

ABOVE THIS LINE FOR DIVISION USE ONLY

**NEW MEXICO OIL CONSERVATION DIVISION**  
- Engineering Bureau -

**ADMINISTRATIVE APPLICATION COVERSHEET**

THIS COVERSHEET IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS

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]

1623

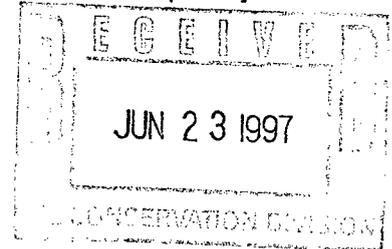
[1] **TYPE OF APPLICATION - Check Those Which Apply for [A]**

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

Check One Only for [B] and [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 - Statement of Understanding**

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, information or notification is cause to have the application package returned with no action taken.

Note: Statement must be completed by an individual with supervisory capacity.

Jerry W. Hoover  
 Print or Type Name

*Jerry W. Hoover*  
 Signature

Sr. Conservation Coordinator  
 Title

6/19/97  
 Date

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

**SUNDRY NOTICES AND REPORTS ON WELLS**

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals

**SUBMIT IN TRIPLICATE**

1. Type of Well

Oil Well  Gas Well  Other

2. Name of Operator

CONOCO INC.

3. Address and Telephone No.

10 DESTA DR. STE. 100W, MIDLAND, TX. 79705-4500 (915) 686-5424

4. Location of Well (Footage, Sec., T. R. M. or Survey Description)

1370' FSL & 1440' FWL  
Sec. 1, T-25N, R-5W

5. Lease Designation and Serial No.

CONT 145

6. If Indian, Allottee or Tribe Name

Jicarilla

7. If Unit or CA, Agreement Designation

8. Well Name and No.

Jicarilla K No. 10E

9. API Well No.

30-039-25393

10. Field and Pool, or Exploratory Area

Chacra/MV/Dakota

11. County or Parish, State

Rio Arriba, NM

CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- Notice of Intent  
 Subsequent Repon  
 Final Abandonment Notice

TYPE OF ACTION

- Abandonment  
 Recompletion  
 Plugging Back  
 Casing Repair  
 Altering Casing  
 Other Downhole Commingling  
 Change of Plans  
 New Construction  
 Non-Routine Fracrunng  
 Water Shut-Off  
 Conversion to Injection  
 Dispose Water

(Note: Repon result of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

Approval is requested to downhole commingle the Chacra, Mesaverde, and Dakota Pools in this well according to the method and allocation formula proposed in the attached C-107-A application to the New Mexico Oil Conservation Division.

**RECEIVED**  
JUL - 1 1997  
**OIL CON. DIV.**  
DIST. 3

I hereby certify that the foregoing is true and correct

Jerry W. Hoover

Signature Jerry W. Hoover

Title Sr. Conservation Coordinator

Date 6/19/97

(This space for Federal or State Office use)

Approved by [Signature]

Title Chief, Lands and Mineral Resources

Date JUN 30 1997

Conditions of approval if any:

DISTRICT I  
 P O Box 1980, Hobbs, NM 88241 1980

State of New Mexico  
 Energy, Minerals and Natural Resources Department

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

DISTRICT II  
 811 South First St. Artesia NM 88210 2835

OIL CONSERVATION DIVISION

2040 S. Pacheco  
 Santa Fe, New Mexico 87505-6429

APPROVAL PROCESS:  
 Administrative  Hearing

DISTRICT III  
 1000 Rio Brazos Rd. Aztec, NM 87410 1693

APPLICATION FOR DOWNHOLE COMMINGLING

EXISTING WELLBORE  
 YES  NO

Operator Conoco Inc. Address 10 Desta Dr. Ste 100W, Midland, Tx. 79705-4500

Lease Jicarilla K Well No 10E Unit Ltr Sec Twp Rge K - 1 - 25N - 5W County Rio Arriba

OGRID NO. 005073 Property Code 18023 API NO. 30-039-25393 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	Otero Chacra - 82329	Blanco Mesaverde - 72319	Basin Dakota - 71599
2. TOP and Bottom of Pay Section (Perforations)	4172-4207	5297-5535	7611-7671
3. Type of production (Oil or Gas)	Gas	Gas	Gas
4. Method of Production (Flowing or Artificial Lift)	Flow	Flow	Flow
5. Bottomhole Pressure Oil Zones - Artificial Lift: Gas & Oil - Flowing: All Gas Zones: Estimated Current Measured Current Estimated Or Measured Original	a (Current) 869 BHP psia	a. 754 BHP psia	a. 718 BHP psia
	b(Original) 966 psia	b. 1321 psia	b. 2775 psia
6. Oil Gravity (*API) or Gas BT Content	1193 BTU	1363 BTU	1219 BTU
7. Producing or Shut-In?	to be completed	to be completed	to be completed
Production Marginal? (yes or no)	Yes	Yes	YES
• If Shut-In give date and oil/gas/water rates of last production <small>Note For new zones with no production history applicant shall be required to attach production estimates and supporting data</small> • If Producing, date and oil/gas/water rates of recent test (within 60 days)	Date Rates Incremental Production by Subtraction -- See attached data	Date Rates Incremental Production by Subtraction -- See attached data	Date Rates Mid-Year Average Producing Rates -- See Attached Table
	Date Rates	Date Rates	Date Rates
8. Fixed Percentage Allocation Formula - % for each zone	Oil: NA % Gas NA %	Oil: NA % Gas NA %	Oil: NA % Gas NA %

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 others  Yes  No

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) \_\_\_\_\_

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 Jerry W. Hoover TITLE Sr. Conservation Coord DATE 6/19/97

TYPE OR PRINT NAME Jerry W. Hoover TELEPHONE NO. (915) 686-6548

## ALLOCATION METHOD FOR COMMINGLING

### DAKOTA, MESAVERDE, & CHACRA

#### Proposed Method:

- (a) Dakota production projected and furnished in the table of mid-year average producing rates.
- (b) Mesaverde to be completed and rate established with approximately one week of testing.
- (c) Chacra to be completed and rate established with approximately one week of testing.
- (d) Mesaverde and Chacra fixed percentage allocation to be determined from test results of (b) and (c) above.
- (e) Mesaverde plus Chacra combined production volume to be determined by subtracting Dakota production from actual total monthly production volume.
- (f) This incremental (Mesaverde plus Chacra) production would then be allocated by the fixed percentage formula derived from the Mesaverde and Chacra test results in (d) above.
- (g) When the Mesaverde and Chacra test results are available, a final percentage formula will be submitted to the Aztec District Office for approval.

#### Supporting Data:

1. Normalized Mesaverde production from 17 offset wells.
2. Normalized Chacra production from 13 offset wells.

#### Discussion:

The IP's for the 17 offset Mesaverde completions are shown on the normalized plots to have averaged only 130 mcfpd while the IP's for the 13 offset Chacra completions averaged only 172 mcfpd. Therefore, the initial rates for their completions in the Jicarilla K #10E well are expected to be similarly marginal. The two normalized plots for these zones illustrate that they have similar production decline profiles. Both begin with a 60 % decline during the first year of production, change hyperbolically during the second year, and reach a steady decline of only 3.5 % by the third year.

Based on these two history matching models constructed from offset wells, it is assumed that as soon as a good initial rate can be obtained from both the Mesaverde and Chacra completions that it will be valid to set a fixed percentage allocation formula for these two zones that will be maintained throughout their production history.

The monthly Dakota production is predetermined by the attached table. The incremental production remaining after this established Dakota production is subtracted from each month's actual total production can then be allocated by the fixed percentage split for the Mesaverde and Chacra. When test results are available to determine this correct percentage split they will be reported to the Aztec District Office for approval.

District I  
 PO Box 1908, Hobbs, NM 88241-1908  
 District II  
 PO Drawer DD, Artesia, NM 88211-0719  
 District III  
 1000 Rio Brazos Rd., Aztec, NM 87410  
 District IV  
 PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico  
 Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION  
 PO Box 2088  
 Santa Fe, NM 87504-2088

Form C-102  
 Revised February 10, 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

API Number 30-039-23393-25343		Pool Code 71599	Pool Name Basin Dakota
Property Code 013592	Property Name Jicarilla K		Well Number 10E
OGRID No. 014591	Operator Name Merit Energy Company		Elevation 6930'

10 Surface Location

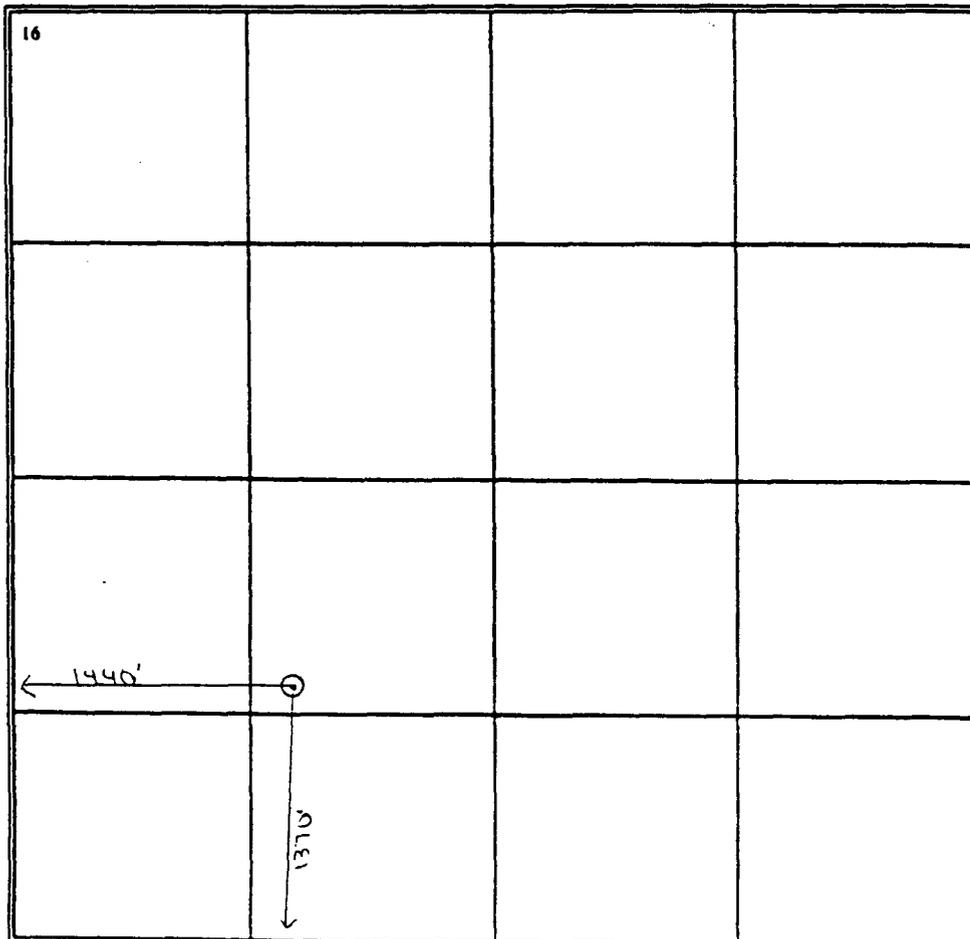
UL or lot no.	Section	Township	Range	Lot Ida	Foot from the	North/South Line	Foot from the	East/West Line	County
K	1	25N	5W		1370	South	1440	West	Rio Arriba

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Ida	Foot from the	North/South Line	Foot from the	East/West Line	County

12 Dedicated Acres 319.69	13 Joint or Infill N	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



17 OPERATOR CERTIFICATION

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

*Sheryl J. Carruth*  
 Signature  
 Sheryl J. Carruth  
 Printed Name  
 Regulatory Manager  
 Title  
 6-29-94  
 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.

\_\_\_\_\_  
 Date of Survey  
 Signature and Seal of Professional Surveyor:  
 \_\_\_\_\_  
 Certificate Number

# JICARILLA K 10E DAKOTA PRODUCTION

Unit K, Sec. 1, T-25N, R-5W

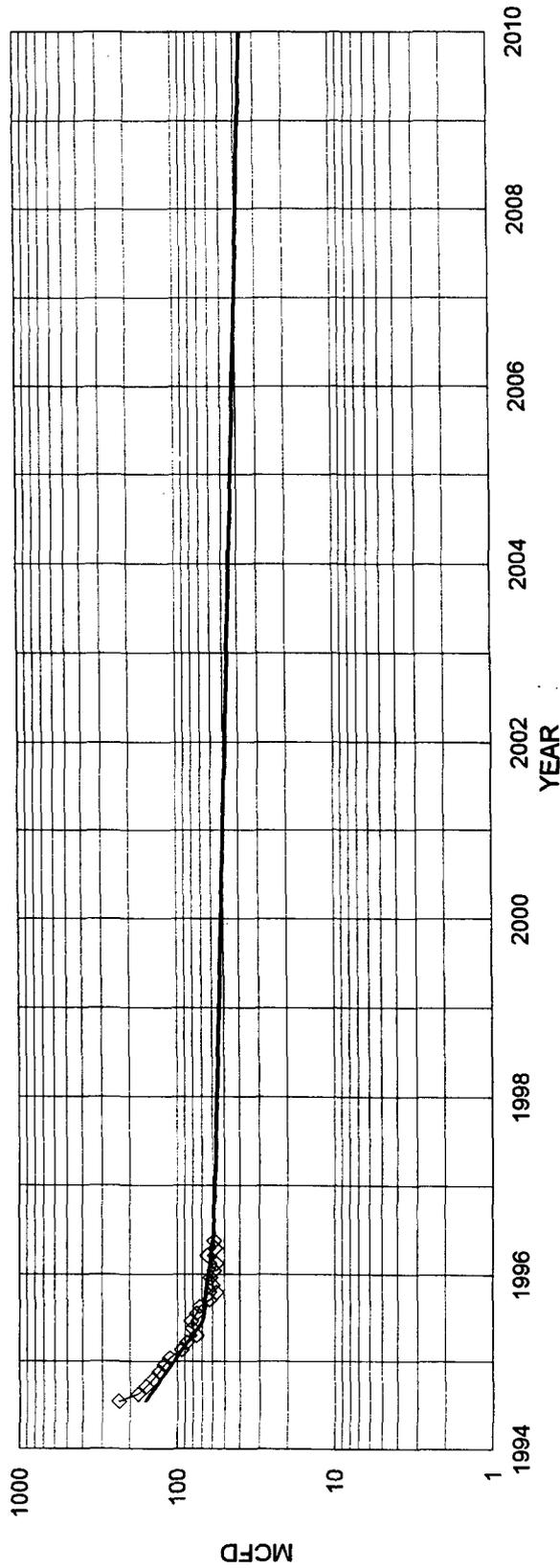
## ANNUAL MID-YEAR DAKOTA PRODUCTION RATES TO ABANDONMENT

@ 3.5 % Annual Decline

YEAR	Mid-Year Avg. MCFGPD	Mid-Year Avg. BOPD
1996	58	0.24
1997	56	0.23
1998	54	0.22
1999	52	0.21
2000	50	0.21
2001	49	0.20
2002	47	0.19
2003	45	0.19
2004	44	0.18
2005	42	0.17
2006	41	0.17
2007	39	0.16
2008	38	0.16
2009	36	0.15
2010	35	0.14
2011	34	0.14
2012	33	0.13
2013	32	0.13
2014	31	0.13
2015	29	0.12
2016	28	0.12
2017	27	0.11
2018	26	0.11
2019	26	0.10
2020	25	0.10
2021	24	0.10
2022	23	0.09
2023	22	0.09
2024	21	0.09
2025	21	0.08

PREPARED BY: PDB

**JICARILLA K 10E DAKOTA PRODUCTION  
SECTION 1K-25N-05W**



◇ DAKOTA MCFD — FIT MCFD

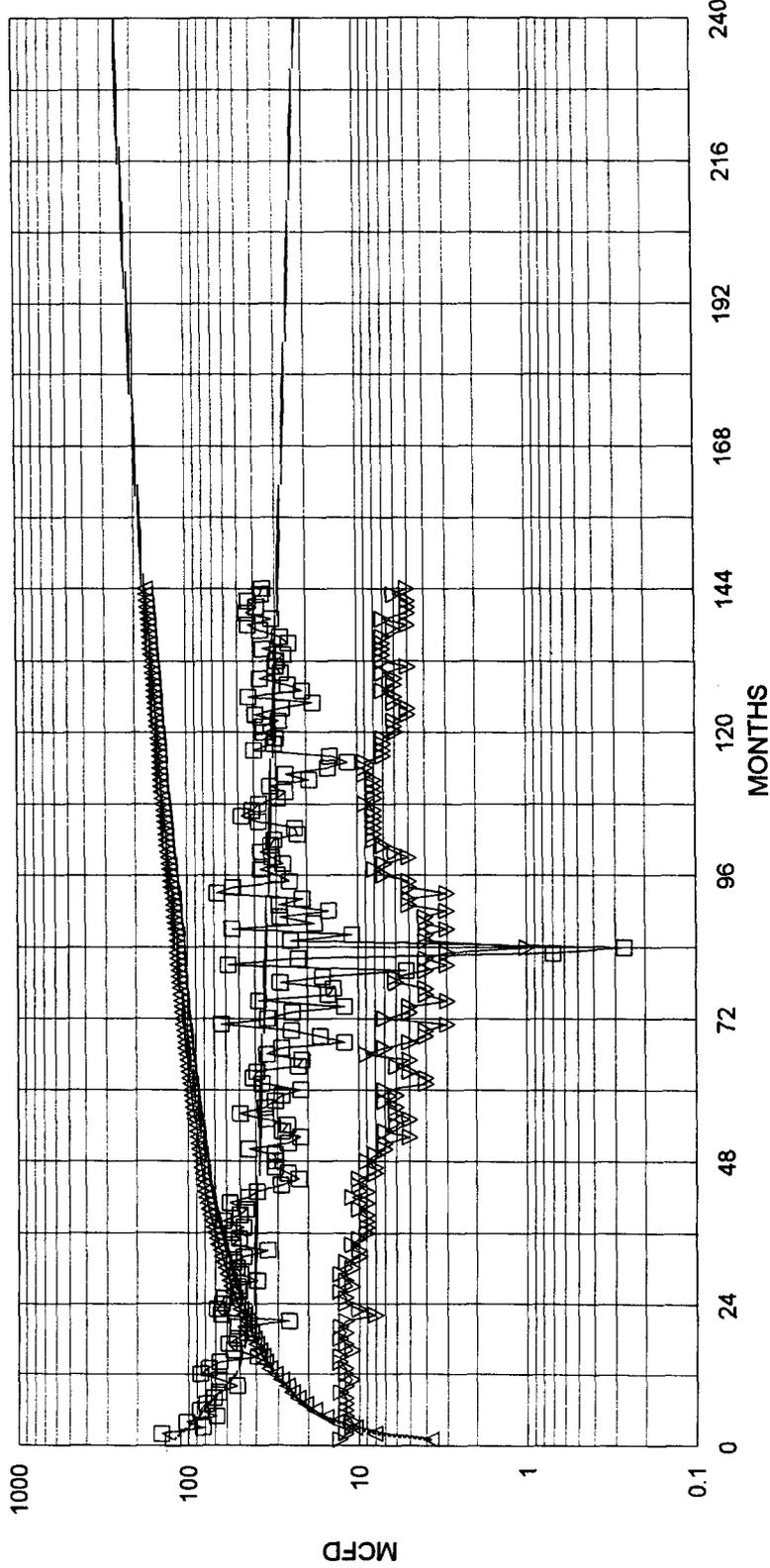
<b>DAKOTA HISTORICAL DATA:</b>		<b>1ST PROD: 7/94</b>	
OIL CUM:	0.27 MBO	9/196 Q1:	68 MCFD
GAS CUM:	66.1 MMCF	DECLINE RATE:	3.5% (EXPONENTIAL)
OIL YIELD:	0.0041 BBL/MCF		

\*1996 AVG IS FOR 2ND HALF OF YEAR

YEAR	MID-YEAR AVG. MCFD	MID-YEAR AVG. BOPD
1996*	68	0.24
1997	56	0.23
1998	54	0.22
1999	52	0.21
2000	50	0.21

CONTINUE DECLINE UNTIL ABANDONMENT

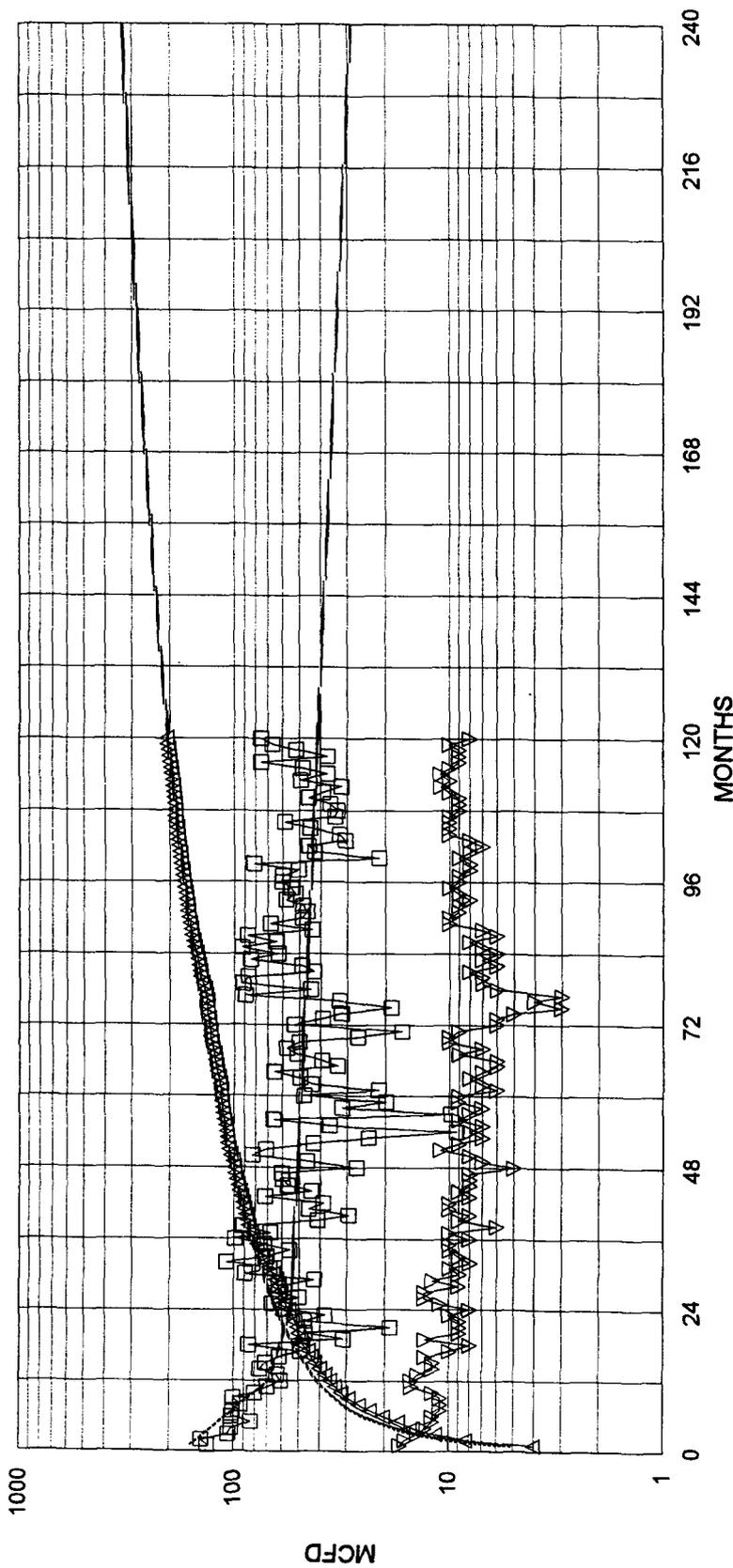
**NORMALIZED CHACRA PRODUCTION**  
**13 WELLS SINCE 1980; OFFSET TO JICARILLA K-LEASE; 25N-5W**



— FIT MCFD    □ NORMALIZED MCFD    ▲ NORM CUM MMCF  
 ▣ WELLS ON PRODUCTION    — FIT CUM MMCF

NORMALIZED AVG:		PRODUCTION DATA THROUGH 9/95	
321 MMCF EUR	130 MCFD IP	60.0% DECLINE, 1ST 12 MONTHS	
251 MMCF IN 20 YRS		20.0% DECLINE, NEXT 12 MONTHS	
15 MCFD E.L.		3.5% FINAL DECLINE	
0.00 BBL/MCF OIL YIELD			

**NORMALIZED MESAVERDE PRODUCTION  
17 WELLS SINCE 1982; OFFSET TO JIC. K LEASE (25N-5W)**



— FIT MCFD    □ NORMALIZED MCFD    ▲ NORM CUM MMCF  
 ▽ WELLS ON PRODUCTION    — FIT CUM MMCF

NORMALIZED AVG:	
423 MMCF EUR	172 MCFD IP
331 MMCF IN 20 YRS	60.0% DECLINE, 1ST 12 MONTHS
20 MCFD E.L.	20.0% DECLINE, NEXT 12 MONTHS
0.05 BBL/MCF OIL	3.5% FINAL DECLINE

PRODUCTION DATA THROUGH 9/95

