



STATE OF NEW MEXICO  
ENERGY, MINERALS and NATURAL RESOURCES DIVISION  
OIL CONSERVATION DIVISION  
AZTEC DISTRICT OFFICE

1000 RIO BRAZOS ROAD  
AZTEC, NEW MEXICO 87410  
(505) 334-6178

BRUCE KING  
GOVERNOR

ANITA LOCKWOOD  
CABINET SECRETARY

1000 RIO BRAZOS ROAD  
AZTEC, NEW MEXICO 87410  
(505) 334-6178

Date: 9/21/95

Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87504-2088

RE: Proposed MC \_\_\_\_\_  
Proposed NSL \_\_\_\_\_  
Proposed WFX \_\_\_\_\_  
Proposed NSP \_\_\_\_\_

Proposed DHC X \_\_\_\_\_  
Proposed SWD \_\_\_\_\_  
Proposed PMX \_\_\_\_\_  
Proposed DD \_\_\_\_\_

Gentlemen:

I have examined the application received on 9/13/95  
for the Amoco Jicarilla Cont. 146 #13E  
OPERATOR LEASE & WELL NO.

B-9-25N-5W and my recommendations are as follows:  
UL-S-T-R

Approve ..  
The premises are calculated incorrectly but the  
well still qualifies

Yours truly,

[Signature]



**Southern**

**Rockies**

**Business**

**Unit**

September 5, 1995

Mr. William J. LeMay, Director  
New Mexico Oil Conservation Division  
2040 S. Pacheco Street  
P. O. Box 6429  
Santa Fe, NM 87505

**Application for Exception to Rule 303-C**  
**Downhole Commingling**  
**Jicarilla Contract 146 13E**  
**790' FNL & 1580' FEL, Unit B Section 9-T25N-R5W**  
**Blanco Mesaverde and Basin Dakota Pools**  
**Rio Arriba County, New Mexico**

**RECEIVED**  
SEP 13 1995  
**OIL CON. DIV.**  
**DIST. 3**

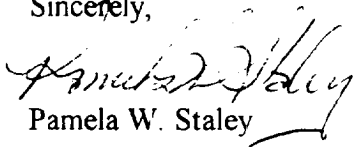
Amoco Production Company hereby requests administrative approval to downhole commingle production from the Blanco Mesaverde and Basin Dakota Pools in the Jicarilla Contract 146 13E referenced above. The Jicarilla Contract 146 13E was originally a dual completion in the Mesaverde and Dakota formations. This well has a marginal Mesaverde formation which is being produced dually with the Dakota which if left as a dual completion, the marginal zone would be shut-in in the near future. We plan to complete the well with both the Mesaverde and Dakota formations being downhole commingled in the wellbore. The two zones are expected to produce at a total commingled rate of about 244 MCFD with 4 BCPD. The ownership (WI, RI, ORI) of these pools is identical in this wellbore. Downhole commingling will offer an economical method of production while protecting against reservoir damage, waste of reserves and violation of correlative rights. Offset operators to this well will receive a copy of this application by certified mail.

The allocation method that we plan to use for this commingled well is as follows. Since these formations have been producing for some time, we have a good historical representation of the production by formation. Based on historical production we recommend that the allocation for gas production be 37% from the Mesaverde formation and 63% from the Dakota formation. The Dakota and Mesaverde formations have historically produced small amounts of liquids in this well. Based on that fact, we propose to allocate 50% of the liquid production to the Mesaverde formation and 50% of the liquid production to the Dakota formation. The actual commercial value of the commingled production will not be less than the sum of the values of the production from each of the common sources of supply.

Attached to aid in your review are plats showing the location of the well and offset wells in the same formations, a historical production plot and a C-102 for each formation. This spacing unit is on a federal lease and a copy of the application will be sent to the BLM as required.

Should you have questions concerning this matter, please contact me at (303) 830-5344.

Sincerely,



Pamela W. Staley

Enclosures

cc: Steve Smethie  
Patty Haefele

Frank Chavez, Supervisor  
NMOCD District III  
1000 Rio Brazos Road  
Aztec, NM 87410

Robert Kent  
Bureau of Land Management  
435 Montano NE  
Albuquerque, NM 87107

## **Application for Exception to Rule 303: SEGREGATION OF PRODUCTION FROM POOLS**

### **Requirements**

- (1) Name and address of the operator:

Amoco Production Company  
P.O. Box 800  
Denver, CO 80201

- (2) Lease name, well number, well location, name of the pools to be commingled:

Lease Name:	Jicarilla Contract 146
Well Number:	13E
Well Location:	790' FNL & 1580' FEL Unit B Section 9-T25N-R5W Rio Arriba County, New Mexico
Pools Commingled:	Basin Dakota Blanco Mesaverde

- (3) A plat of the area showing the acreage dedicated to the well and the ownership of all offsetting leases.

Attached

- (4) A current (within 30 days) 24-hour productivity test on Division Form C-116 showing the amount of oil, gas and water produced from each zone.

The Mesaverde produced an average stabilized rate of 60 MCFD and 0.1 BCPD. The Dakota zone produced at an average rate of about 104 MCFD and 0.2 BCPD.

- (5) A production decline curve for both zones showing that for a period of at least one year a steady rate of decline has been established for each zone which will permit a reasonable allocation of the commingled production to each zone for statistical purposes.

Basin Dakota Completion:	Historical production curve attached.
Blanco Mesaverde Completion:	Historical production curve attached.

- (6) Estimated bottomhole pressure for each zone. A current (within 30 days) measured bottom hole pressure for each zone capable of flowing.

Bottomhole pressures were estimated from OCD Packer Leakage Tests. Shut-in bottomhole pressure in the Mesaverde formation is calculated to be 880 PSIG while estimated bottomhole pressure in the Dakota formation is 1193 PSIG. Therefore these pressures meet the pressure differential rule under article 303-C (b)(vi). See attached calculation and packer leakage test results.

- (7) A description of the fluid characteristics of each zone showing that the fluids will not be incompatible in the wellbore.

The fluids in the Mesaverde have no abnormal components that would prohibit commingling, or promote the creation of emulsions or scale when commingled with the Dakota formation.

- (8) A computation showing that the value of the commingled production will not be less than the sum of the values of the individual streams:

The BTU content of the produced streams are very similar and as such, we would expect the commingled production to have the same value as the sum of the individual streams.

- (9) A formula for the allocation of production to each of the commingled zones and a description of the factors or data used in determining such formula:

Based on historical production we recommend that the allocation for gas production be 37% from the Mesaverde formation and 63% from the Dakota formation. The Dakota and Mesaverde formations have historically produced small amounts of liquids in this well. Based on that fact, we propose to allocate 50% of the liquid production to the Mesaverde formation and 50% of the liquid production to the Dakota formation. The actual commercial value of the commingled production will not be less than the sum of the values of the production from each of the common sources of supply.

- (10) A statement that all offset operators and, in the case of a well on federal land, the United States Bureau of Land Management, have been notified in writing of the proposed commingling.

BLM will receive a copy of this application by certified mail. The offsetting operators listed on the attached sheet will receive a copy of this application by certified mail.

All distances must be from the outer boundaries of the Section.

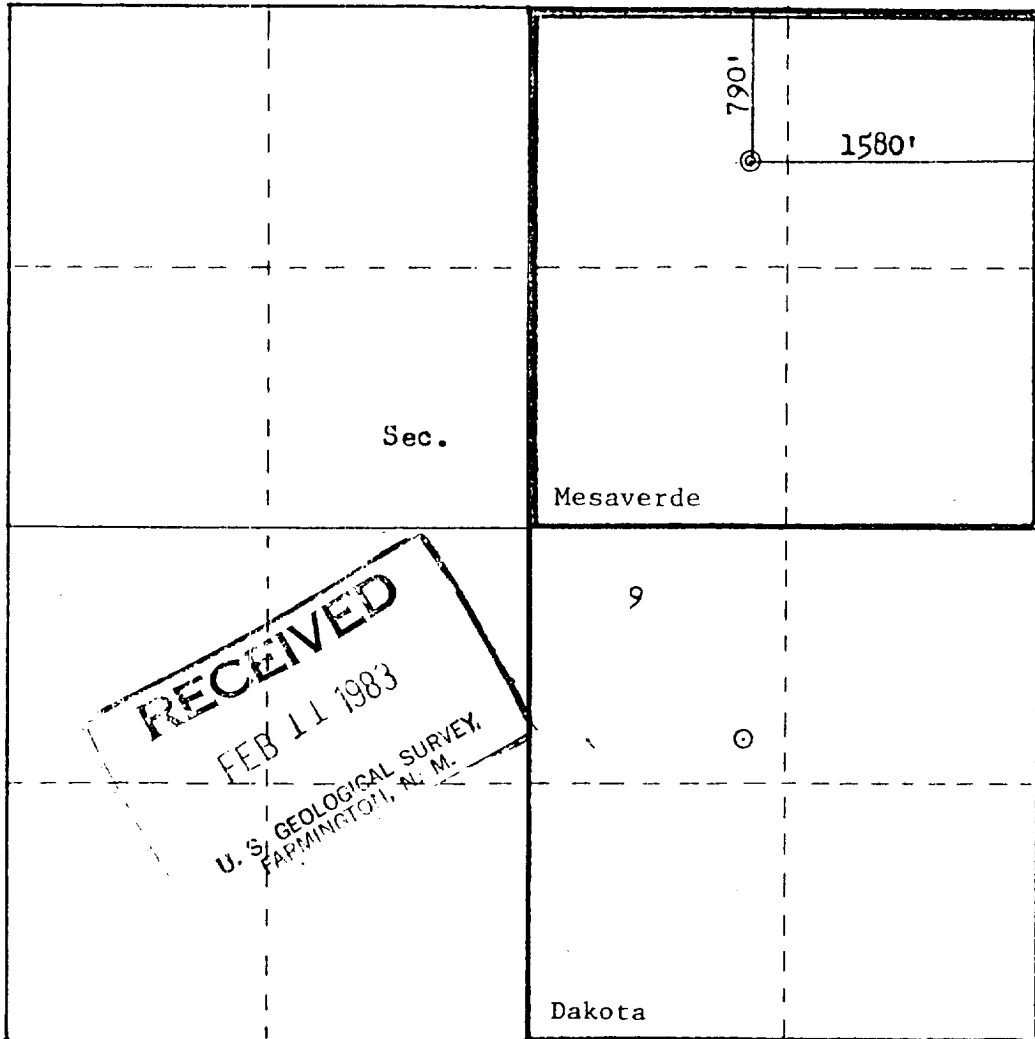
Operator <b>AMOCO PRODUCTION COMPANY</b>			Lease <b>JICARILLA CONTRACT 146</b>		Well No. <b>13E</b>
Unit Letter <b>B</b>	Section <b>9</b>	Township <b>25N</b>	Range <b>5W</b>	County <b>Rio Arriba</b>	
Actual Footage Location of Well: <b>790</b> feet from the <b>North</b> line and <b>1580</b> feet from the <b>East</b> line					
Ground Level Elev: <b>6704</b>	Producing Formation <b>Mesaverde / Dakota</b>		Pool <b>Gonzales MV / Basin Dakota</b>		Dedicated Acreage: <b>160 / 320</b> Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure 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 interests of all owners been consolidated by communization, 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 communization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



Scale: 1"=1000'

<b>CERTIFICATION</b>	
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.	
<i>Dale H. Shoemaker</i>	
Name	D.H. SHOEMAKER
Position	DISTRICT ENGINEER
Company	AMOCO PRODUCTION COMPANY
Date	JANUARY 17, 1983
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	October 27, 1982
Registered Professional Engineer and Land Surveyor	<i>Fred E. Kerr Jr.</i> Fred E. Kerr Jr.
Certificate No.	3950

26N-5W

WELL: 2  
LEASE: JICARILLA-147  
OPERATOR: PAN AMERICAN  
API: 300390615700  
PROD. FORM:DKOT

WELL: 4  
LEASE: JICARILLA CONTR 147  
OPERATOR: PAN AMERICAN  
API: 300392013300  
PROD. FORM:DKOT

WELL: 19-E  
LEASE: JICARILLA CONTRACT  
OPERATOR: AMOCO PROD  
API: 300382217800  
PROD. FORM:DKOT

WELL: 19  
LEASE: JICARILLA 146  
OPERATOR: PAN AMERICAN  
API: 300392021100  
PROD. FORM:DKOT

WELL: 21  
LEASE: JICARILLA-146  
OPERATOR: PAN AMERICAN  
API: 300392033400  
PROD. FORM:DKOT ,CHCR

WELL: 17-E  
LEASE: JICARILLA CONTRACT  
OPERATOR: AMOCO PROD  
API: 300392217500  
PROD. FORM:DKOT

WELL: 23  
LEASE: AXI APACHE J  
OPERATOR: CONTINENTAL OIL  
API: 300392043900  
PROD. FORM:MVRD ,CHCR

WELL: NO 1  
LEASE: JICARILLA CONTR 147  
OPERATOR: PAN AMERICAN PETRO CORP  
API: 300390612100  
PROD. FORM:DKOT

WELL: 10-E  
LEASE: JICARILLA CONTRACT  
OPERATOR: AMOCO PROD  
API: 300392217800  
PROD. FORM:DKOT

WELL: 22-E  
LEASE: JICARILLA CONTRACT  
OPERATOR: AMOCO PROD  
API: 300392218000  
PROD. FORM:DKOT

WELL: 18  
LEASE: AXI-APACHE J  
OPERATOR: CONTINENTAL OIL  
API: 300392041900  
PROD. FORM:MVRD ,CHCR

WELL: 23  
LEASE: JICARILLA CONTRACT  
OPERATOR: AMOCO PROD  
API: 300392056800  
PROD. FORM:MVRD

WELL: 13-E  
LEASE: JICARILLA CONTRACT 146 13  
OPERATOR: AMOCO PRODUCTION CO  
API: 300392318000  
PROD. FORM:MVRD

WELL: 22  
LEASE: JICARILLA-146  
OPERATOR: PAN AMERICAN  
API: 300392033500  
PROD. FORM:PCCF ,DKOT

25N-5W

WELL: 1-E  
LEASE: JICARILLA CONTRACT  
OPERATOR: AMOCO PROD  
API: 300392234200  
PROD. FORM:DKOT

WELL: 7  
LEASE: JICARILLA-147  
OPERATOR: AMOCO PROD  
API: 300392192800  
PROD. FORM:DKOT

WELL: 24  
LEASE: AXI APACHE J  
OPERATOR: CONTINENTAL OIL  
API: 300392044000  
PROD. FORM:MVRD ,CHCR

WELL: 13  
LEASE: JICARILLA 146  
OPERATOR: PAN AMERICAN  
API: 300390608300  
PROD. FORM:DKOT

WELL: NO 13R  
LEASE: JICARILLA CONTRACT 146  
OPERATOR: AMOCO PRODUCTION CO  
API: 300392356700  
PROD. FORM:DKOT

WELL: 10  
LEASE: JICARILLA-F  
OPERATOR: AMERADA PET  
API: 300398233900  
PROD. FORM:GRRS ,DKOT

WELL: 16  
LEASE: JICARILLA APACHE F  
OPERATOR: AMERADA MESS CORP  
API: 300392525600  
PROD. FORM:DKOT

WELL: 13  
LEASE: JICARILLA-148  
OPERATOR: PAN AMERICAN  
API: 300390604200  
PROD. FORM:DKOT

WELL: 9  
LEASE: JICARILLA-APACHE-F  
OPERATOR: AMERADA PET  
API: 300390599600  
PROD. FORM:GRRS ,GALLP ,DKOT

36° 23' 33" N  
13,218,217.79 FT. N

36° 23' 33" N  
13,218,217.79 FT. N

All geological and geophysical data, including the interpretation thereof, appearing on this map is the private and confidential property of Amoco Production Company. The publication or reproduction thereof without the written permission of said Company is strictly prohibited.

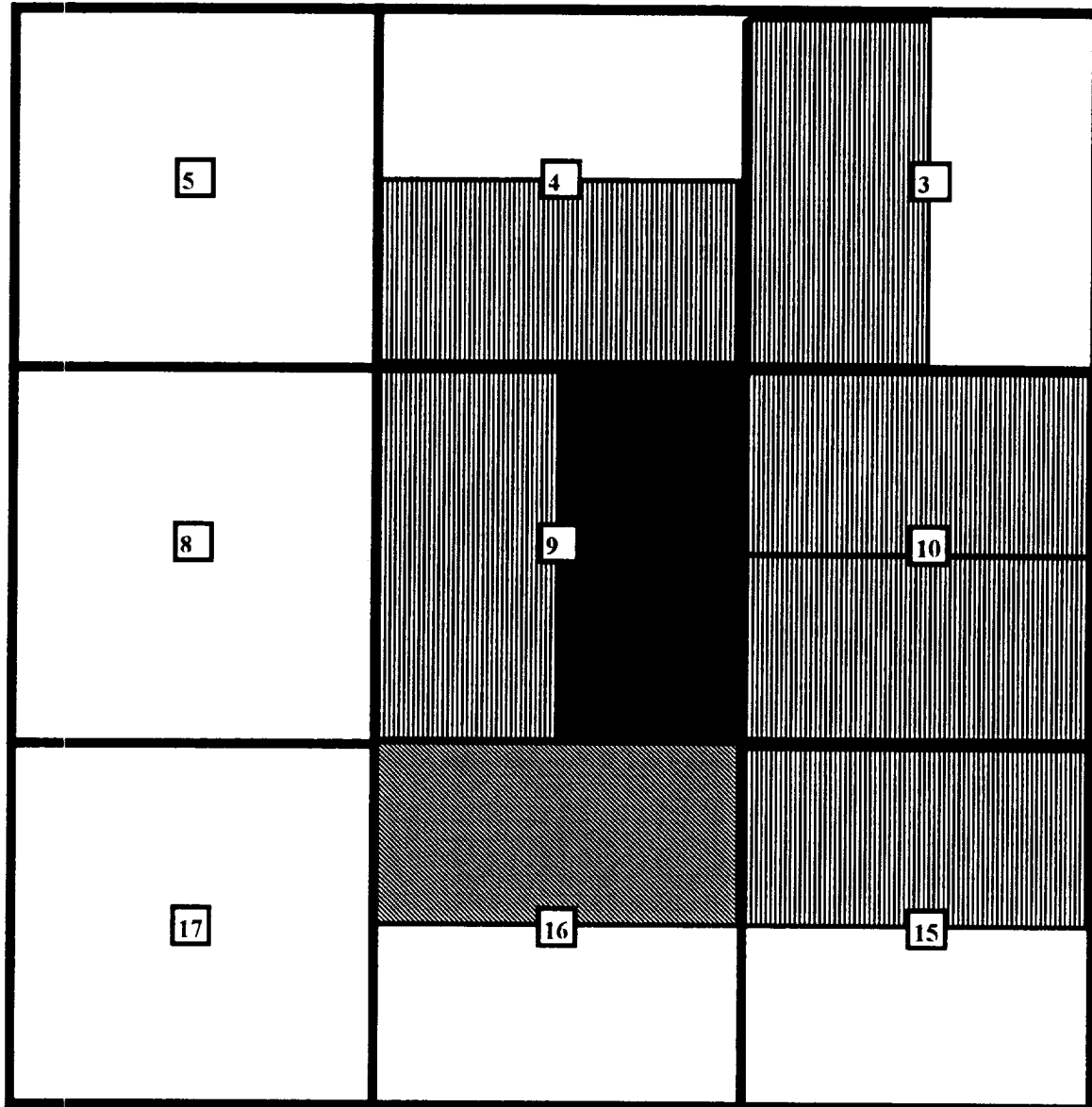


AMOCO PRODUCTION COMPANY  
PLAT MAP  
Jicarilla Contract 146-13E Sec. 9-T25N-R05W  
Rio Arriba New Mexico

SCALE 1 IN. = 2,000 FT. JUL 14, 1995

**AMOCO PRODUCTION COMPANY OFFSET OPERATOR PLAT**

**Jicarilla Contract 146 13E  
790' FNL & 1580' FEL  
Unit B Section 9-T25N-R5W  
Basin Dakota Pool**



**SPACING UNIT TO BE DOWNHOLE COMMINGLED**



**AMOCO PRODUCTION COMPANY**

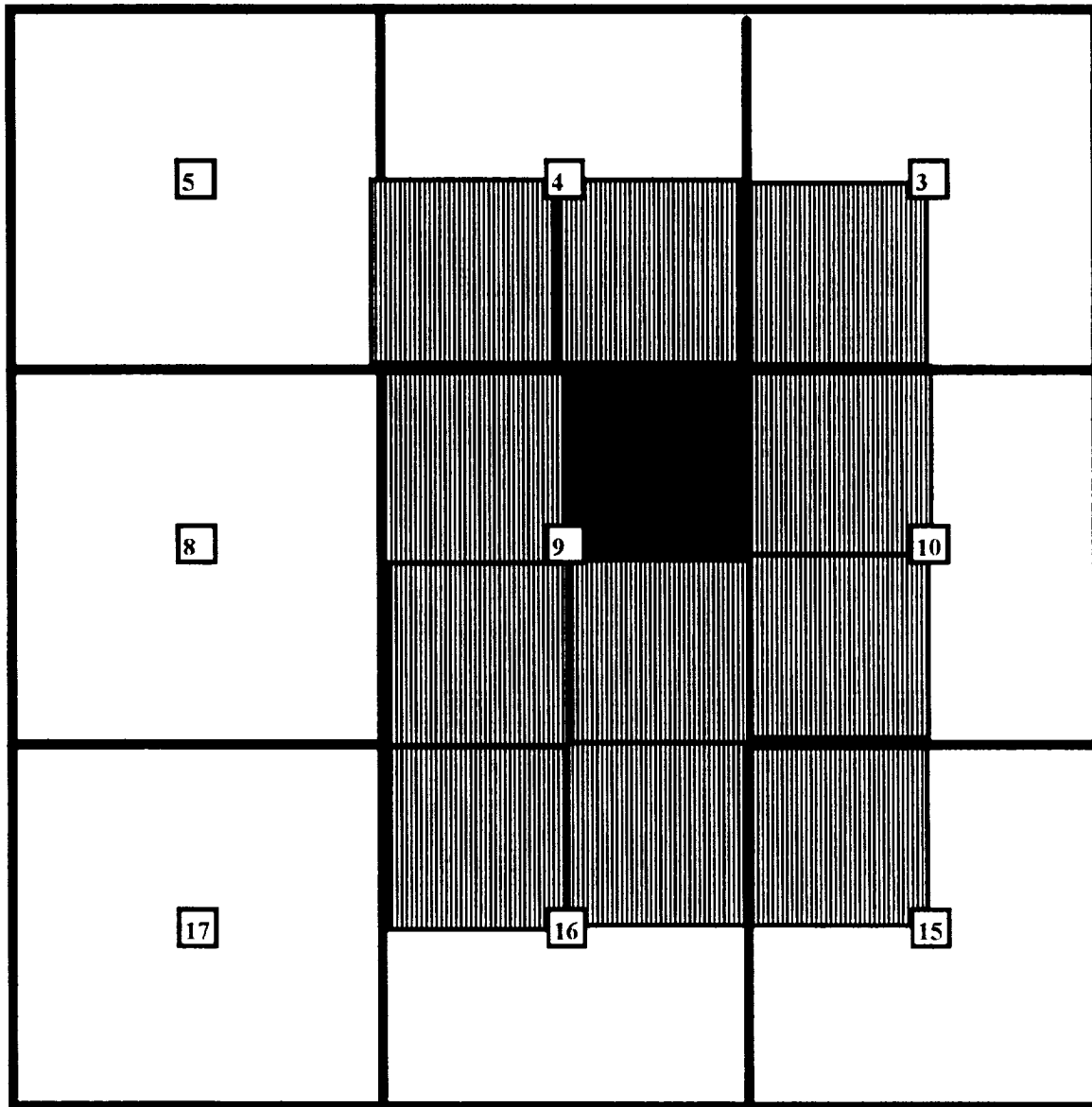


**AMERADA HESS CORP**



AMOCO PRODUCTION COMPANY OFFSET OPERATOR PLAT

Jicarilla Contract 146 13E  
790' FNL & 1580' FEL  
Unit B Section 9-T25N-R5W  
Blanco Mesaverde Pool



SPACING UNIT TO BE DOWNHOLE COMMINGLED

AMOCO PRODUCTION COMPANY

LIST OF ADDRESSES FOR OFFSET OPERATORS

Jicarilla Contract 146 13 E

1 Amerada Hess, Corp.  
P.O. Box 2040  
Tulsa, Ok 74102

Chart1

Well: JICARILLA CONT 146 013E-DK (84608201)

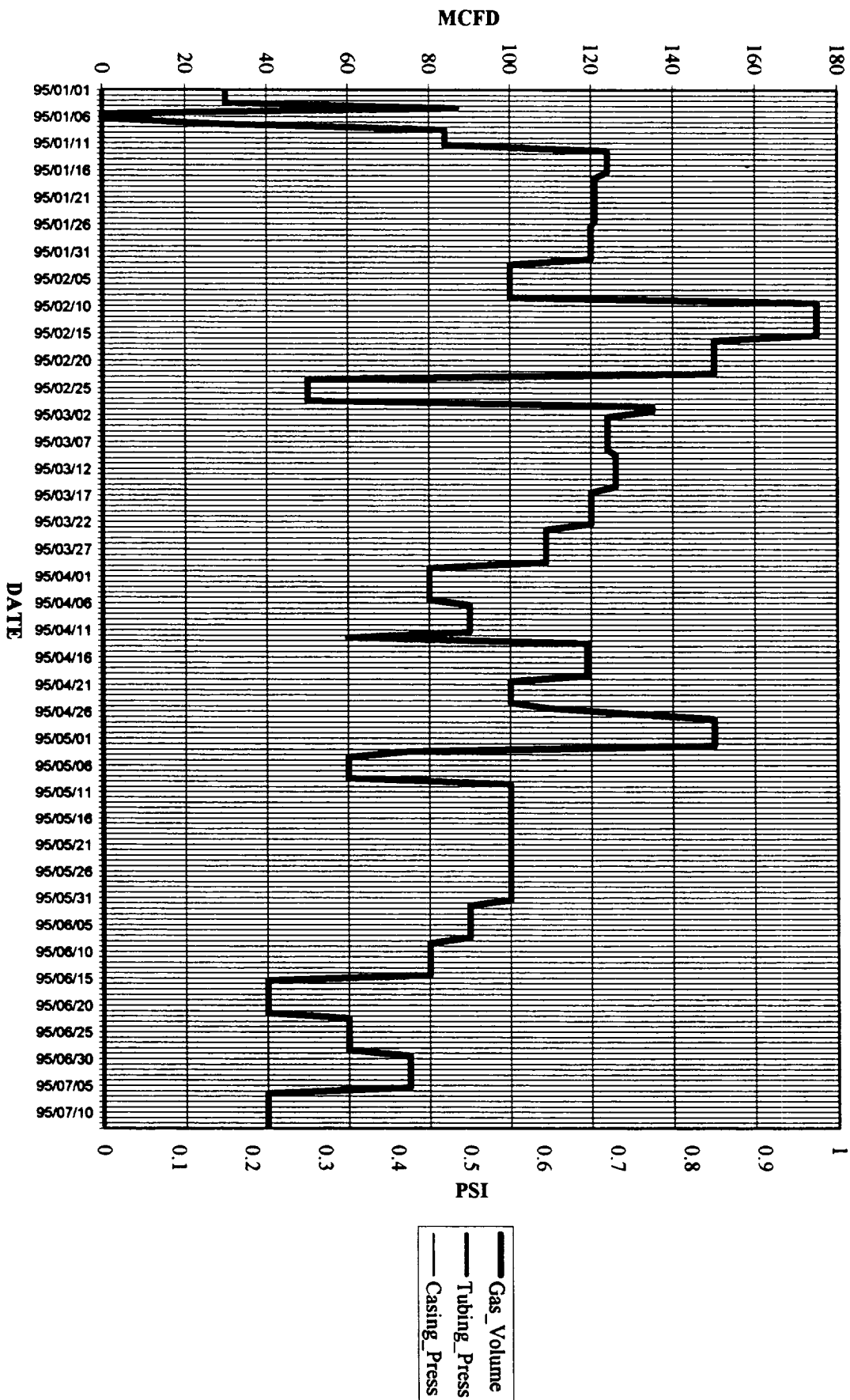
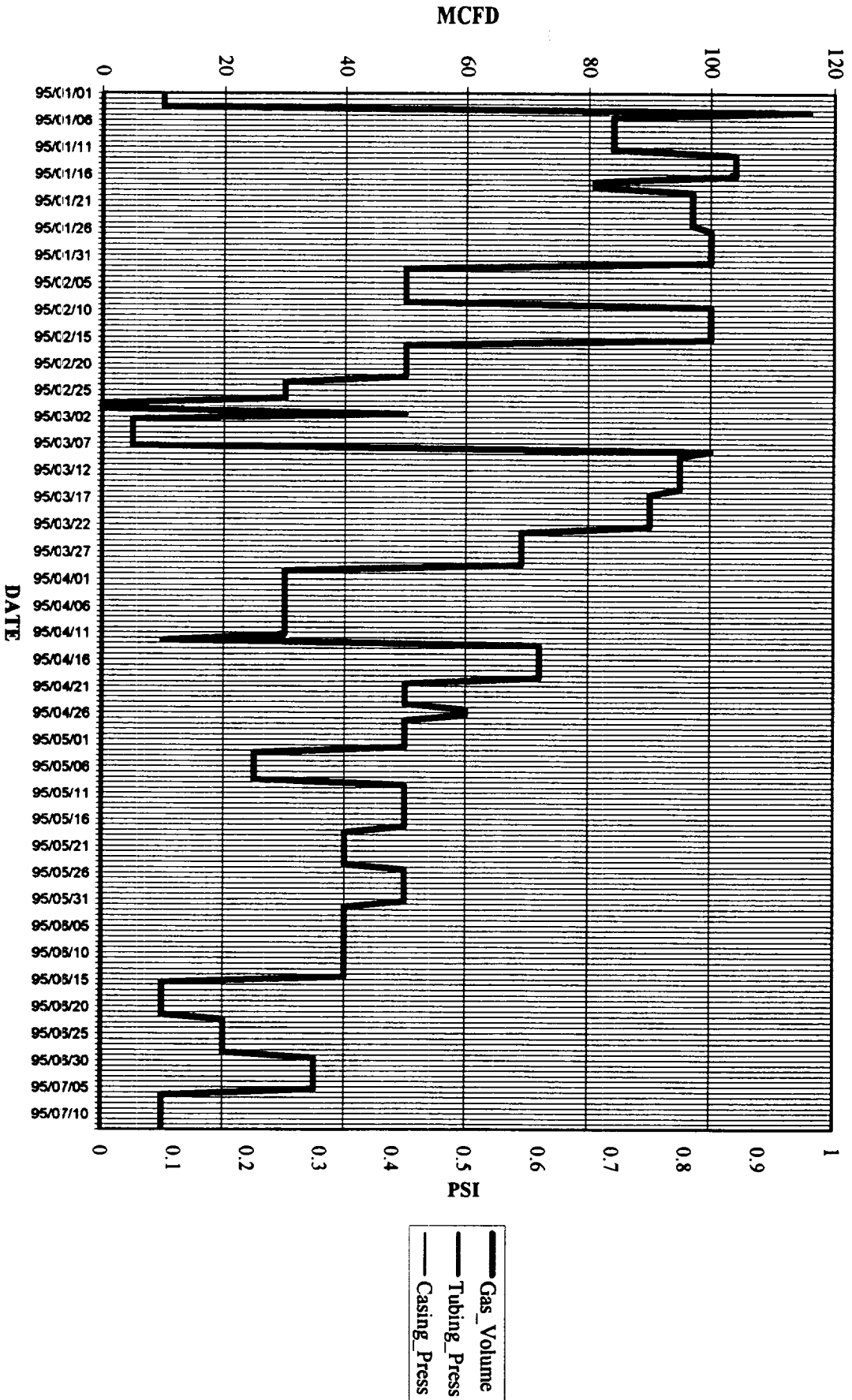


Chart1

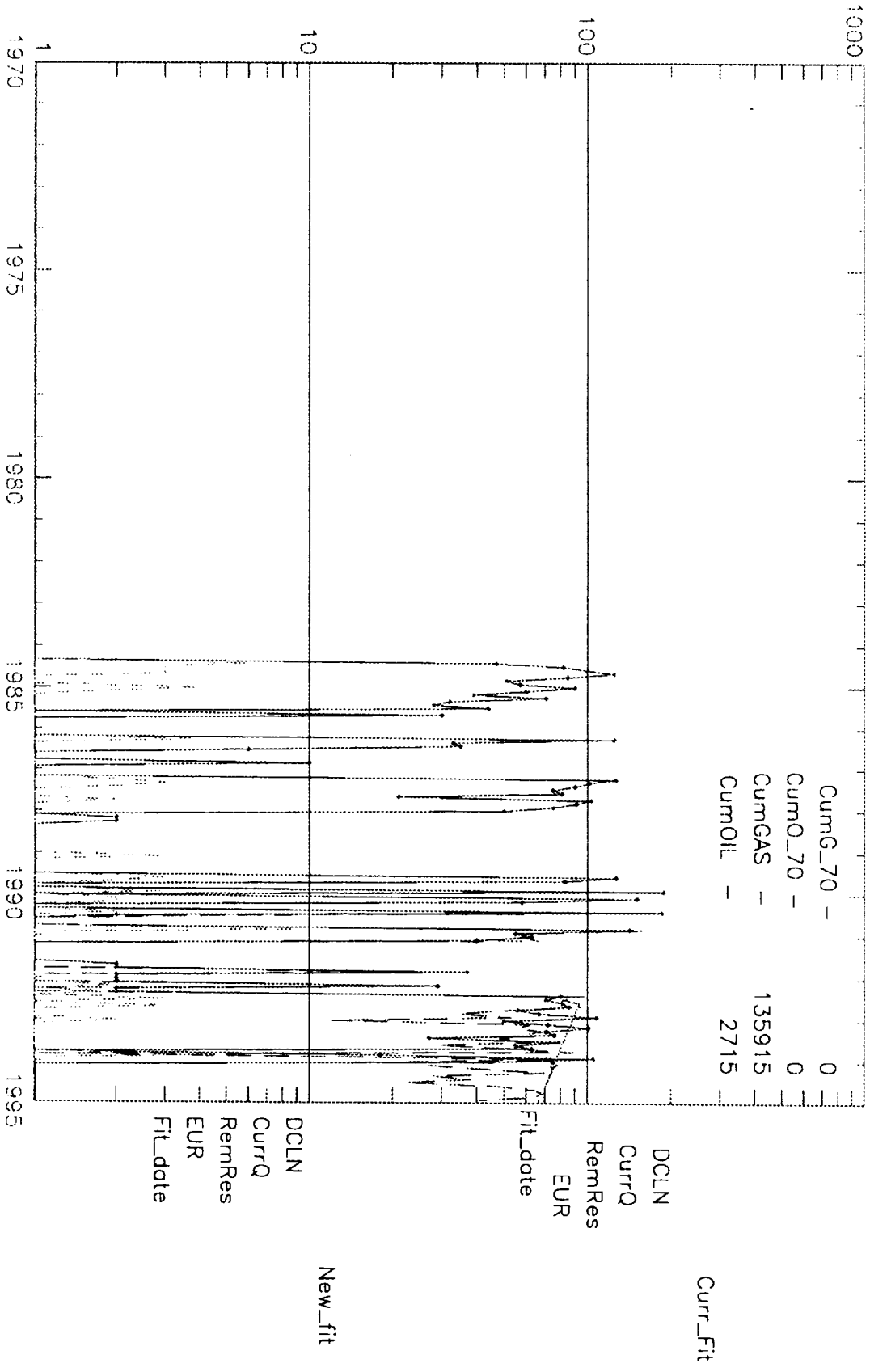
Well: JICARILLA CONT 146 013E-MV (84608202)



JICARILLA CONTRACT 146 13E  
300392316000MV B092505-013EMV

Operator- AMOCO PRODUCTION CO  
APC\_WI - 1.0000000

Engr: zhab0b



***ESTIMATED BOTTOMHOLE PRESSURES BY FORMATION***  
**JICARILLA CONTRACT #146-13E**

MV Perforations at 5146-5354' midperf at 5250'  
DK Perforations at 7125-7330' midperf at 7228'

11/90 shut in pressures --- MV = 440 PSIG  
DK = 615 PSIG

GRADIENT = 0.08 PSI/FT

MV BHP = 440 PSIG + 5250' X 0.08 PSIG  
= 880 PSIG

DK BHP = 750 PSIG + 7228' X 0.08 PSIG  
= 1193 PSIG

880 PSIG / 1193 PSIG = 74%      WHICH MEETS THE >50% RULE

## OIL CONSERVATION DIVISION

## NORTHWEST NEW MEXICO PACKER-LEAKAGE TEST

Operator: AMOCO PRODUCTION COMPANY Lease/Well #: JIC CONTRACT 146 13E

Location of Well: ~~8092505~~ Meter #: 85796 RTU: 1-194-01 County: RIO ARRI

	NAME RESERVOIR OR POOL		TYPE PROD	METHOD PROD	MEDIUM PROD
UPR COMP	BLANCO MESAVERDE	85797	GAS	FLOW	TBG
LWR COMP	BASIN DAKOTA	85796	GAS	FLOW	TBG

## PRE-FLOW SHUT-IN PRESSURE DATA

	Hour/Date Shut-In	Length of Time Shut-In	SI Press. PSIG	Stabilized
UPR COMP	11/19/90	72 Hours	440	No
LWR COMP	11/19/90	72 Hours	615	Yes

FLOW TEST DATE NO.1

Commenced at (hour,date)\*

Zone Producing (Upr/Lwr)

TIME (hour, date)	LAPSED TIME SINCE*	PRESSURE		Prod Temp.	REMARKS
		Upper	Lower		
11/19/90	Day 1	334	280		Both Zones SI
11/20/90	Day 2	435	520		Both Zones SI
11/21/90	Day 3	462	614		Both Zones SI
11/22/90	Day 4	440	615		flowed lower zone
11/23/90	Day 5	441	322		
11/24/90	Day 6	444	238		

Production rate during test

Oil: \_\_\_\_\_ BOPD based on \_\_\_\_\_ BBLs in \_\_\_\_\_ Hrs Grav GOR

Gas: \_\_\_\_\_ MFCPD: Tested thru (Orifice or Meter) \_\_\_\_\_

## MID-TEST SHUT-IN PRESSURE DATA

DEC 13 1990

	Hour, Date SI	Length of Time SI	SI Press. PSIG	Oil Cons. Div. (no)
UPR COMP				DIST. 3

RECEIVED

## NORTHWEST NEW MEXICO PACKER-LEAKAGE TEST

Page 2

## FLOW TEST NO. 2

Commenced at (hour, date) <small>AM</small>		Zone producing (Upper or Lower)			
TIME (hour, date)	LAPSED TIME SINCE <small>AM</small>	PRESSURE		PROD. ZONE TEMP.	REMARKS
		Upper Completion	Lower Completion		

Production rate during test

Oil: \_\_\_\_\_ BOPD based on \_\_\_\_\_ Bbls. in \_\_\_\_\_ Hours. \_\_\_\_\_ Grav. \_\_\_\_\_ GOR \_\_\_\_\_

Gas: \_\_\_\_\_ MCFPD: Tested thru (Orifice or Meter): \_\_\_\_\_

Remarks: \_\_\_\_\_

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

Approved DEC 13 1990 19 \_\_\_\_\_  
New Mexico Oil Conservation DivisionOperator Charles Prod.By W. HallTitle field techDate 12/12/90By Original Signed by CHARLES GHOLSONTitle DEPUTY OIL & GAS INSPECTOR, DIST. #3

## NORTHWEST NEW MEXICO PACKER LEAKAGE TEST INSTRUCTIONS

1. A packer leakage test shall be commenced on each multiple completed well within seven days after actual completion of the well, and annually thereafter as prescribed by the order authorizing the multiple completion. Such tests shall also be commenced on all multiple completions within seven days following recompletion and/or chemical or fracture treatment, and whenever remedial work has been done on a well during which the packer or the tubing have been disturbed. Tests shall also be taken at any time that communication is suspected or when requested by the Division.

2. At least 72 hours prior to the commencement of any packer leakage test, the operator shall notify the Division in writing of the exact time this test is to be commenced. Other operators shall also be so notified.

3. The packer leakage test shall commence when both zones of the dual completion are shut-in for pressure stabilization. Both zones shall remain shut-in until the well-head pressure in each has stabilized; provided however, that they need not remain shut-in more than seven days.

4. For Flow Test No. 1, one zone of the dual completion shall be produced at the normal rate of production while the other zone remains shut-in. Such test shall be continued for seven days in the case of a gas well and for 24 hours in the case of an oil well. Note: if, on an initial packer leakage test, a gas well is being flowed to the atmosphere due to the lack of a pipeline connection the flow period shall be three hours.

5. Following completion of Flow Test No. 1, the well shall again be shut-in, in accordance with the instructions for Flow Test No. 2.

that the previously produced zone shall remain shut-in while the zone which was previously shut-in is produced.

7. Pressures for gas-zone tests must be measured on each zone with a deadweight pressure gauge at time intervals as follows: 3 hours test: immediately prior to the beginning of each flow period, at fifteen-minute intervals during the first hour thereof, and at hourly intervals thereafter, including one pressure measurement immediately prior to the conclusion of each flow period. 7-day test: immediately prior to the beginning of each flow period, at least one time during each flow period (at approximately the midway point) and immediately prior to the conclusion of each flow period. Other pressures may be taken as desired, or may be requested on wells which have previously shown questionable test data.

14-hour oil zone test: all pressures, throughout the entire test, shall be continuously measured and recorded with recording pressure gauges the accuracy of which must be checked at least twice, once at the beginning and once at the end of each test, with a deadweight pressure gauge. If a well is a gas-oil or an oil-gas dual completion, the recording gauge shall be required on the oil zone only, with deadweight pressures as required above being taken on the gas zone.

8. The results of the above-described tests shall be filed in triplicate within 15 days after completion of the test. Tests shall be filed with the Area District Office of the New Mexico Oil Conservation Division on Northwest New Mexico Packer Leakage Test Form Revised (10-01-78) with all deadweight pressures indicated thereon as well as the flowing pressures (see notes only) and gravity and GOR (oil zones only).