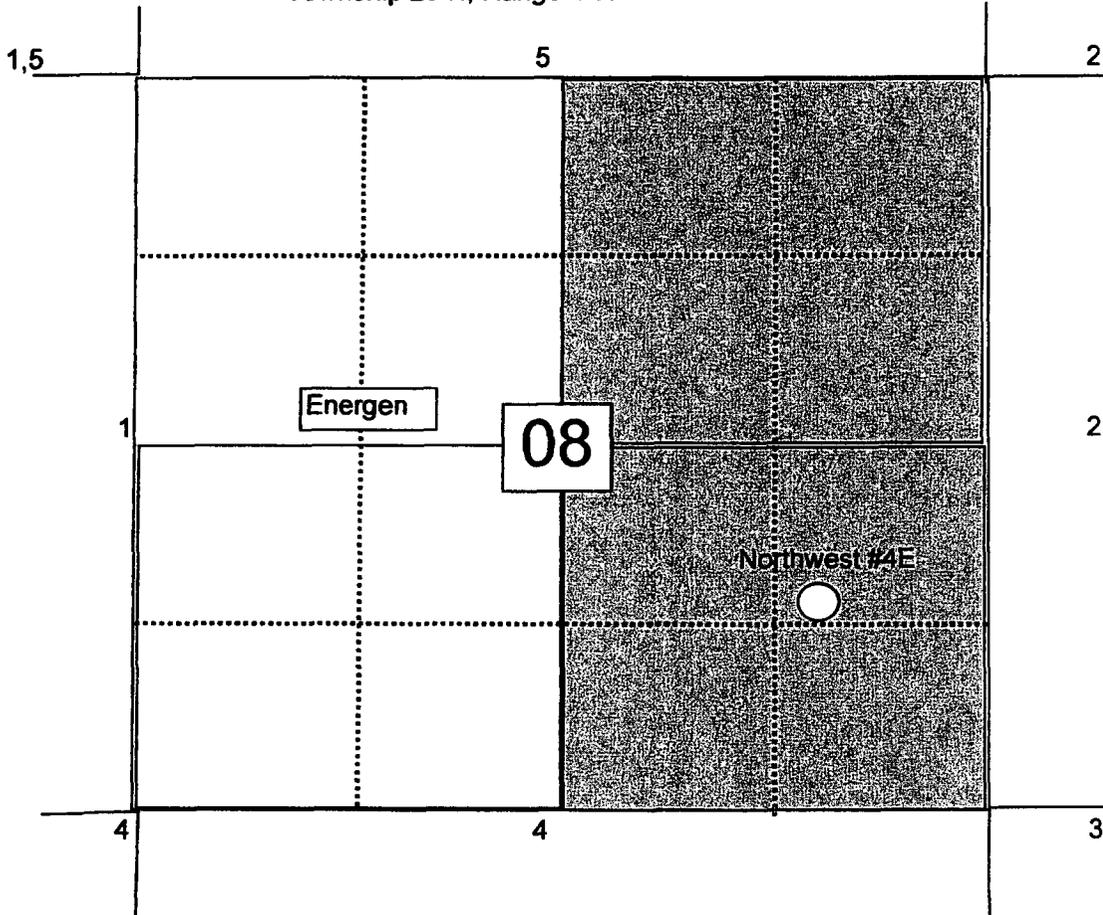
Jaason C. Edwards

NM 15269

Certificate Number

Energen Resources Corp.  
Northwest #4E  
Offset Operator/ Ownership Plat  
Blanco Mesa Verde/Basin Dakota/ BS Mesa Gallup  
Downhole Commingling

Township 26 N, Range 4 W



- 1) Energen Resources
- 2) CDX Rio LLC
- 3) Conoco Phillips Company
- 4) Burlington Resources O&G Company
- 5) Patina San Juan Incorporated

Notification list of Working, Royalty, and overriding royalty interests

1) Working Interest

JOC Ventures  
144 Gould Street, Suite 204  
Needham, MA 02494-2317  
Attn: Bill Salem

2) Royalty

Jicarilla Apache Tribe  
P.O. Box 507  
Dulce, NM 87528

Notification list of Offset Operators

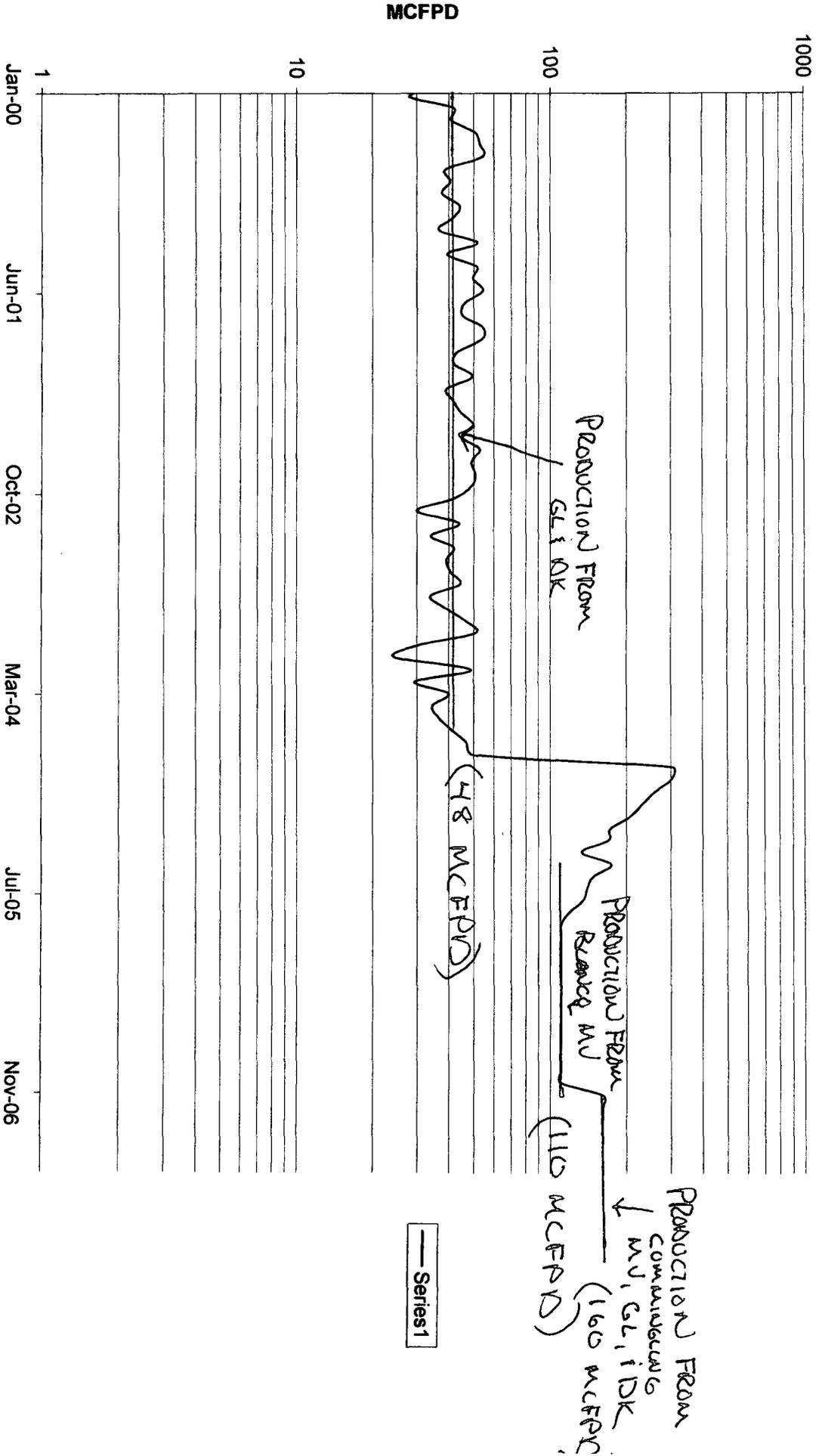
1) CDX Rio, LLC  
2010 Afton Place  
Farmington, NM 87401

2) Burlington Resources  
P.O. Box 4289  
Farmington, NM 87499

3) ConocoPhillips  
P.O. Box 4289  
Farmington, NM 87499

4) Patina Oil & Gas  
5802 Hwy 64  
Farmington, NM 87401

# Northwest#4E Production History and Estimation

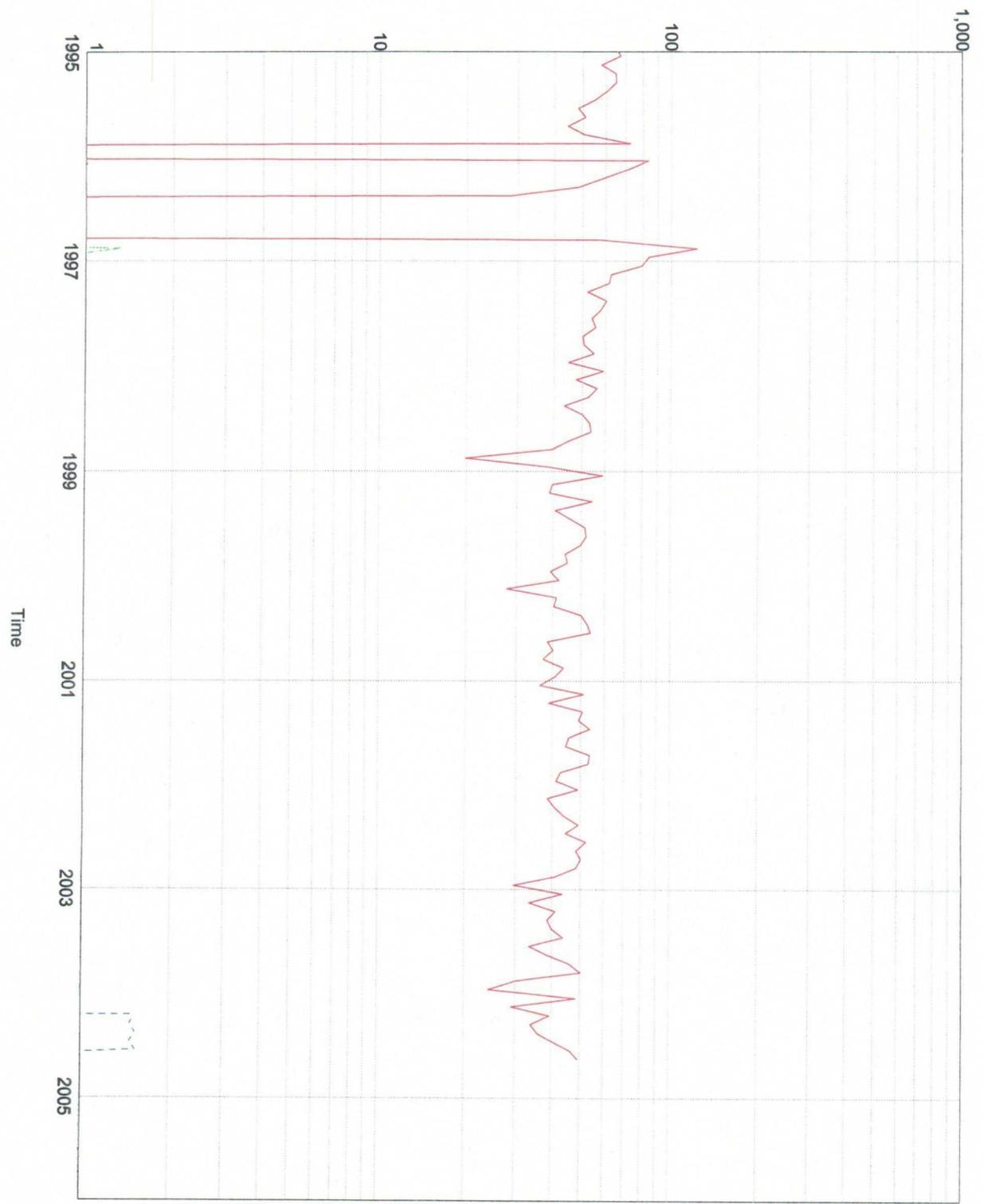


Lease Name: NORTHWEST  
County, State: RIO ARRI, NM  
Operator: ENERGEN RESOURCES CORPORATION  
Field: MULTIPLE  
Reservoir: MULTIPLE  
Location:

NORTHWEST

GLINK

### Production Rates



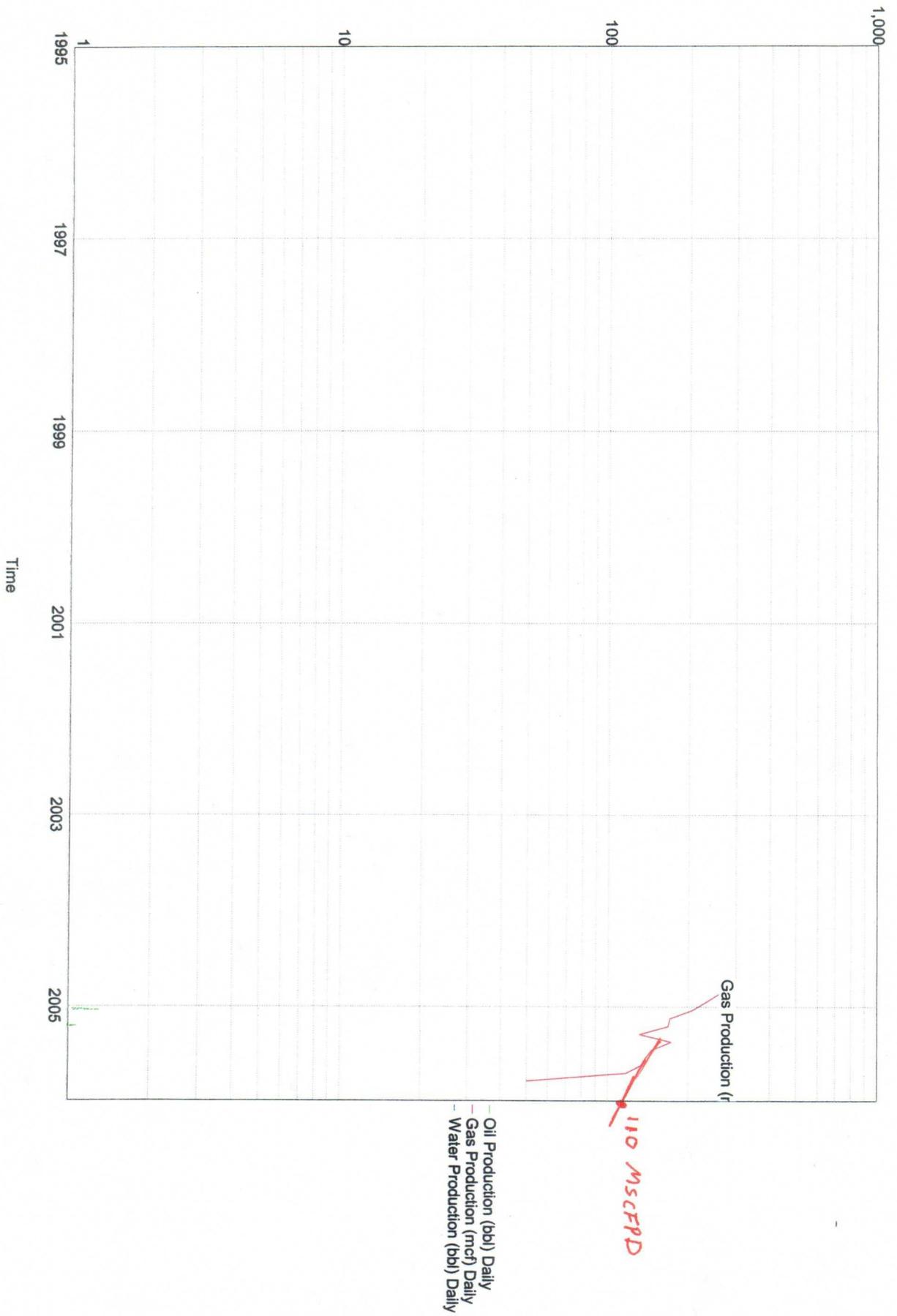
Oil Production (bbl) Daily  
Gas Production (mcf) Daily  
Water Production (bbl) Daily

Lease Name: NORTHWEST  
 County, State: RIO ARBA, NM  
 Operator: ENERGEN RESOURCES CORPORATION  
 Field: BLANCO  
 Reservoir: MESAVERDE  
 Location: 8 26N 4W SW NE SE

NORTHWEST 4E 30039235780001

MV

Production Rates



## Recommended Allocation for Downhole Commingles

**Well: Northwest #4E**

30-day average production based on December, 2003 production  
(see attached decline curve)

G a s	Zone	Average MCFD	Percentage of total flow
	GP	*	*
	DK	*	*
	Total	33	100%

O i l	Zone	Average BOPD	Percentage of total flow
	GP	*	*
	DK	*	*
	Total	0	100%

**Note:** \* - Although production from both the GP & DK is through separate tubing strings, the gas is surface commingled before it is metered. Therefore, there is no precise way to measure the production volume and allocate accordingly.

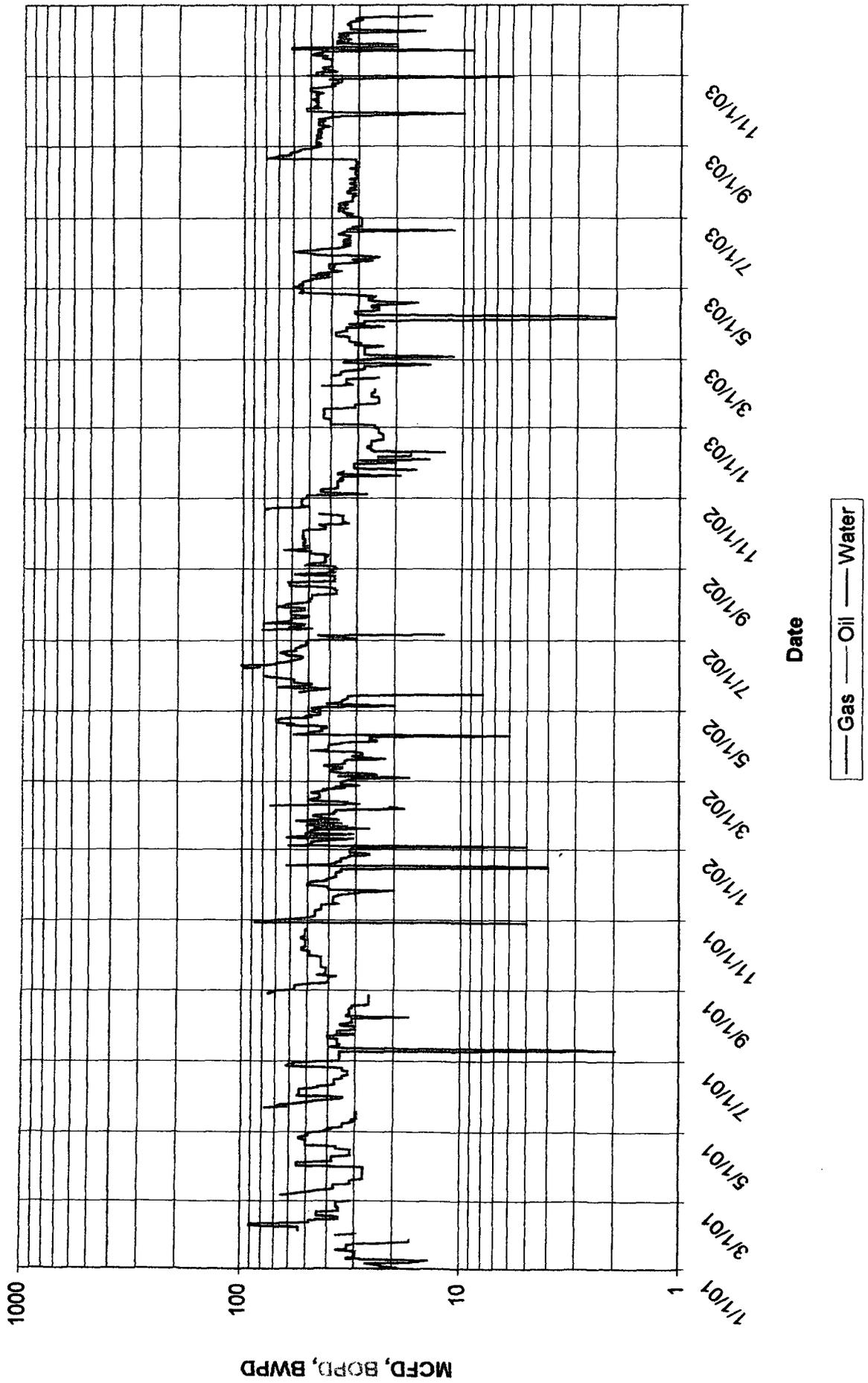
Recommended allocation for future downhole commingled production

Zone	Gas	Oil
GP	20%	20%
DK	80%	80%
Total	100%	100%

**Note:** This recommended allocation is based on GP & DK allocations granted for offset wells producing from the same two zones.

APPROVAL - ORDER # DKC-1443 AZ

Patina San Juan, Inc.  
Northwest Federal #4E - GP & DK Decline Curve



## **Recommended Allocation Method**

1. MIRU and POOH with tubing strings.
2. TIH with work string and saw tooth collar.
3. Clean out casing to PBTD @  $\pm 6000'$ .
4. TOH with work string
5. TIH with work string and retrieving head from Baker Tools.
6. TOH with work string and RBP.
7. TIH w/ 2-3/8" production tubing to Basin Dakota Mid-perforations or there about.
8. Swab well in and place on plunger lift.
9. Based on historical production allocation for gas is 70% Mesa Verde, 6% Mesa Gallup and 24% Basin Dakota. Oil will be allocated 0% Mesa Verde, 20% Mesa Gallup and 80% Basin Dakota should the well begin to make oil based on area knowledge.

Note: see enclosed production graphs.