

DATE IN 6/23/97	SUSPENSE 7/14/97	ENGINEER DC	LOGGED BY KV	TYPE DHC
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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]

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

[A] Location - Spacing Unit - Directional Drilling

☐ NSL ☐ NSP ☐ DD ☐ SD

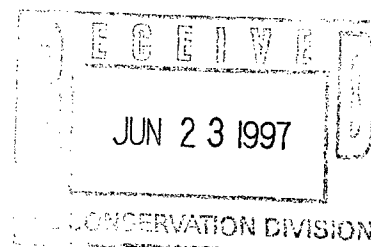
Check One Only for [B] and [C]

[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

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)

850' FNL & 1880' FEL
Sec. 2, 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. 11E

9. API Well No.

30-039-25395

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 Fracruning
☐ Water Shut-Off
☐ Conversion to Injection
☐ Dispose Water

(Note: Repon result of multiple completion on Wdi 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

14. I hereby certify that the foregoing is true and correct

Signed

Jerry W. Hoover

Title

Sr. Conservation Coordinator

Date

6/19/97

(This space for Federal or State office use)

Approved by

Title

for Chief, Lands and Mineral Resources

Date

JUN 30 1997

Conditions of approval if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

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

Conoco Inc.

10 Desta Dr. Ste 100W, Midland, Tx. 79705-4500

Operator

Address

Jicarilla K

11E

B - 2 - 25N - 5W

Rio Arriba

Lease

Well No

Unit Ltr Sec Twp Rge

County

OGRID NO. 005073 Property Code 18023 API NO. 30-039-25395 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)	4059-4085	5150-5551	7380-7546
3. Type of production (Oil or Gas)	Gas	Gas	Gas
4. Method of Production (Flowing or Artificial Lift)	Flow	Flow	Flow
5. Bottomhole Pressure	a. (Current)	a.	a.
Oil Zones - Artificial Lift: Estimated Current	867 psia	753 psia	817 psia
Gas & Oil - Flowing: Measured Current	b. (Original)	b.	b.
All Gas Zones: Estimated Or Measured Original	964 psia	1319 psia	2764 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	producing
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>	Date Rates Incremental Production by Subtraction -- See attached data	Date Rates Incremental Production by Subtraction -- See attached data	Date Rates
	Date Rates	Date Rates	Mid-Year Average Producing Rates -- See Attached Table
• If Producing, date and oil/gas/water rates of recent test (within 60 days)	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 #11E 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 1988, Hobbs, NM 88241-1988
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 30-039-25395		Pool Code 71599	Pool Name Basin Dakota
Property Code 013592	Property Name Jicarilla K		Well Number 11E
OGRID No. 014591	Operator Name Merit Energy Company		Elevation 6808'

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
B	2	25N	5W		850	North	1800	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

12 Dedicated Acres 318.80	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

16			<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>Signature Sheryl J. Carruth</p> <p>Printed Name Regulatory Manager</p> <p>Title 6-29-94</p> <p>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</p> <p>Signature and Seal of Professional Surveyor:</p>

JICARILLA K 11E DAKOTA PRODUCTION

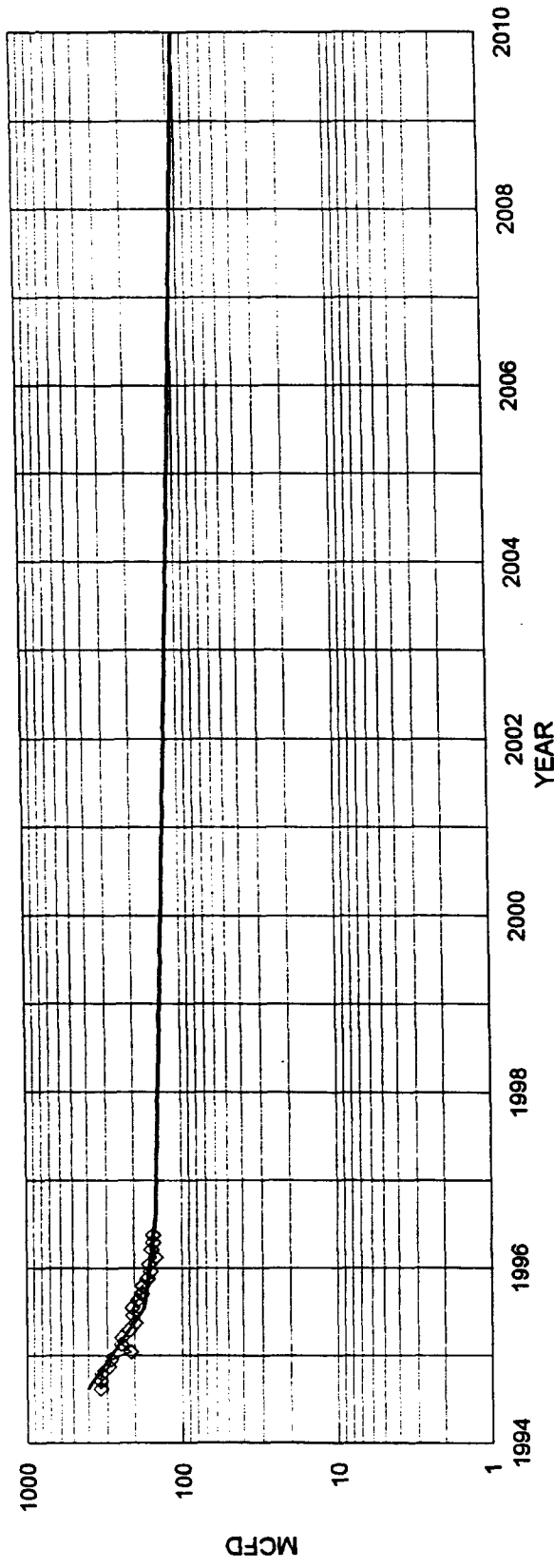
Unit B, Sec. 2, T-25N, R-5W

ANNUAL MID-YEAR DAKOTA PRODUCTION RATES TO ABANDONMENT

@ 3.5 % Annual Decline

YEAR	Mid-Year Avg. MCFGPD	Mid-Year Avg. BOPD
1996	145	0.65
1997	140	0.63
1998	135	0.61
1999	130	0.59
2000	126	0.57
2001	121	0.55
2002	117	0.53
2003	113	0.51
2004	109	0.49
2005	105	0.47
2006	102	0.46
2007	98	0.44
2008	95	0.43
2009	91	0.41
2010	88	0.40
2011	85	0.38
2012	82	0.37
2013	79	0.36
2014	76	0.34
2015	74	0.33
2016	71	0.32
2017	69	0.31
2018	66	0.30
2019	64	0.29
2020	62	0.28
2021	60	0.27
2022	57	0.26
2023	55	0.25
2024	53	0.24
2025	52	0.23
2026	50	0.22
2027	48	0.22
2028	46	0.21
2029	45	0.20
2030	43	0.19
2031	42	0.19
2032	40	0.18
2033	39	0.17
2034	37	0.17
2035	36	0.16
2036	35	0.16
2037	34	0.15
2038	32	0.15
2039	31	0.14
2040	30	0.14

**JICARILLA K 11E DAKOTA PRODUCTION
SECTION 2B-25N-05W**



◇ DAKOTA MCFD — FIT MCFD

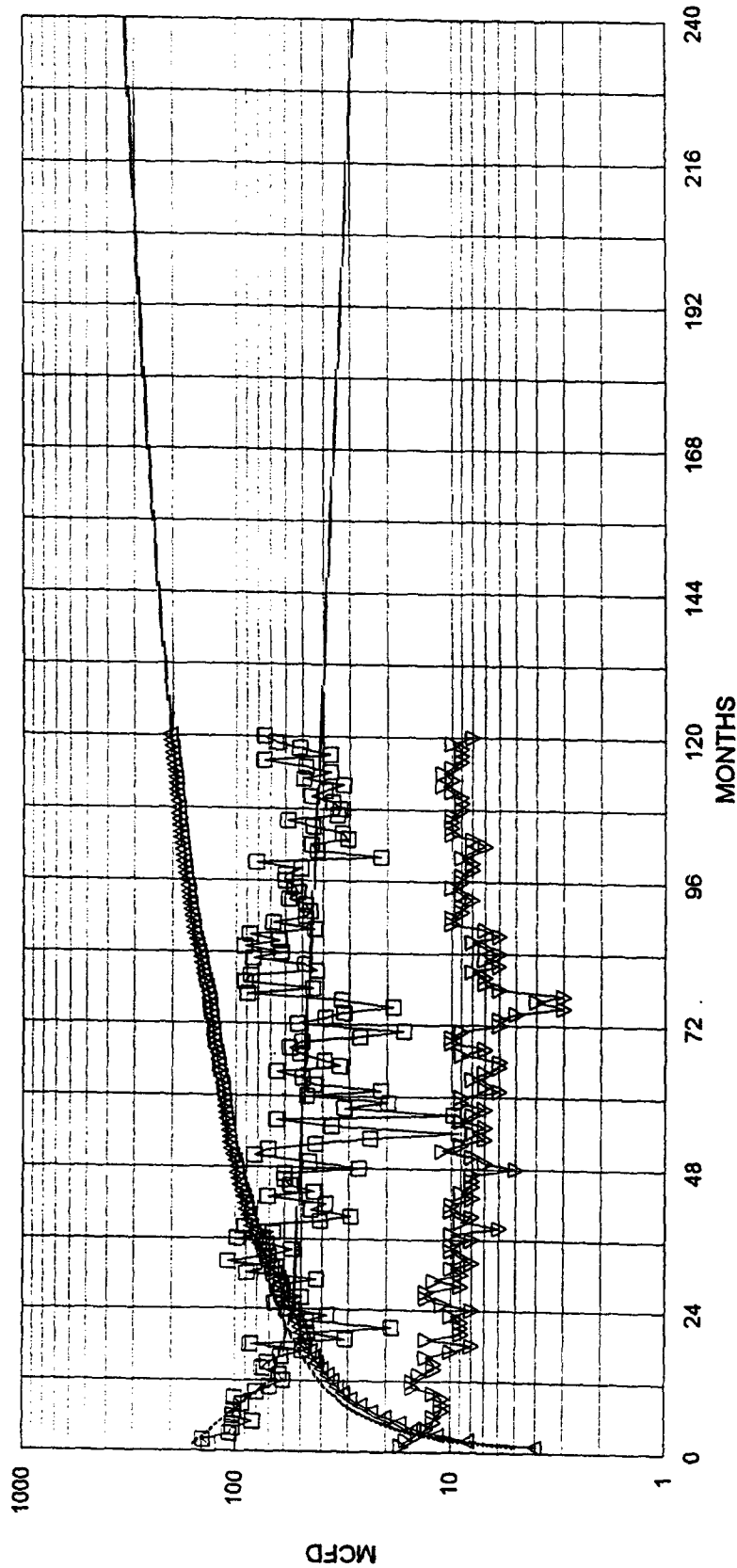
YEAR	MID-YEAR AVG. MCFD	MID-YEAR AVG. BOPD
1996*	145	0.65
1997	140	0.63
1998	135	0.60
1999	130	0.58
2000	125	0.56

CONTINUE DECLINE UNTIL ABANDONMENT

DAKOTA HISTORICAL DATA:	1ST PROD: 7/94	DAKOTA PROJECTED DATA
OIL CUM: 0.64 MBO		8/1/96 Q1: 146 MCFD
GAS CUM: 143.4 MMCF		DECLINE RATE: 3.5% (EXPONENTIAL)
OIL YIELD: 0.0045 BBL/MCF		

*1996 AVG IS FOR 2ND HALF OF YEAR

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

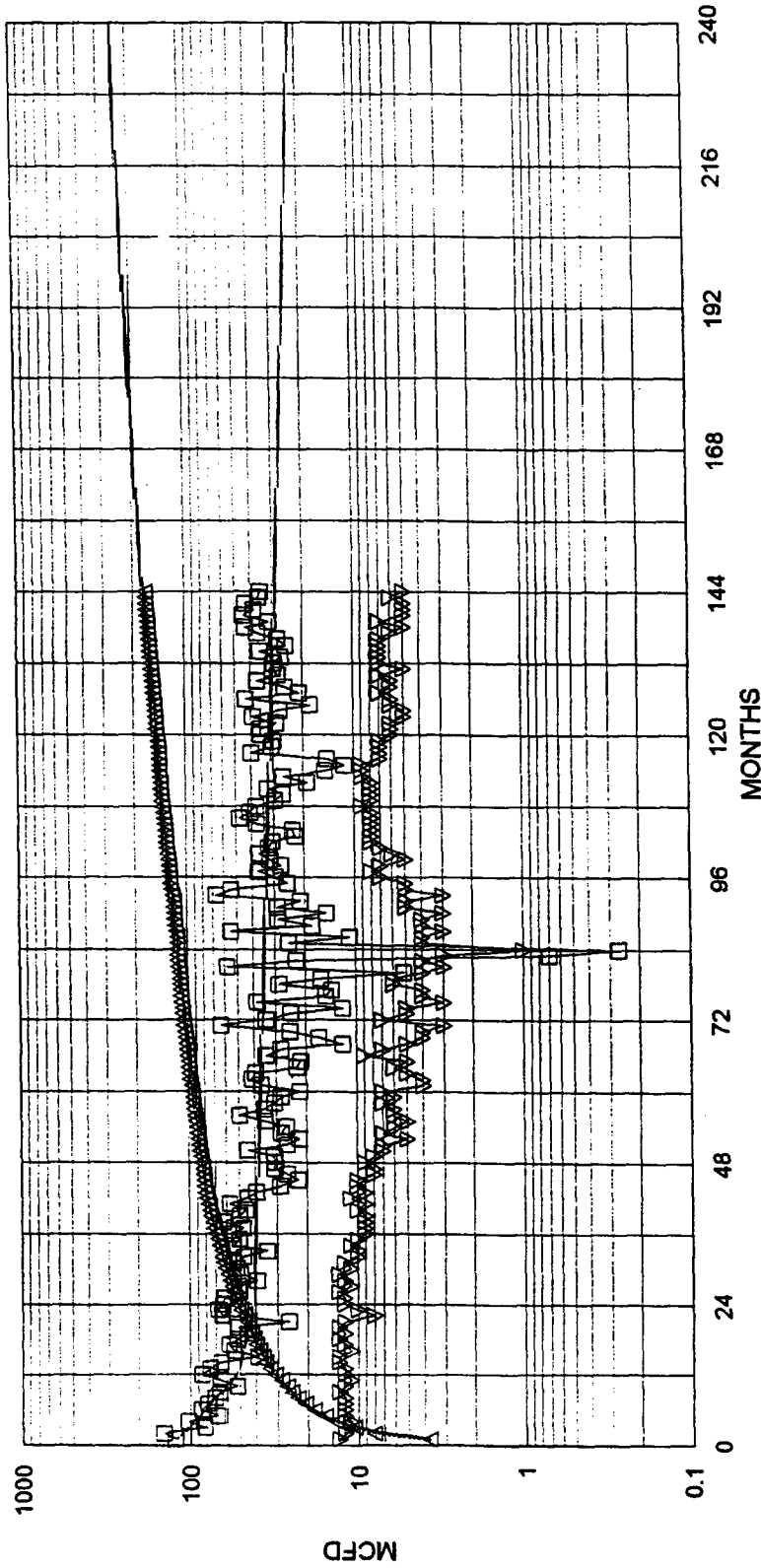


— FIT MCFD □ NORMALIZED MCFD △ NORM CUM MMCF
▽ WELLS ON PRODUCTION — FIT CUM MMCF

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

PRODUCTION DATA THROUGH 9/95

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



NORMALIZED AVG:

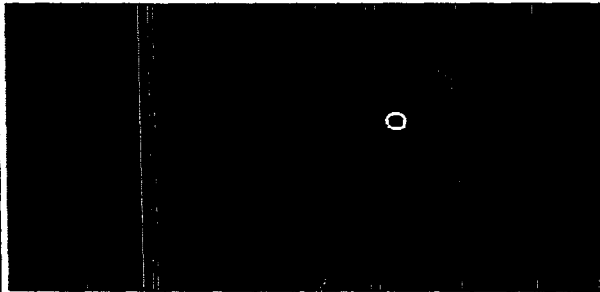
321 MMCF EUR
251 MMCF IN 20 YRS
15 MCFD E.L.
0.00 BBL/MMCF OIL YIELD

130 MCFD IP
60.0% DECLINE, 1ST 12 MONTHS
20.0% DECLINE, NEXT 12 MONTHS
3.5% FINAL DECLINE

PRODUCTION DATA THROUGH 9/95

JICARILLA "K" 11E

OFFSET OPERATORS

34 Burlington Resources T-26N, R-5W	35 Burlington Resources	36 Burlington Resources
3 Conoco	 Conoco	1 Conoco