

September 3, 1995

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

RECEIVED  
SEP 11 1995

OIL CON. DIV.  
DIST. 3

**Application for Exception to Rule 303-C**  
**Downhole Commingling**  
**Jicarilla Apache 102 Well #6**  
**1450' FSL & 1450' FWL, Unit K Section 3-T26N-R4W**  
**Blanco Mesaverde and Tapacito Pictured Cliffs Pools**  
**Rio Arriba County, New Mexico**

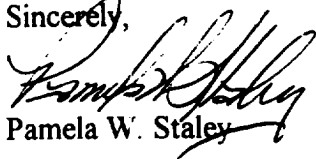
Amoco Production Company hereby requests administrative approval to downhole commingle production from the Blanco Mesaverde and Tapacito Pictured Cliffs Pools in the Jicarilla Apache 102 Well #6 referenced above. The Jicarilla Apache 102 Well #6 was originally a dual completion in the Mesaverde and Pictured Cliffs formations. This well has a marginal Pictured Cliffs formation which is being produced dually with a marginal Mesaverde formation which if left as a dual completion, the zones would likely be shut-in in the near future. We plan to complete the well with both the Mesaverde and Pictured Cliffs formations being downhole commingled in the wellbore. The two zones are expected to produce at a total commingled rate of about 135 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 60% from the Mesaverde formation and 40% from the Pictured Cliffs formation. The Pictured Cliffs has not historically produced liquids in this well. Based on that fact, we propose to allocate 100% of the liquid production to the Mesaverde 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 Apache 102

Well Number: 6

Well Location: 1450' FSL & 1450' FWL  
Unit K Section 3-T26N-R4W  
Rio Arriba County, New Mexico

Pools Commingled: Tapacito Pictured Cliffs  
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 33 MCFD and 0 BCPD. The Pictured Cliffs zone produced at an average rate of about 22 MCFD and 0 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.

Tapacito Pictured Cliffs Completion:  
Blanco Mesaverde Completion:

Historical production curve attached.  
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 Pictured Cliffs formation is calculated to be 795 PSIG while estimated bottomhole pressure in the Mesaverde formation is 1017 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 Pictured Cliffs 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:

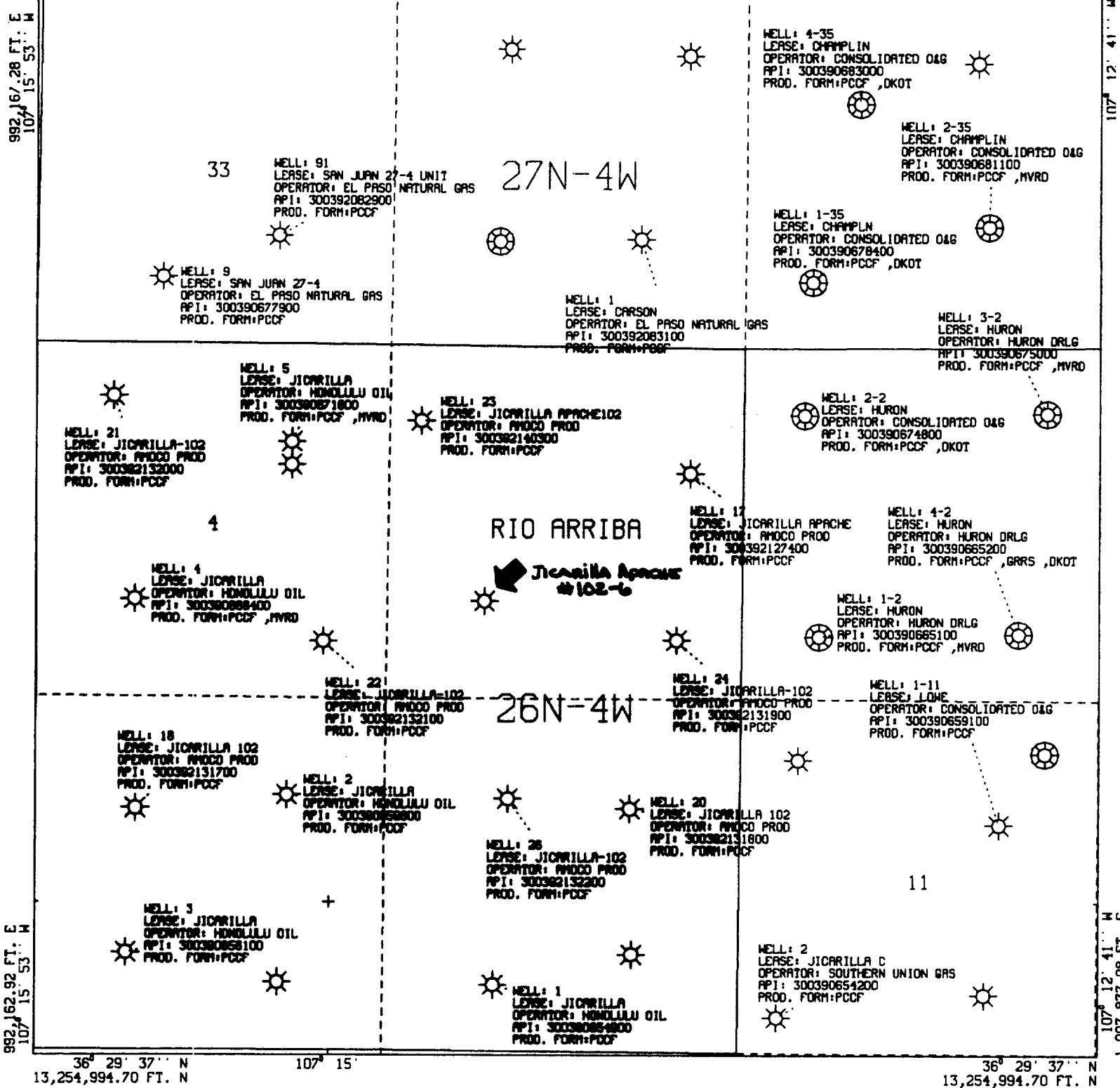
The BTU content of the produced streams are very similar and as such, we would expect the commingled production to have the same value as the sum of the individual streams.

- (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 60% from the Mesaverde formation and 40% from the Pictured Cliffs formation. The Pictured Cliffs has not historically produced liquids in this well. Based on that fact, we propose to allocate 100% of the liquid production to the Mesaverde 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.



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AMOCO PRODUCTION COMPANY  
 PLAT MAP  
 Jicarilla Apache 102-6 Sec. 3-T26N-R04W  
 Rio Arriba New Mexico FM: PCCF  
 SCALE 1 IN. = 2,000 FT. JUL 15, 1995

992,167.28 FT. E  
107° 15' 53" W

33

27N-4W

WELL: 27  
LEASE: SAN JUAN 27-4 UNIT  
OPERATOR: MROD OIL P  
API: 300390679200  
PROD. FORM: MVRD

WELL: 120  
LEASE: SAN JUAN 27 4 120  
OPERATOR: EL PASO NATURAL GAS  
API: 300392212200  
PROD. FORM: PCCF, MVRD

WELL: 137  
LEASE: SAN JUAN 27 4 137  
OPERATOR: EL PASO NATURAL GAS  
API: 300392237600  
PROD. FORM: MVRD

WELL: 3-35  
LEASE: CHAMPLIN  
OPERATOR: CONSOLIDATED O&G  
API: 300390684900  
PROD. FORM: PCCF, MVRD

WELL: 2-35  
LEASE: CHAMPLIN  
OPERATOR: CONSOLIDATED O&G  
API: 300390681100  
PROD. FORM: PCCF, MVRD

WELL: 2-A  
LEASE: CHAMPLIN 2A  
OPERATOR: CONSOLIDATED O AND G  
API: 300392152200  
PROD. FORM: MVRD

WELL: 6-A  
LEASE: JICARILLA-APACHE  
OPERATOR: AMOCO PROD  
API: 300382319500  
PROD. FORM: MVRD

WELL: 5  
LEASE: JICARILLA  
OPERATOR: HONOLULU OIL  
API: 300390871800  
PROD. FORM: PCCF, MVRD

WELL: 4-A  
LEASE: JICAR APACHE TRIB102A  
OPERATOR: AMOCO PRODUCTION CO  
API: 300382321800  
PROD. FORM: MVRD

WELL: 3-2  
LEASE: HURON  
OPERATOR: HURON DRUG  
API: 300390675000  
PROD. FORM: PCCF, MVRD

WELL: 1-A  
LEASE: HURON  
OPERATOR: CONSOLIDATED O&G  
API: 300392151100  
PROD. FORM: MVRD

WELL: 4  
LEASE: JICARILLA  
OPERATOR: HONOLULU OIL  
API: 300390888400  
PROD. FORM: PCCF, MVRD

WELL: 1-2  
LEASE: HURON  
OPERATOR: HURON DRUG  
API: 300390685100  
PROD. FORM: PCCF, MVRD

RIO ARRIBA

Jicarilla Apache  
#102-6

26N-4W

WELL: 28-A  
LEASE: JICARILLA APACHE  
OPERATOR: AMOCO PROD  
API: 300382283100  
PROD. FORM: MVRD

WELL: 30  
LEASE: JICARILLA APACHE102  
OPERATOR: AMOCO PROD  
API: 300382158200  
PROD. FORM: MVRD

WELL: 29  
LEASE: JICARILLA APACHE102  
OPERATOR: AMOCO PROD  
API: 300382158400  
PROD. FORM: MVRD

WELL: 1  
LEASE: MCINTYRE  
OPERATOR: CONSOLIDATED O&G  
API: 300390859200  
PROD. FORM: MVRD, OKOT

9

WELL: 15  
LEASE: JICARILLA APACHE102  
OPERATOR: PAN AMERICAN  
API: 300382018800  
PROD. FORM: MVRD

WELL: 31  
LEASE: JICARILLA APACHE  
OPERATOR: AMOCO PROD  
API: 300382185200  
PROD. FORM: MVRD

WELL: 16  
LEASE: JICARILLA APACHE102  
OPERATOR: PAN AMERICAN  
API: 300382019000  
PROD. FORM: MVRD

WELL: 1-11  
LEASE: JICARILLA-C  
OPERATOR: CONSOLIDATED O&G  
API: 300390654600  
PROD. FORM: MVRD, OKOT

WELL: 15-A  
LEASE: JICARILLA APACHE  
OPERATOR: AMOCO PROD  
API: 300382318800  
PROD. FORM: MVRD

36° 29' 37" N  
13,254,994.70 FT. N

36° 29' 37" N  
13,254,994.70 FT. N

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AMOCO PRODUCTION COMPANY  
PLAT MAP  
Jicarilla Apache 102-6 Sec. 3-T26N-R04W  
Rio Arriba New Mexico FM: MVRD

SCALE 1 IN. = 2,000 FT. JUL 15, 1995

NEW MEXICO OIL CONSERVATION COMMISSION  
Well Location and Acreage Dedication Plat

Section A.

Date JUNE 18, 1958

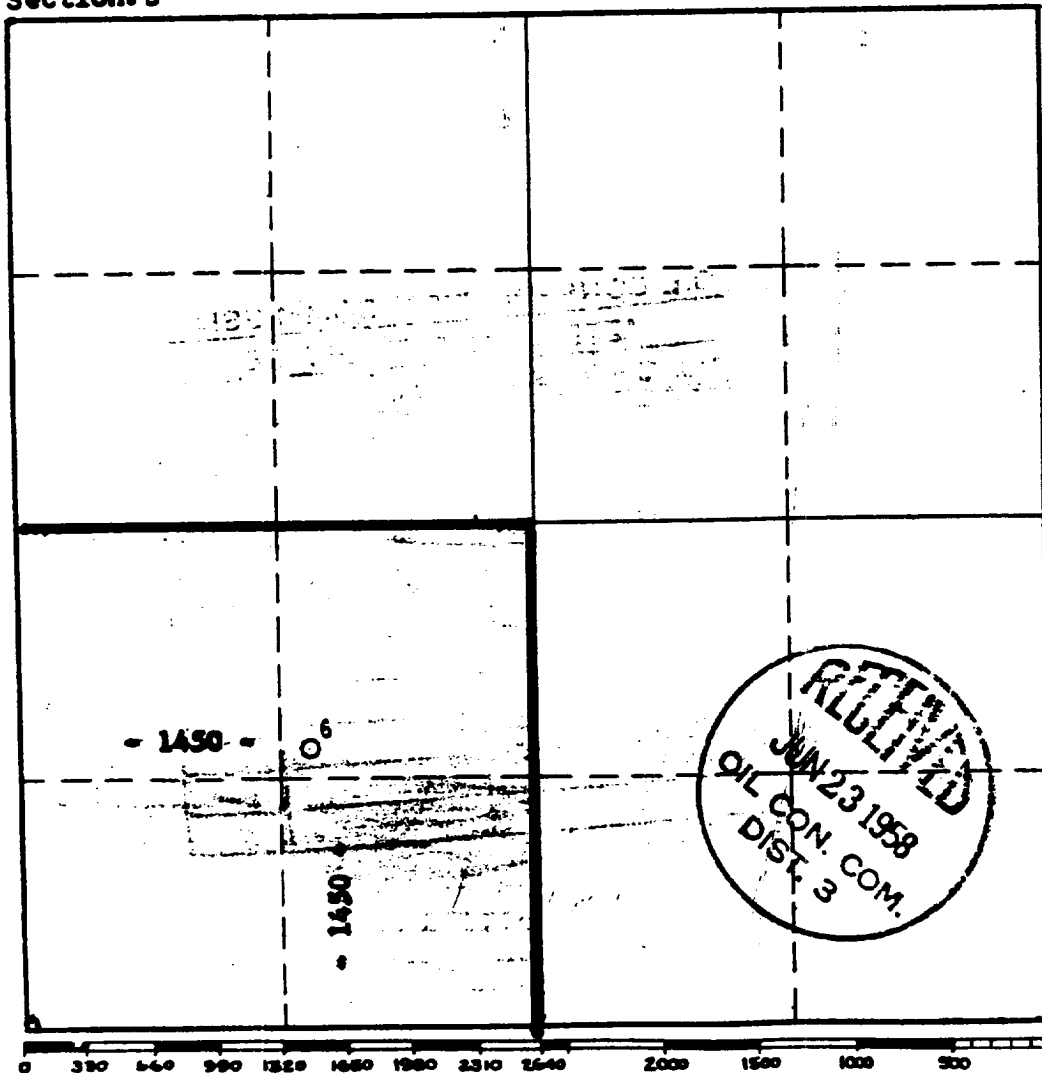
Operator HONOLULU OIL CORPORATION Lease JICARILLA APACHE  
Well No. 6 Unit Letter K Section 3 Township 26N Range 4W NMPM  
Located 1450 Feet From South Line, 1450 Feet From East Line  
County Rio Arriba G. L. Elevation 6904 Dedicated Acreage 160 Acres  
Name of Producing Formation Pictured Cliff Pool Tanapito

1. Is the Operator the only owner\* in the dedicated acreage outlined on the plat below?  
Yes X No       .
2. If the answer to question one is "no," have the interests of all the owners been consolidated by communitization agreement or otherwise? Yes        No       . If answer is "yes," Type of Consolidation
3. If the answer to question two is "no," list all the owners and their respective interests below:

Owner

Land Description

Section B



This is to certify that the information in Section A above is true and complete to the best of my knowledge and belief.

HONOLULU OIL CORPORATION  
(Operator)

George R. Hoy  
(Representative)

P.O. DR. 1391, MIDLAND, TEXAS  
Address

This is to certify that the well location shown on the plat in Section B 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       

Registered Professional  
Engineer and/or Land Surveyor.

Certificate No.

NLW MEXICO OIL CONSERVATION COMMISSION  
Well Location and Acreage Dedication Plat

Section A.

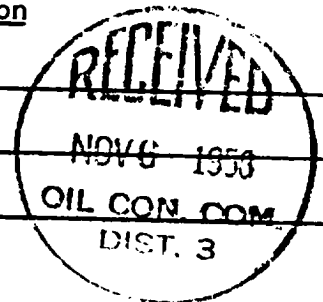
Date November 4, 1958

Operator Honolulu Oil Corporation Lease Jicarilla Apache  
Well No. 6 M Unit Letter K Section 3 Township 26 N Range 4 W NMPM  
Located 1450 Feet From South Line, 1450 Feet From East Line  
County Rio Arriba G. L. Elevation 6904 ✓ Dedicated Acreage 320 321.68 Acres  
Name of Producing Formation Mesa Verde Pool

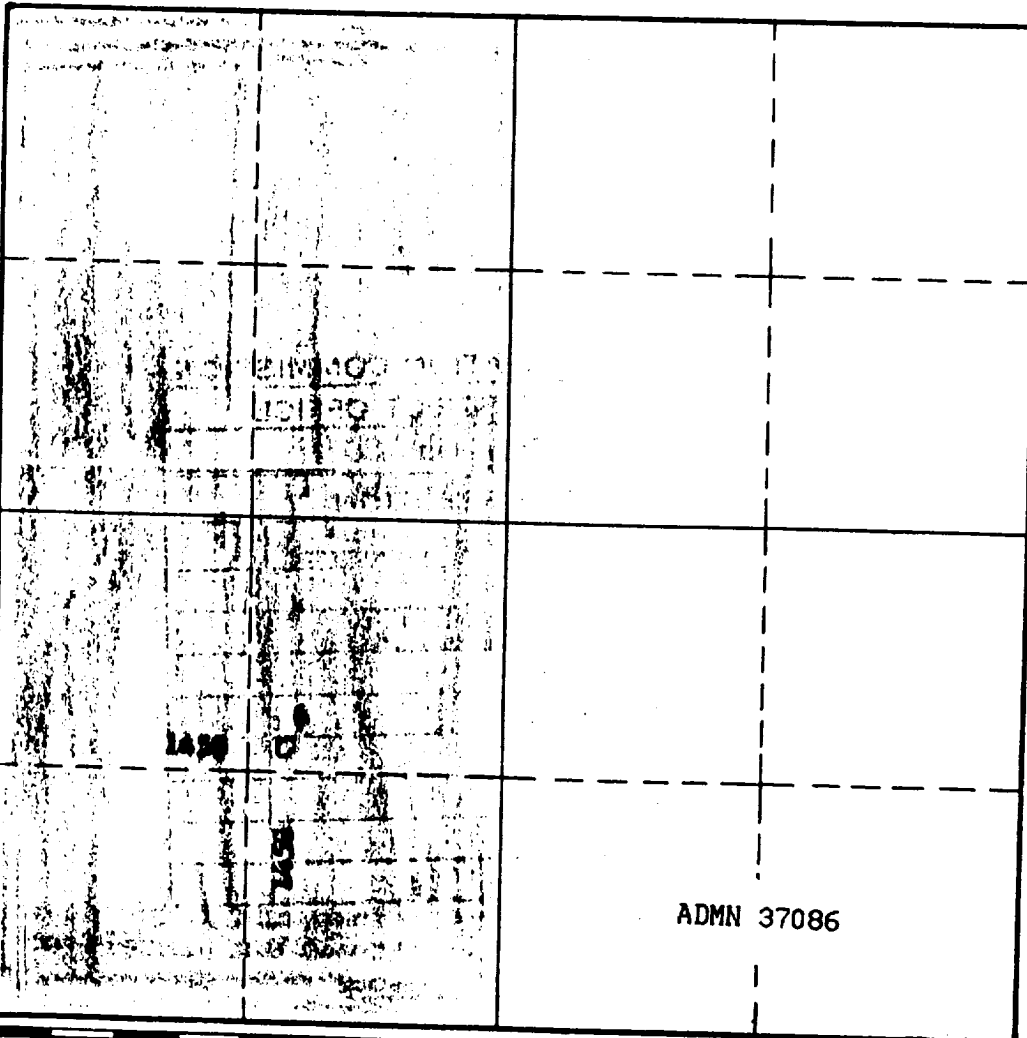
1. Is the Operator the only owner\* in the dedicated acreage outlined on the plat below?  
Yes X No
2. If the answer to question one is "no," have the interests of all the owners been consolidated by communitization agreement or otherwise? Yes No. If answer is "yes," Type of Consolidation
3. If the answer to question two is "no," list all the owners and their respective interests below:

Owner

Land Description



Section B



This is to certify that the information in Section A above is true and complete to the best of my knowledge and belief.

Honolulu Oil Corporation  
(Operator)

George R. Hoy  
(Representative)

Drawer 1391, Midland, Texas  
Address

This is to certify that the well location shown on the plat in Section B 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.

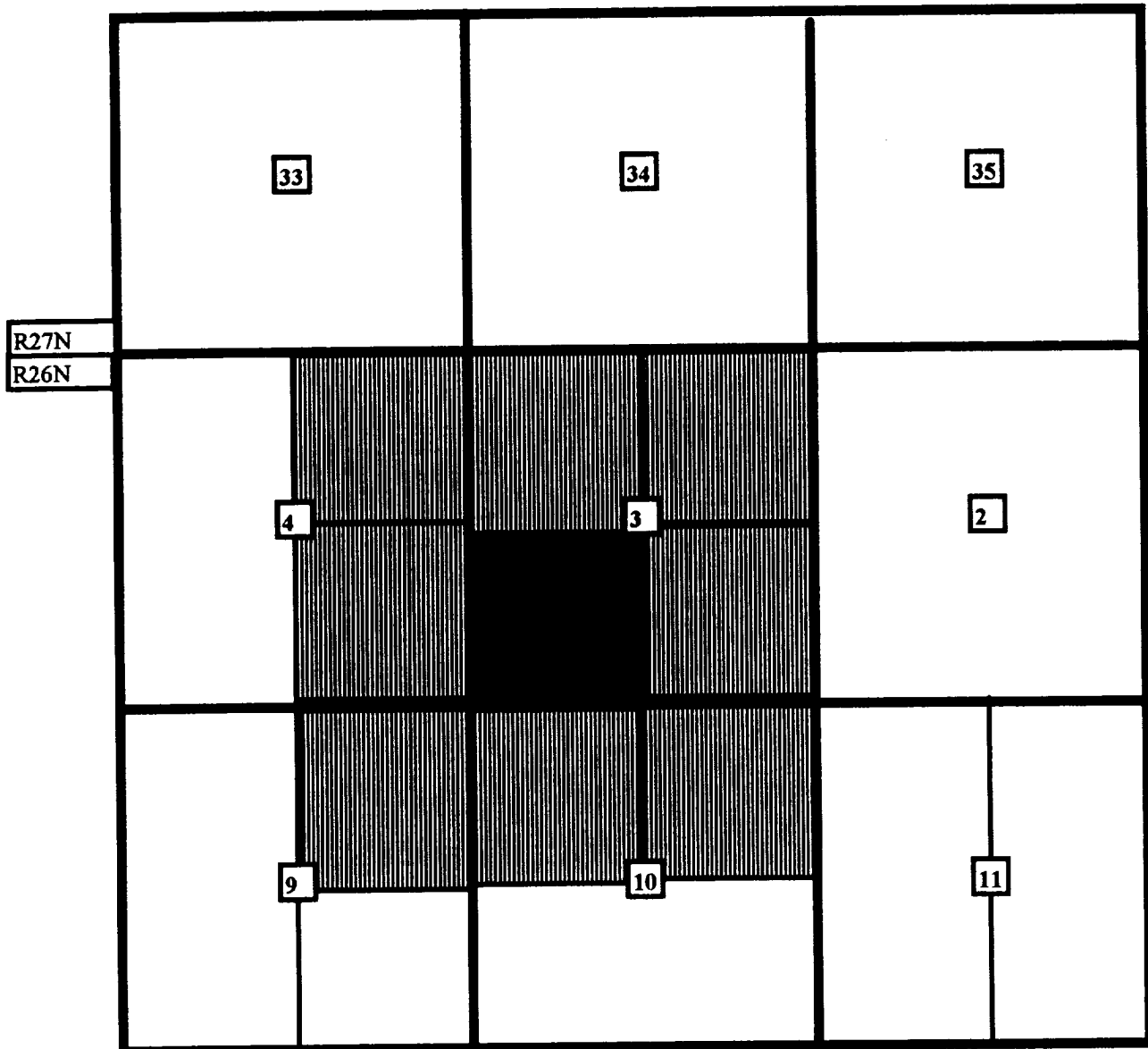
Date Surveyed \_\_\_\_\_



\_\_\_\_\_  
Registered Professional  
Engineer and/or Land Surveyor.



**AMOCO PRODUCTION COMPANY OFFSET OPERATOR PLAT**

**Jicarilla Apache 102 Well #6  
1450' FSL & 1450' FWL  
Unit K Section 3-T26N-R4W  
Tapacito Pictured Cliffs Pool**



-  SPACING UNIT TO BE DOWNHOLE COMMINGLED
-  AMOCO PRODUCTION COMPANY

INSTRUCTIONS FOR COMPLETION:

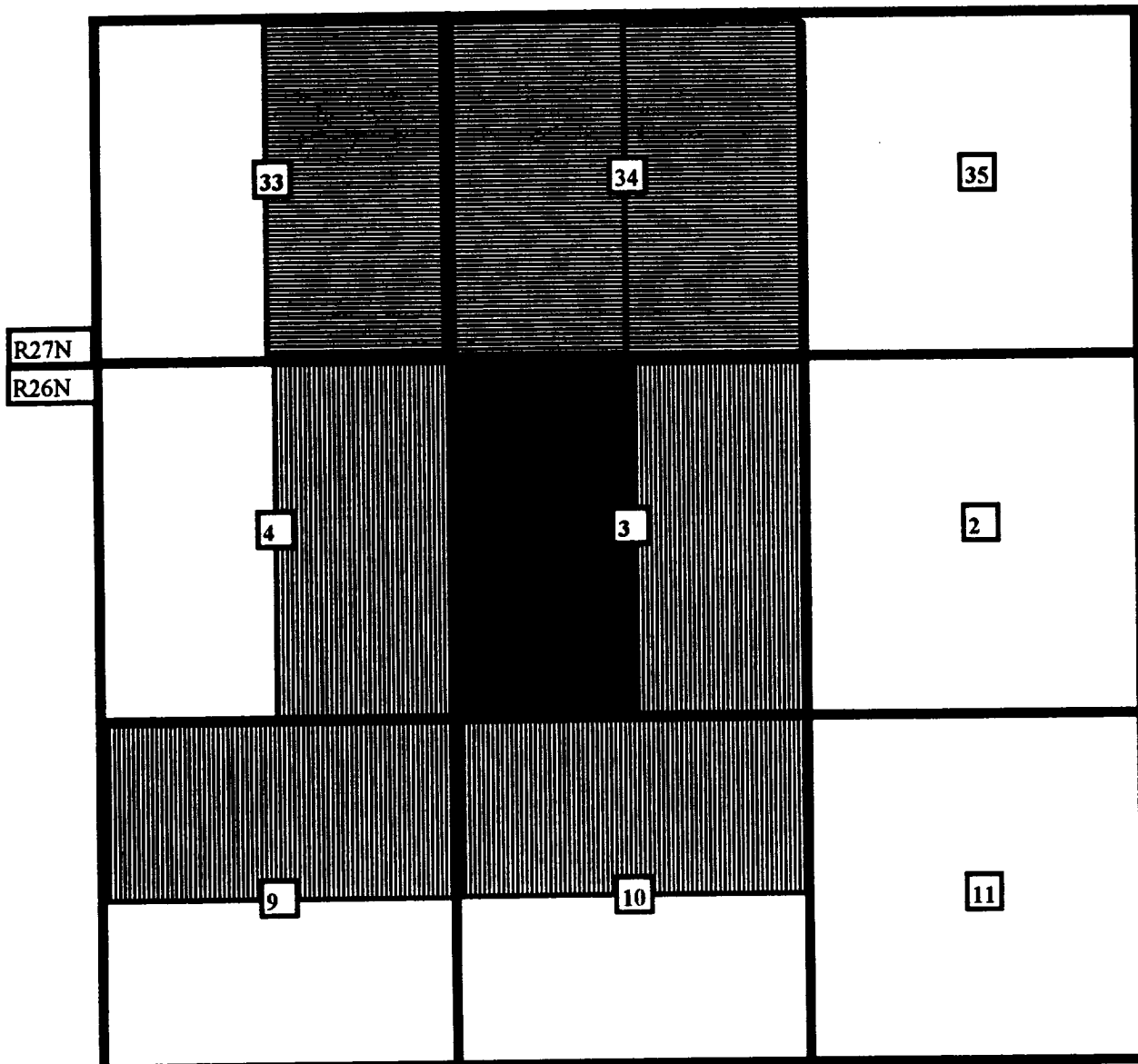
1. Operator shall furnish and certify to the information called for in Section A.
2. Operator shall outline the dedicated acreage for both oil and gas wells on the plat in Section B.
3. A registered professional engineer or land surveyor registered in the State of New Mexico or approved by the Commission shall show on the plat the location of the well and certify this information in the space provided.
4. All distances shown on the plat must be from the outer boundaries of Section.
5. If additional space is needed for listing owners and their respective interests as required in question 3, Section A, please use space below




OIL CONSERVATION COMMISSION		
AZTEC DISTRICT OFFICE		
No. Copies Received    2		
DISTRIBUTION		
	NO. FURNISHED	
Operator	/	✓
Santa Fe	/	
Proration Office		
State Land Office		
U. S. G. S.		
Transporter		
File	/	

\* "Owner" means the person who has the right to drill into and to produce from any pool and to appropriate the production either for himself or for himself and another. (65-3-29 (e) NMSA 1953 Comp.)

**AMOCO PRODUCTION COMPANY OFFSET OPERATOR PLAT**

**Jicarilla Apache 102 Well #6  
1450' FSL & 1450' FWL  
Unit K Section 3-T26N-R4W  
Blanco Mesaverde Pool**



-  **SPACING UNIT TO BE DOWNHOLE COMMINGLED**
-  **AMOCO PRODUCTION COMPANY**
-  **MERIDIAN OIL, INC.**

**LIST OF ADDRESSES FOR OFFSET OPERATORS**  
**Jicarilla Apache 102 Well #6**

***1*** Meridian Oil, Inc.  
P.O. Box 4289  
Farmington, NM 87499

Engr: zhab0b

JICARILLA APACHE 102 6

Operator- AMOCO PRODUCTION CO

30039066600PC

K032604-006 PC

APC\_WI - 1.0000000

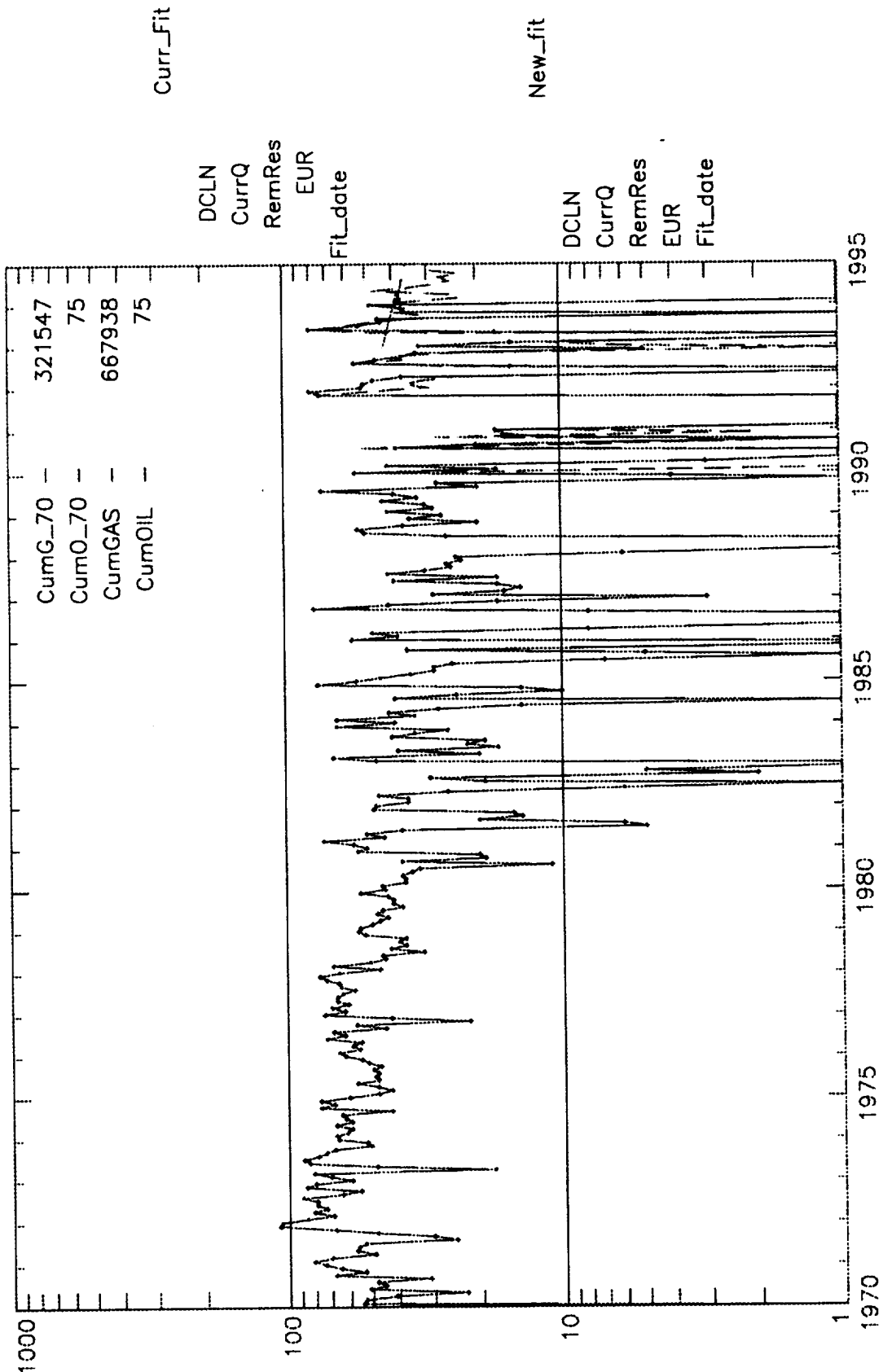
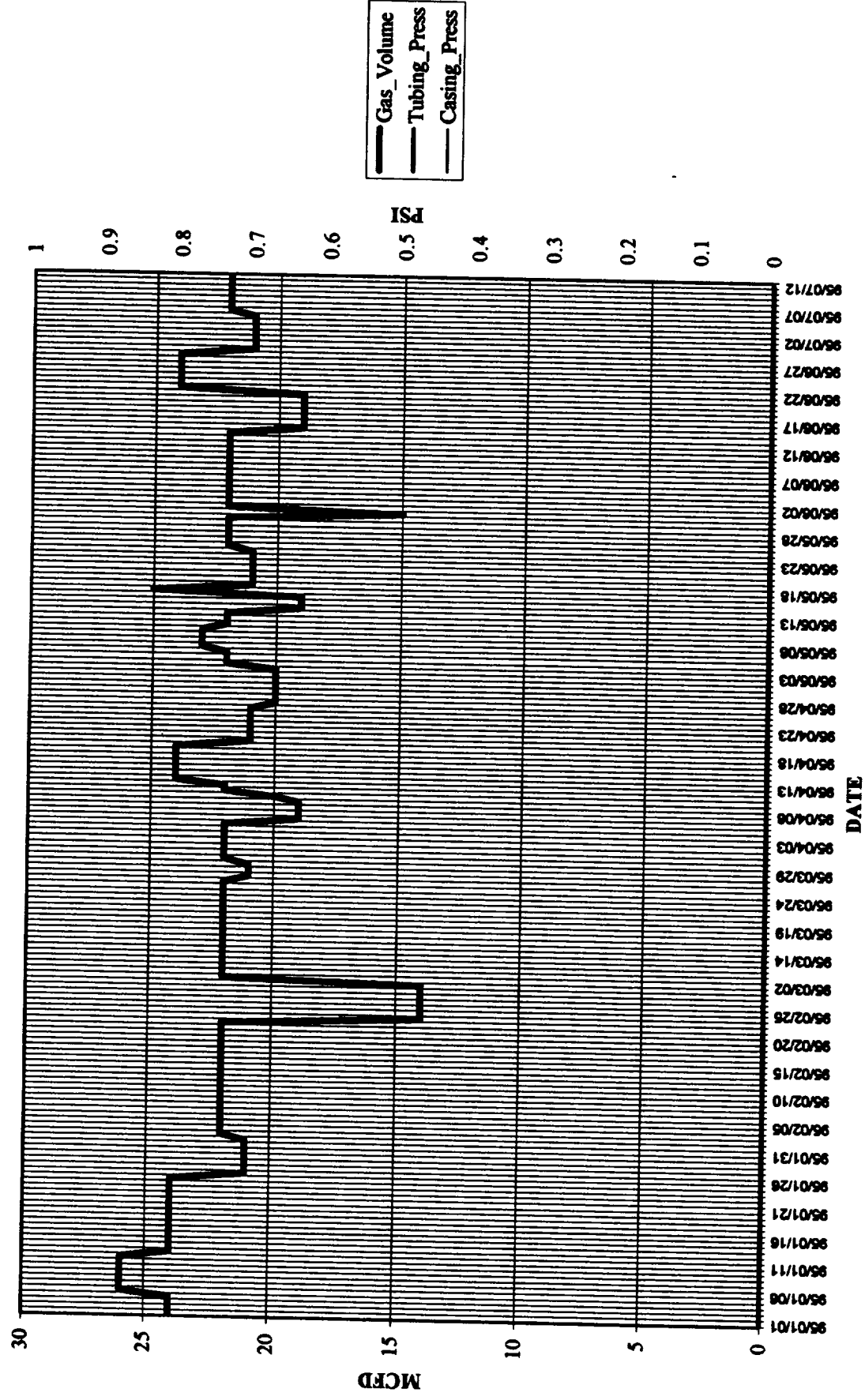


Chart1

Well: JIC APACHE 102 006-PC (92417602)



Engr: zhab0b

JICARILLA APACHE 102 6

Operator- AMOCO PRODUCTION CO

30039066600MV K032604-006 MV

APC\_WI - 1.0000000

CumG_70 -	318074
CumO_70 -	0
CumGAS -	660450
CumOIL -	0

Curr\_Fit

DCLN  
CurrQ  
RemRes  
EUR  
Fit\_date

New\_fit

DCLN  
CurrQ  
RemRes  
EUR  
Fit\_date

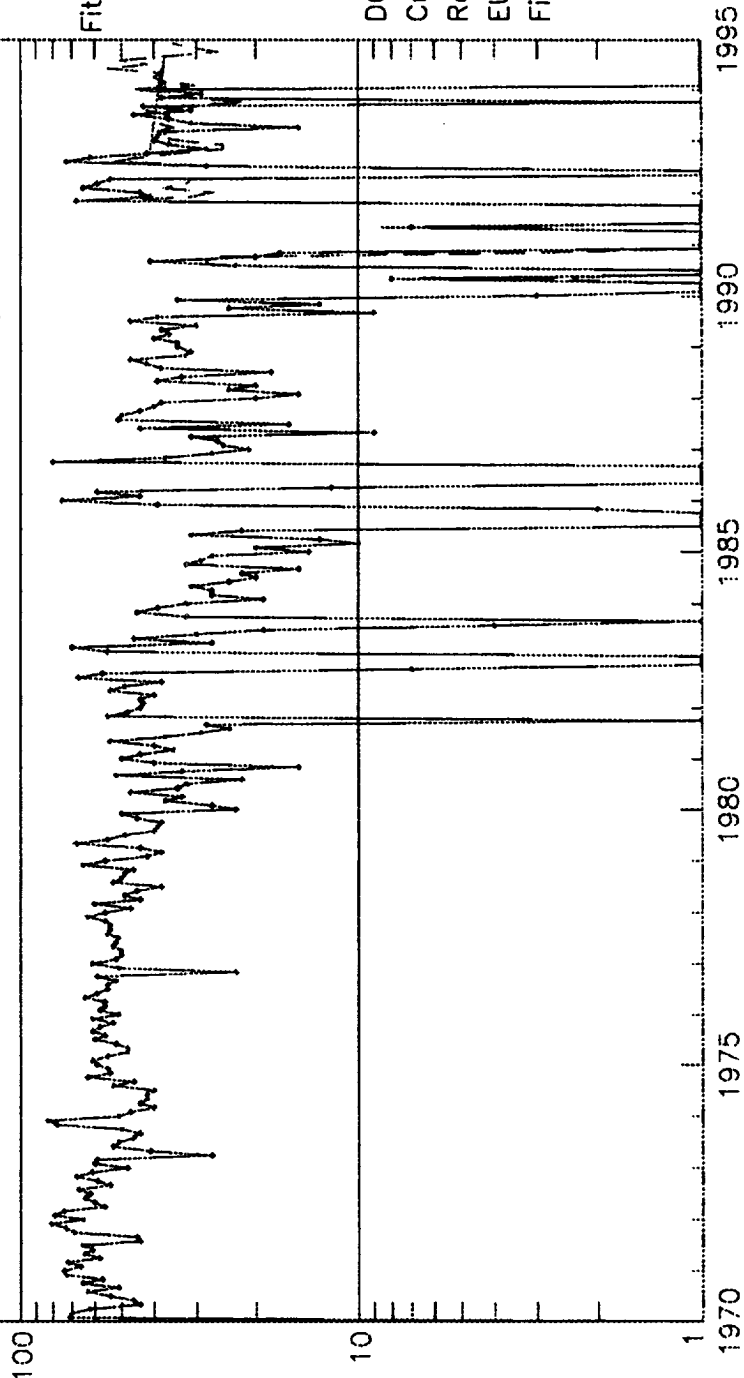
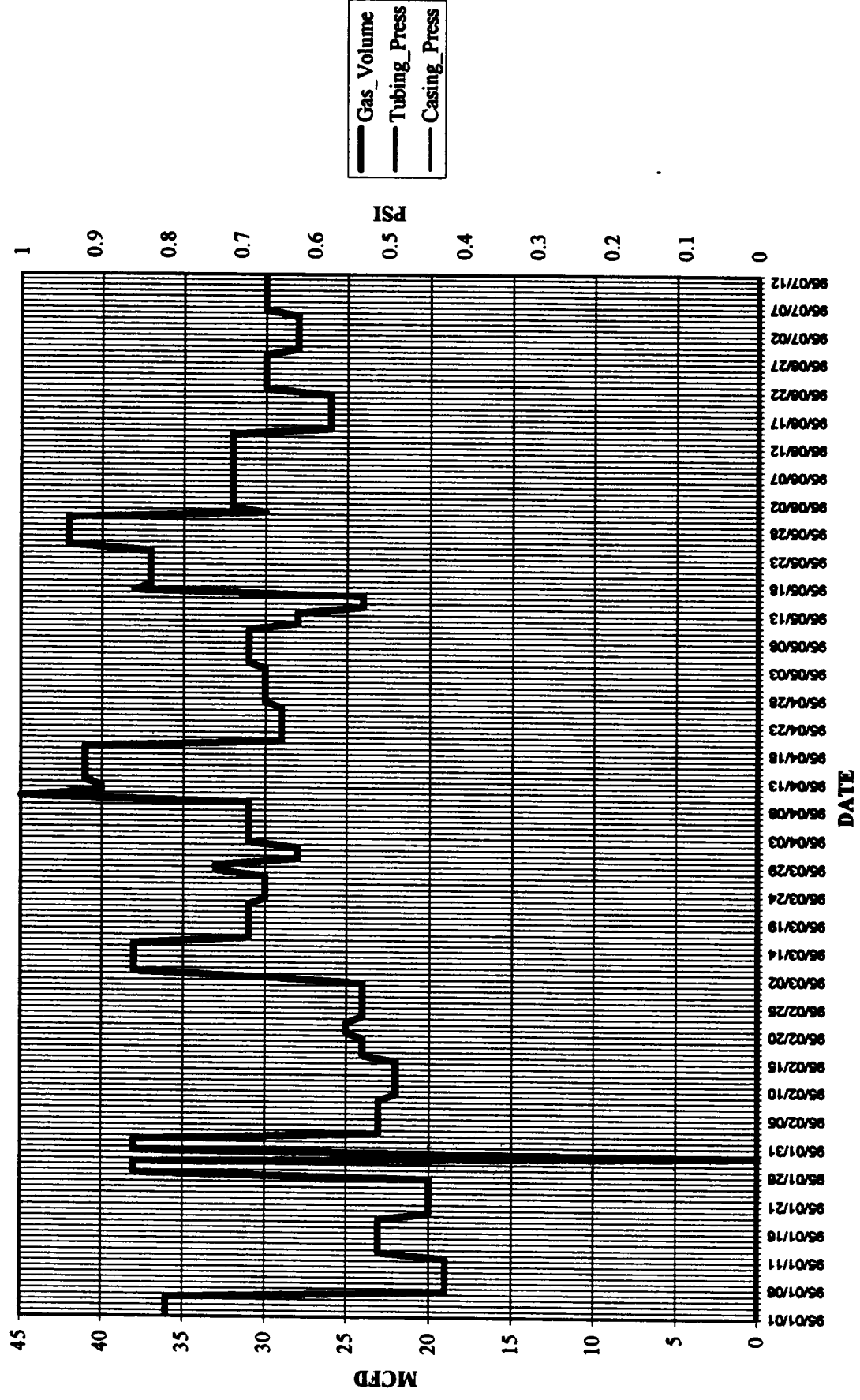


Chart1

Well: JIC APACHE 102 006-MV (92417601)





***ESTIMATED BOTTOMHOLE PRESSURES BY FORMATION***  
**JICARILLA APACHE #102-6**

PC Perforations at 3686-3710' midperf at 3698'  
MV Perforations at 5540-5906' midperf at 5723'

9/90 shut in pressures --- PC = 499 PSIG  
MV = 559 PSIG

GRADIENT = 0.08 PSI/FT

PC BHP = 499 PSIG + 3698' X 0.08 PSIG  
= 795 PSIG

MV BHP = 559 PSIG + 5723' X 0.08 PSIG  
= 1017 PSIG

795 PSIG / 1017 PSIG = 78%    WHICH MEETS THE >50% RULE

STATE OF NEW MEXICO  
Oil and MINERALS DEPARTMENT

## OIL CONSERVATION DIVISION

Page 1

## NORTHWEST NEW MEXICO PACKER-LEAKAGE TEST

OCT 13 1990

OIL CON. DIV.  
DIST. 3

Operator: AMOCO PRODUCTION COMPANY Lease/Well #: JIC-AP-102-6

Location of Well: K032604 Meter #: 228621

RTU: 1-028-02 County: RIO ARRI

NAME RESERVOIR OR POOL	TYPE PROD	METHOD PROD	MEDIUM PROD
TAPACITO PICTURED CLIFF 233704	GAS	FLOW	CSG
BLANCO MESAVERDE 228621	GAS	FLOW	TBG

## PRE-FLOW SHUT-IN PRESSURE DATA

Hour/Date Shut-In	Length of Time Shut-In	SI Press. PSIG	Stabilized
09/17/90	72 Hours	499	yes
09/17/90	72 Hours	559	yes

## FLOW TEST DATE NO. 1

Conducted at (hour, date)\*

TIME (hour, date)	LAPSED TIME SINCE*	PRESSURE		Zone Producing (Upr/Lwr)	
		Upper	Lower	Prod Temp.	REMARKS
9/17/90	Day 1	494	552		Both Zones SI
9/18/90	Day 2	503	552		Both Zones SI
9/19/90	Day 3	497	554		Both Zones SI
9/20/90	Day 4	499	559		
9/21/90	Day 5	496	253		flowed lower zone
9/22/90	Day 6	497	254		

Production rate during test

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

MFCPD: Tested thru (Orifice or Meter): METER

## MID-TEST SHUT-IN PRESSURE DATA

Hour, Date SI	Length of Time SI	SI Press. PSIG	Stabilized (yes/no)
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