STATE OF NEW MEXICO

ENERGY, MINERALS and NATURAL RESOURCES DIVISION

OIL CONSERVATION DIVISION

AZTEC DISTRICT OFFICE

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 DHC X
Proposed NSL_____ Proposed SWD_____
Proposed WFX_____ Proposed PMX_____
Proposed NSP_____ Proposed DD_____

Gentlemen:

I have examined the application received on 9/5/95

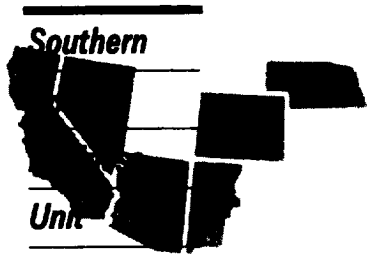
for the Amoco Atlantic A LS #31A
OPERATOR LEASE & WELL NO.

C-28-31N-10W and my recommendations are as follows:
UL-S-T-R

Approve.

Pressures are calculated in error.

Yours truly,




August 30, 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**
**Atlantic A LS #3A Well**
**1150' FNL, 1500' FWL, Unit C Section 28-T31N-R10W**
**Blanco Mesaverde and Blanco Pictured Cliffs Pools**
**San Juan County, New Mexico**

Amoco Production Company hereby requests administrative approval to downhole commingle production from the Blanco Mesaverde and Blanco Pictured Cliffs Pools in the Atlantic A LS #3A well referenced above. The Atlantic A LS #3A well was originally a dual completion in the Mesaverde and Pictured Cliffs formations. This well has a braidenhead problem which must be repaired, and while working on this well we want to remove the packer in order to downhole commingle production. The Pictured Cliffs zone has been producing against line pressure while the Mesaverde has been on compression. This commingling will allow both the Mesaverde and the Pictured Cliffs formations to be produced through the compressor and should resulti in more Pictured Cliffs production. 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 503 MCFD with 1.1 BOPD. 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 the Mesaverde formation has been producing on compression for some time and the Pictured Cliffs formation has not, we recommend that the Pictured Cliffs be tested for a 30 day period to determine stabilized production on compression. Once this has been established we would propose using the Mesaverde producing rate of 450 MCFD plus the stabilized Pictured Cliffs rate to set total production. The allocation percentages would then be set as a percentage of this total rate attributing 450 MCFD as the rate from the Mesaverde and the rest to the Pictured Cliffs. We would notify your Aztec District office when the testing was complete and report the allocation percentages for gas at that time for approval. We recommend that 100% of the liquid production be attributed to

the Mesaverde formation as the Pictured Cliffs formation has not historically produced liquids in this well. 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 formation, a historical and recent production plot and a C-102 for each formation. This spacing unit is located on a federal lease (NM-0606) and we will send a copy of the application to the BLM requesting their consent. Should you have questions concerning this matter, please contact me at (303) 830-5344.

Sincerely,

Pamela W. Staley

Enclosures

cc: Mike Kutas
Patty Haefele

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

Duane Spencer
Bureau of Land Management
1235 La Plata Hwy
Farmington, NM 87401

**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: | Atlantic A LS |
| Well Number: | 3A |
| Well Location: | 1150' FNL, 1500' FWL<br>Unit C Section 28-T31N-R10W<br>San Juan County, New Mexico |
| Pools Commingled: | Blanco Mesaverde<br>Blanco Pictured Cliffs Pools |

(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 Blanco Mesaverde produced an average stabilized rate of 476 MCFD and 1.1 BCPD. The Blanco Pictured Cliffs zone produced at an average rate of about 27 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.

| | |
|---|---|
| Blanco Pictured Cliffs 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 24 hour bottomhole shut-in pressures in the Pictured Cliffs and Mesaverde formations. Estimated bottomhole pressure in the Pictured Cliffs formation is 592 PSI while the estimated bottomhole pressure in the Mesaverde is 636 PSI. See attached calculations.

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

The fluids have no abnormal components that would prohibit commingling, or promote the creation of emulsions or scale . Liquid production historically has only been from the Mesaverde. The Pictured Cliffs is not anticipated to produce any liquids in this commingled well.

(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:

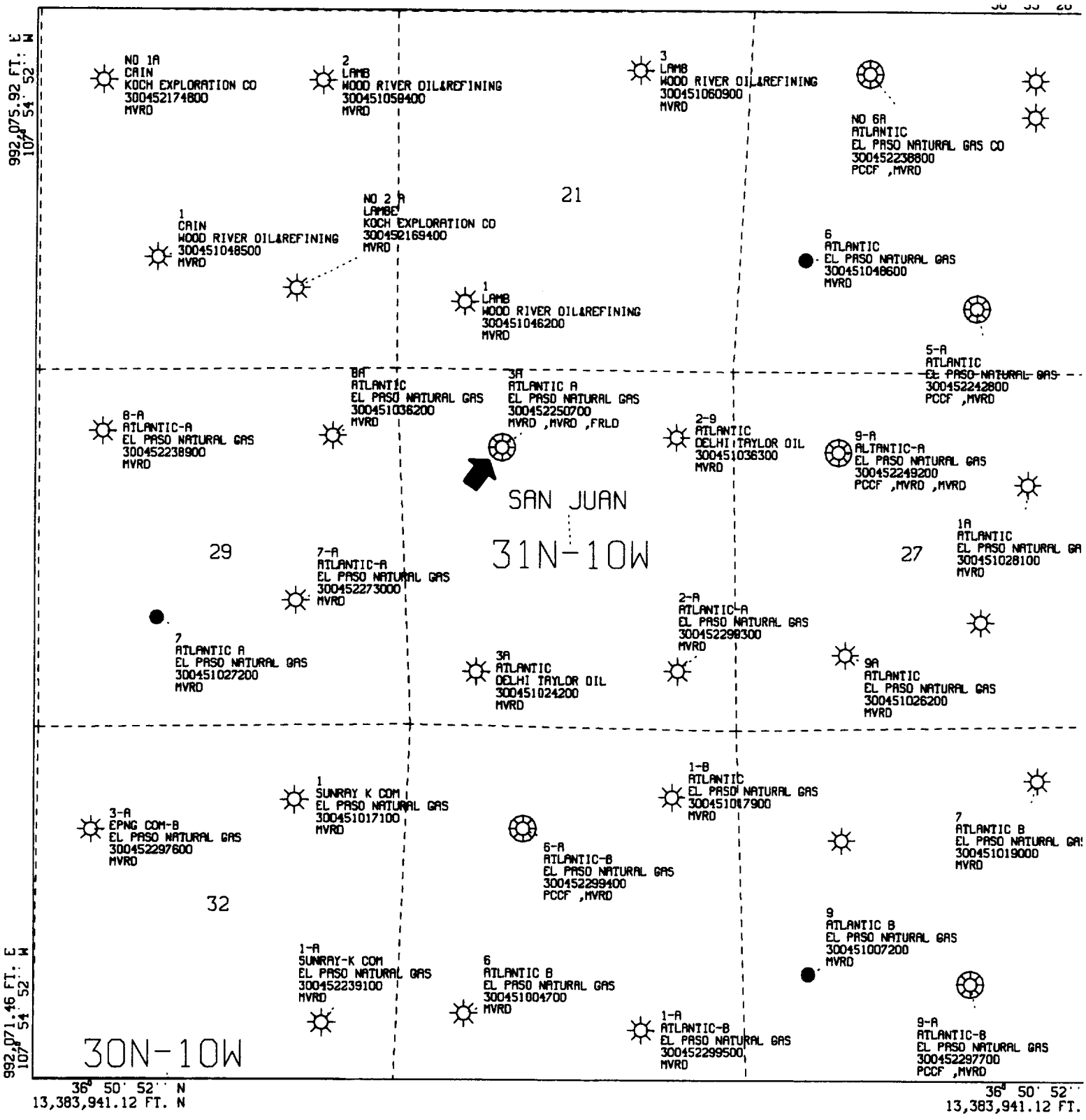
Since the BTU content of the produced fluids are very similar, we would expect the commingled production to have the same value as the sum of the individual streams.

(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:

The allocation method that we plan to use for this commingled well is as follows. Since the Mesaverde formation has been producing on compression for some time and the Pictured Cliffs formation has not, we recommend that the Pictured Cliffs be tested for a 30 day period to determine stabilized production on compression. Once this has been established we would propose using the Mesaverde producing rate of 450 MCFD plus the stabilized Pictured Cliffs rate to set total production. The allocation percentages would then be set as a percentage of this total rate attributing 450 MCFD as the rate from the Mesaverde and the rest to the Pictured Cliffs. We would notify your Aztec District office when the testing was complete and report the allocation percentages for gas at that time for approval. We recommend that 100% of the liquid production be attributed to the Mesaverde formation as the Pictured Cliffs formation has not historically produced liquids in this well. 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.

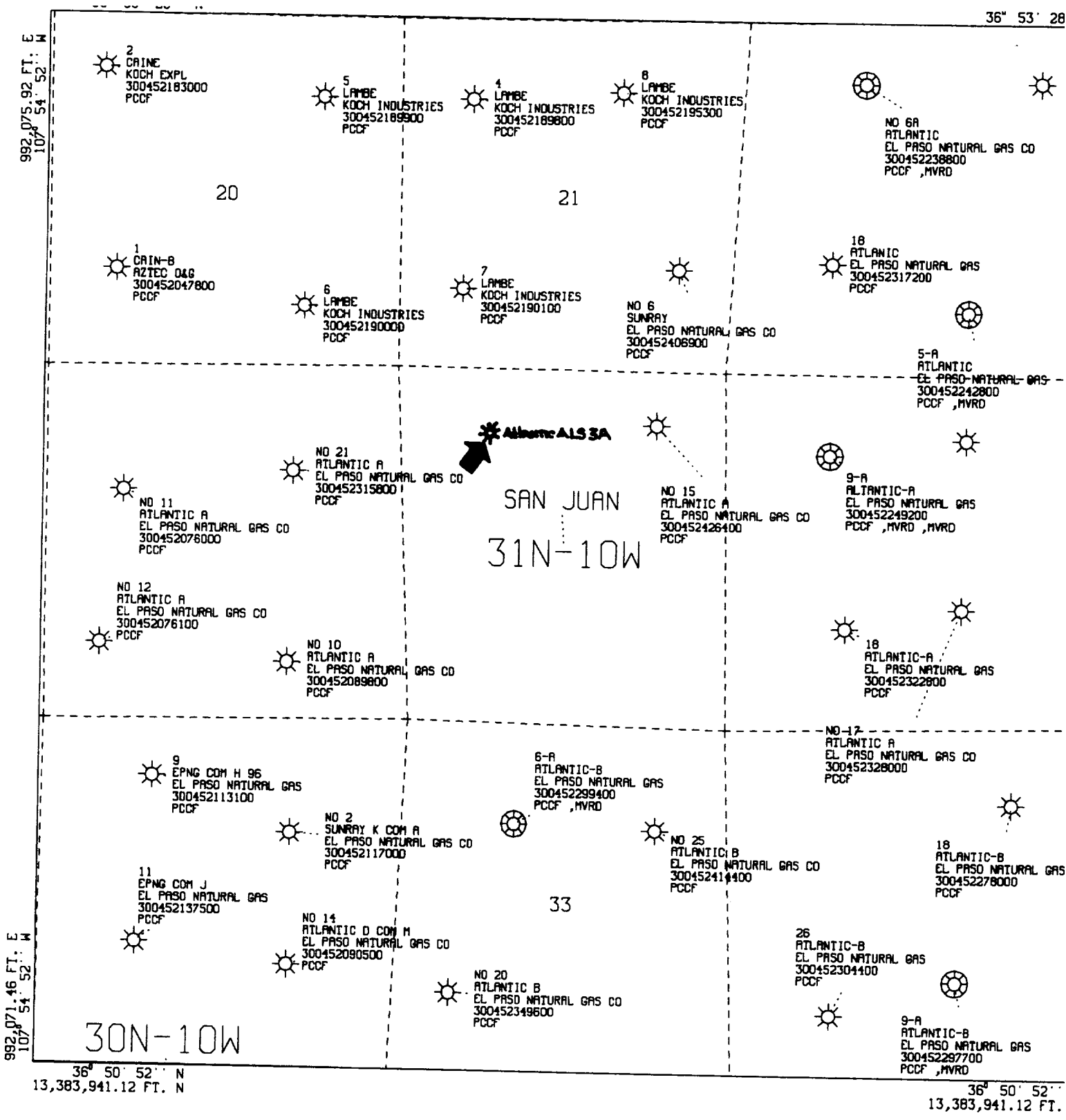





POLYCONIC CENTRAL MERIDIAN - 107° 53' 15" W LON
SPHERDID - 6

# AMOCO PRODUCTION COMPANY
## PLAT MAP
## Atlantic A LS 3A
## Mesaverde

SCALE 1 IN. = 2,000 FT. MAY 19, 1995






POLYCONIC CENTRAL MERIDIAN - 107° 53' 15" W LON
SPHEROID - 6

# AMOCO PRODUCTION COMPANY
## PLAT MAP
## Atlantic A LS 3A
## Pictured Cliffs

SCALE 1 IN. = 2,000 FT MAY 19 1995

95.12.29 FRI 19 MAY, 1995 JOB-P0745102, ISSCO DISSPLA 10.0

NEW MEXICO OIL CONSERVATION COMMISSION

# WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

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

| Operator | Lease | Well No. |
|---|---|---|
| EL PASO NATURAL GAS COMPANY | ATLANTIC A (NM-0606) | 3A |

| Unit Letter | Section | Township | Range | County |
|---|---|---|---|---|
| C | 28 | 31-N | 10-W | SAN JUAN |

Actual Footage Location of Well:
1150 feet from the NORTH line and 1500 feet from the WEST line

| Ground Level Elev. | Producing Formation | Pool | Dedicated Acreage: |
|---|---|---|---|
| 6045 | MESA VERDE | BLANCO MESA VERDE | 317.80 Acres |

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

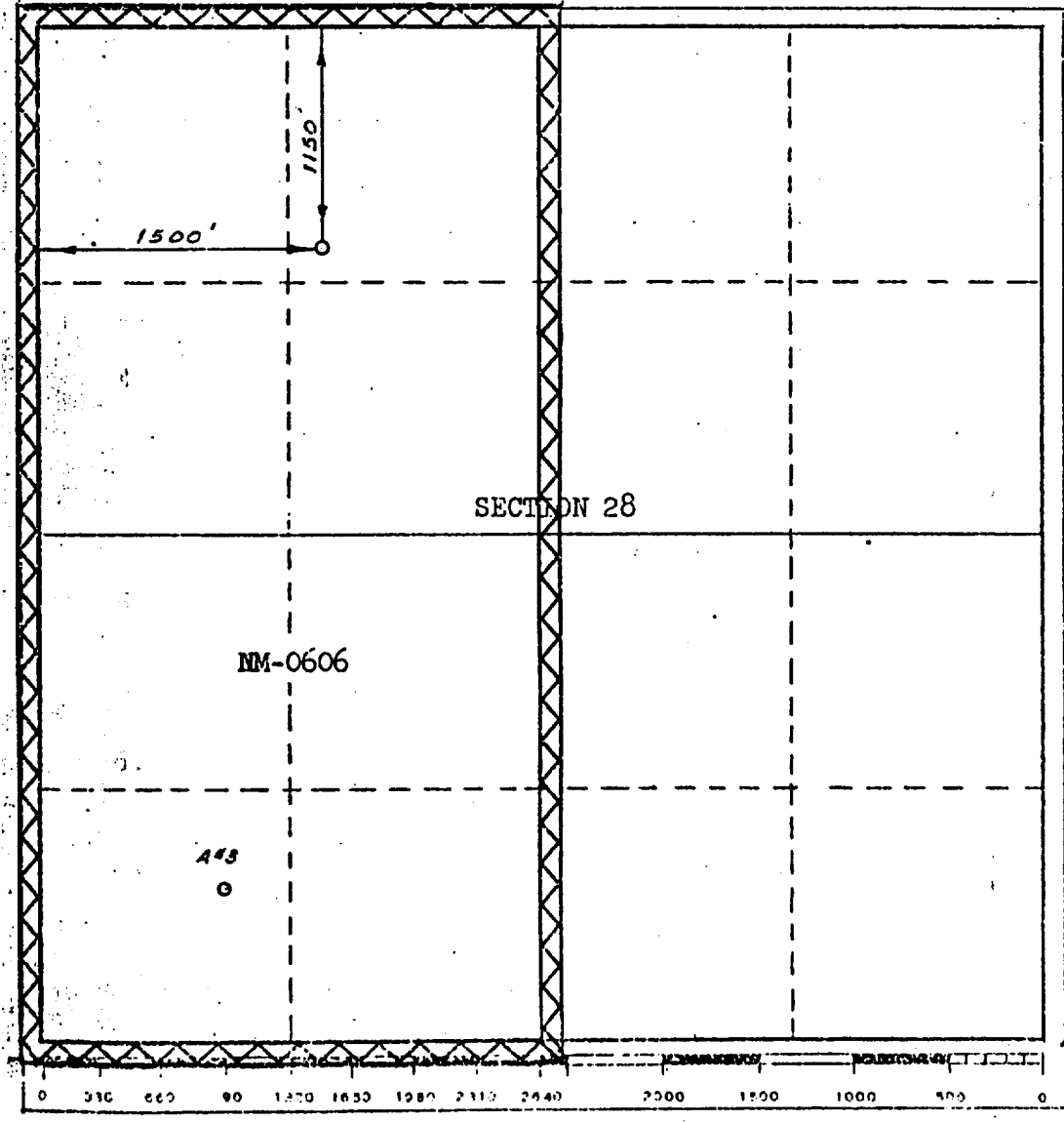
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, 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 communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.




CERTIFICATION

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

Original Signed by
Name D. G. Brisco
Drilling Clerk
Position
El Paso Natural Gas Co.
Company
April 14, 1977
Date

*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
MARCH 28, 1977
Registered Professional Engineer and/or Land Surveyor
Certificate No. 1760

WELL LOCATION AND ACREAGE DEDICATION PLAT

Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

| Operator | Lease | | Well No. |
|---|---|---|---|
| EL PASO NATURAL GAS COMPANY | ATLANTIC A | (NM-0606) | 3A |

| Unit Letter | Section | Township | Range | County |
|---|---|---|---|---|
| C | 28 | 31-N | 10-W | SAN JUAN |

Actual Footage Location of Well: 1150 feet from the NORTH line and 1500 feet from the WEST line

| Ground Level Elev. | Producing Formation | Pool | Dedicated Acreage: |
|---|---|---|---|
| 6045 | MESA VERDE - PICTURED CLIFFS | BLANCO PICTURED CLIFFS<br>BLANCO MESA VERDE | 161.28 & 317.80 Acres |

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

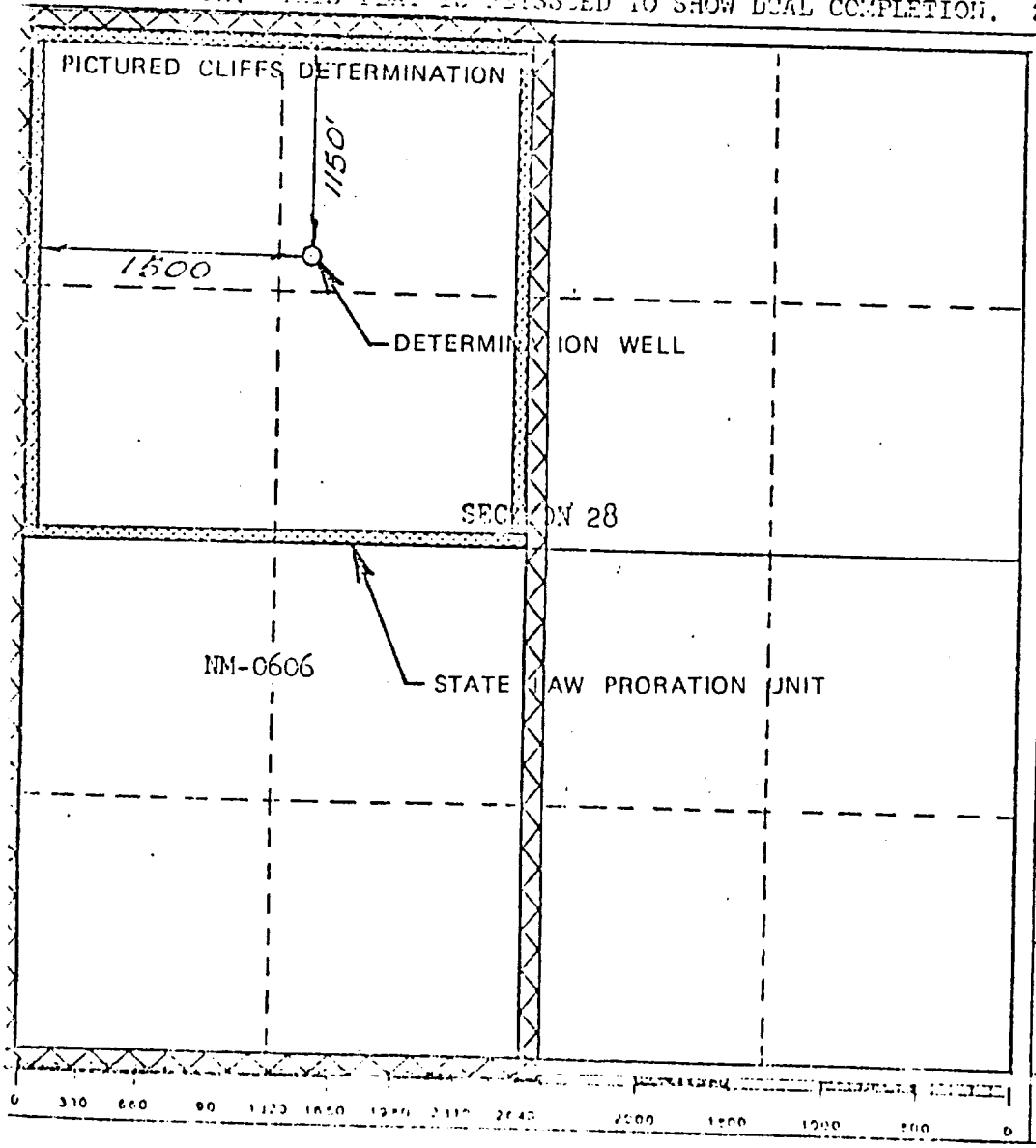
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, 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 communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission. NOTE: THIS PLAT IS REISSUED TO SHOW DUAL COMPLETION. 2-22-80




CERTIFICATION

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

D. H. Davis

Name: Drilling Clerk

Position: El Paso Natural Gas Co.

Company: February 29, 1980

Date:

*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.*

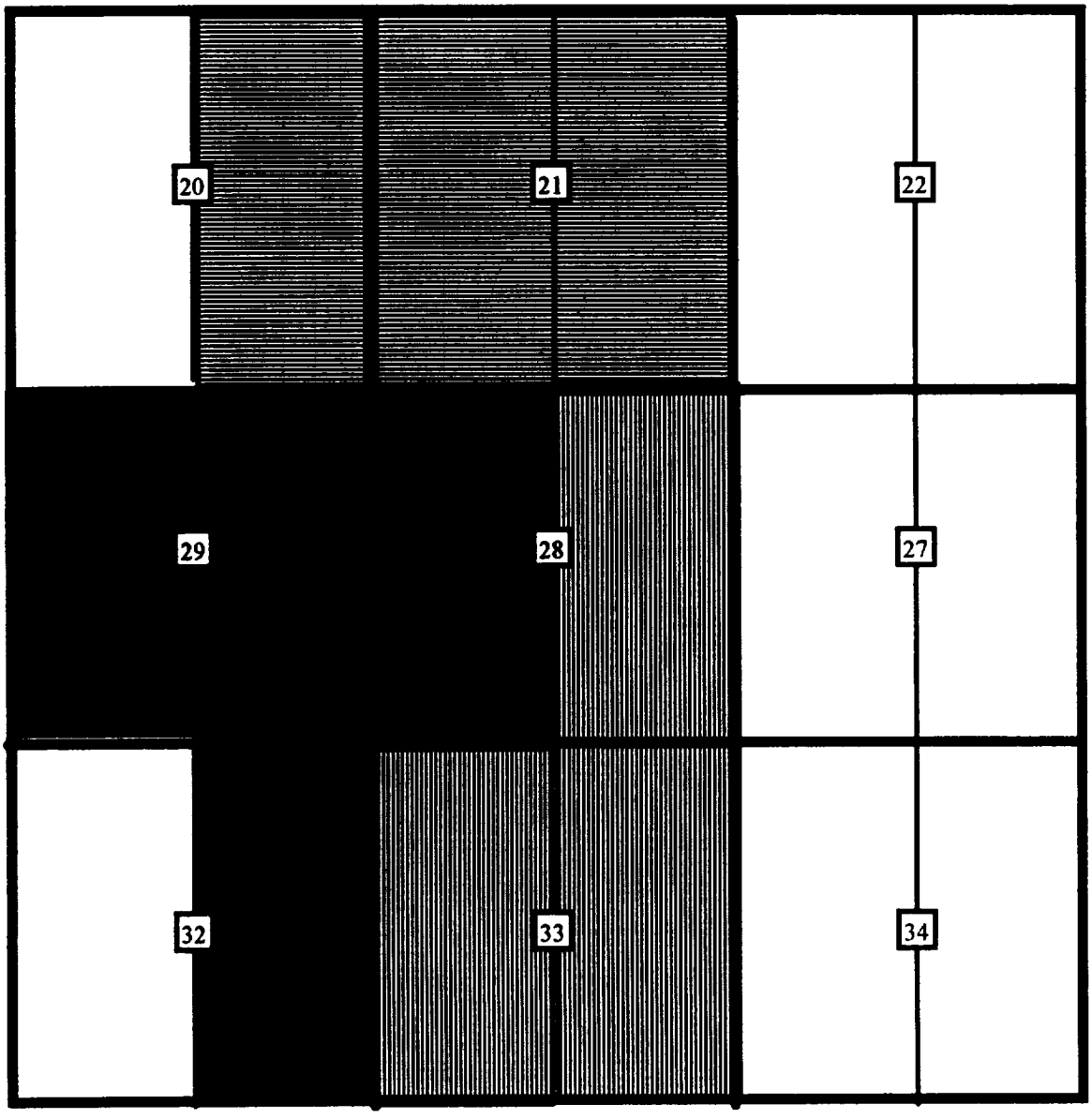
Date Surveyed: MARCH 28, 1977

Registered Professional Engineer and/or Land Surveyor: Original Signed By: David O. Vilven

Certificate No. 1760

## AMOCO PRODUCTION COMPANY OFFSET OPERATOR PLAT

**ATLANTIC A LS 3A**
**SECTION 28 T31N-R10W**
**1150'FWL & 1500'FWL**
**MESAVERDE FORMATION**




SPACING UNIT TO BE DOWNHOLE COMMINGLED

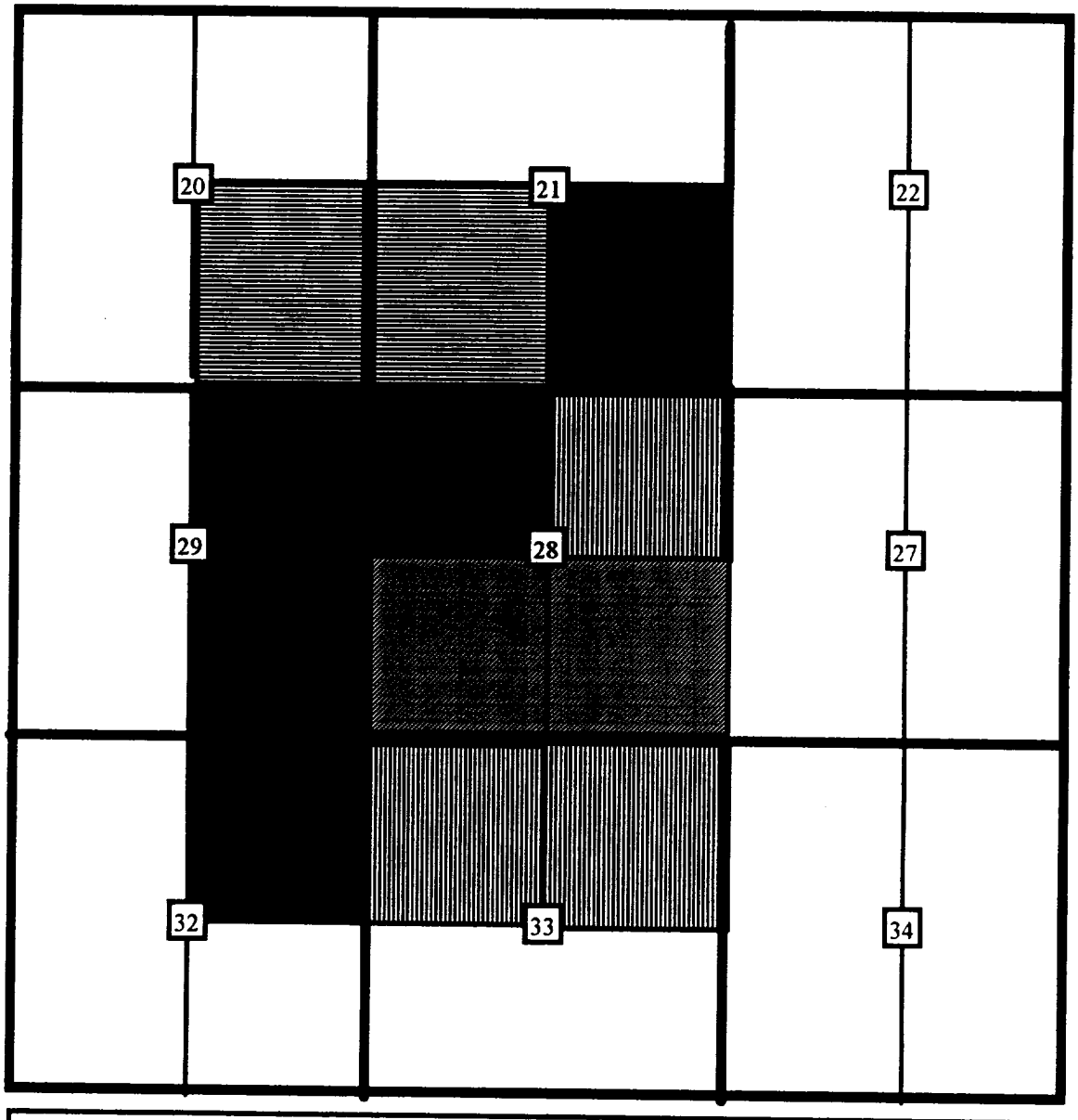
AMOCO PRODUCTION COMPANY

MERIDIAN OIL INC.

KOCH OIL COMPANY

## AMOCO PRODUCTION COMPANY OFFSET OPERATOR PLAT

**ATLANTIC A LS 3A**
**SECTION 28 T31N-R10W**
**1150'FWL & 1500'FWL**
**PICTURED CLIFFS FORMATION**




SPACING UNIT TO BE DOWNHOLE COMMINGLED

AMOCO PRODUCTION COMPANY

MERIDIAN OIL INC.

KOCH OIL COMPANY

25% AMOCO, 25% CONOCO, 50% VASTAR

LIST OF ADDRESSES FOR OFFSET OPERATORS

Atlantic A LS #3A

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

*2* Koch Oil Company
P.O. Box 2256
Wichita, KS 67201

*3* Conoco, Inc.
10 Desta Drive West
Midland, Texas 79705

*4* Vastar Resources, Inc.
P.O. Box 201690
Houston, Texas, 77816-1690

***ESTIMATED BOTTOMHOLE PRESSURES BY FORMATION***
Atlantic A LS #3A

MV Perforations at 4333 - 5235' midperf at 4784'
PC Perforations at 2774-2866' midperf at 2820'

6/95 shut in pressures --- MV = 253 PSIG
PC = 366 PSIG

GRADIENT = 0.08 PSI/FT

PC BHP = 366 PSIG + 2820' X 0.08 PSIG
=592 PSIG

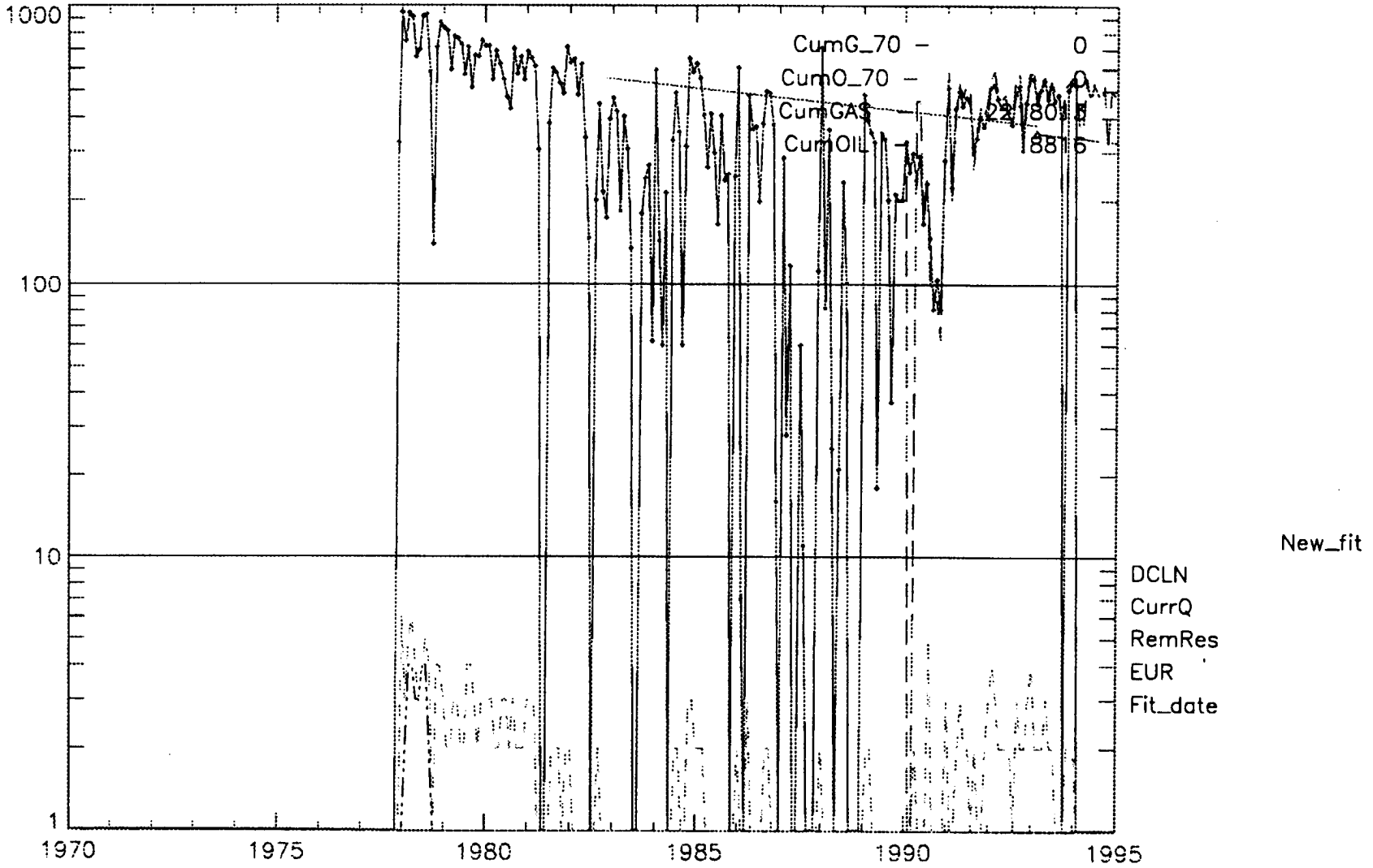
MV BHP = 253 psig + 4784' X 0.08 PSIG
=636 PSIG

Engr: zrar06

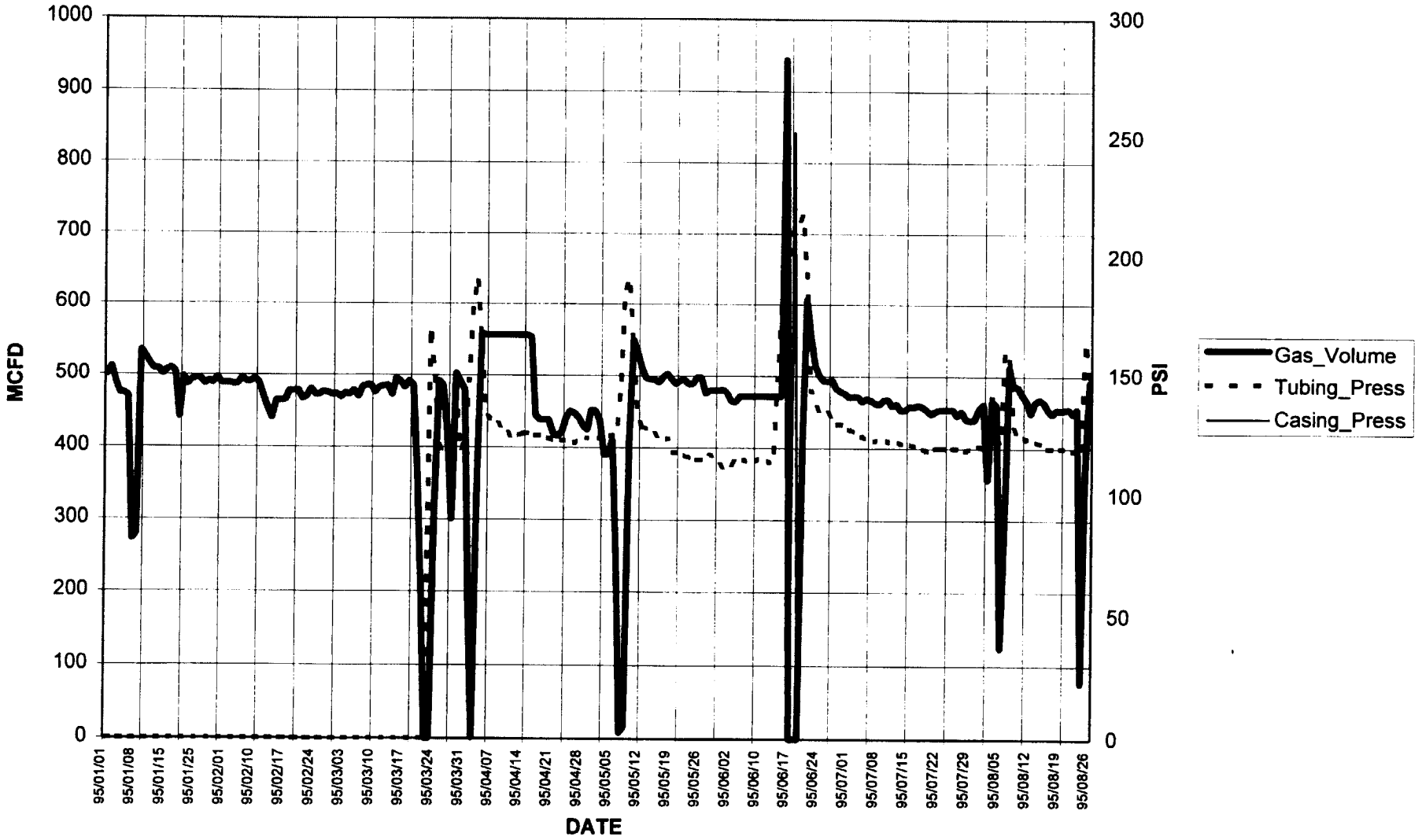
ATLANTIC A LS 3A

Operator- AMOCO PRODUCTION CO

300452250700MV C283110-003AMV APC_WI - 0.25000000



## Well: ATLANTIC A LS 003A-MV (97937502)

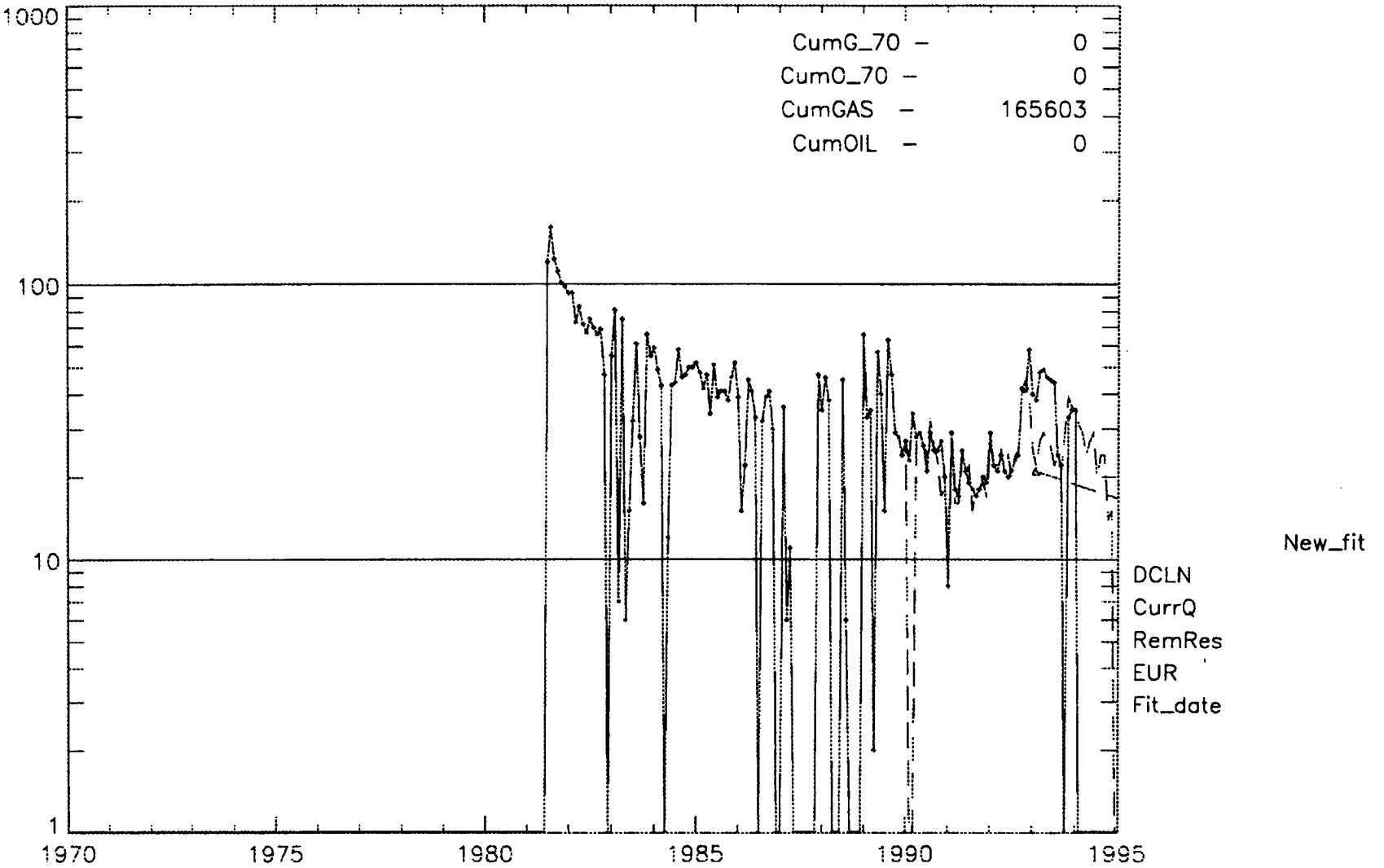


Engr: zrar06

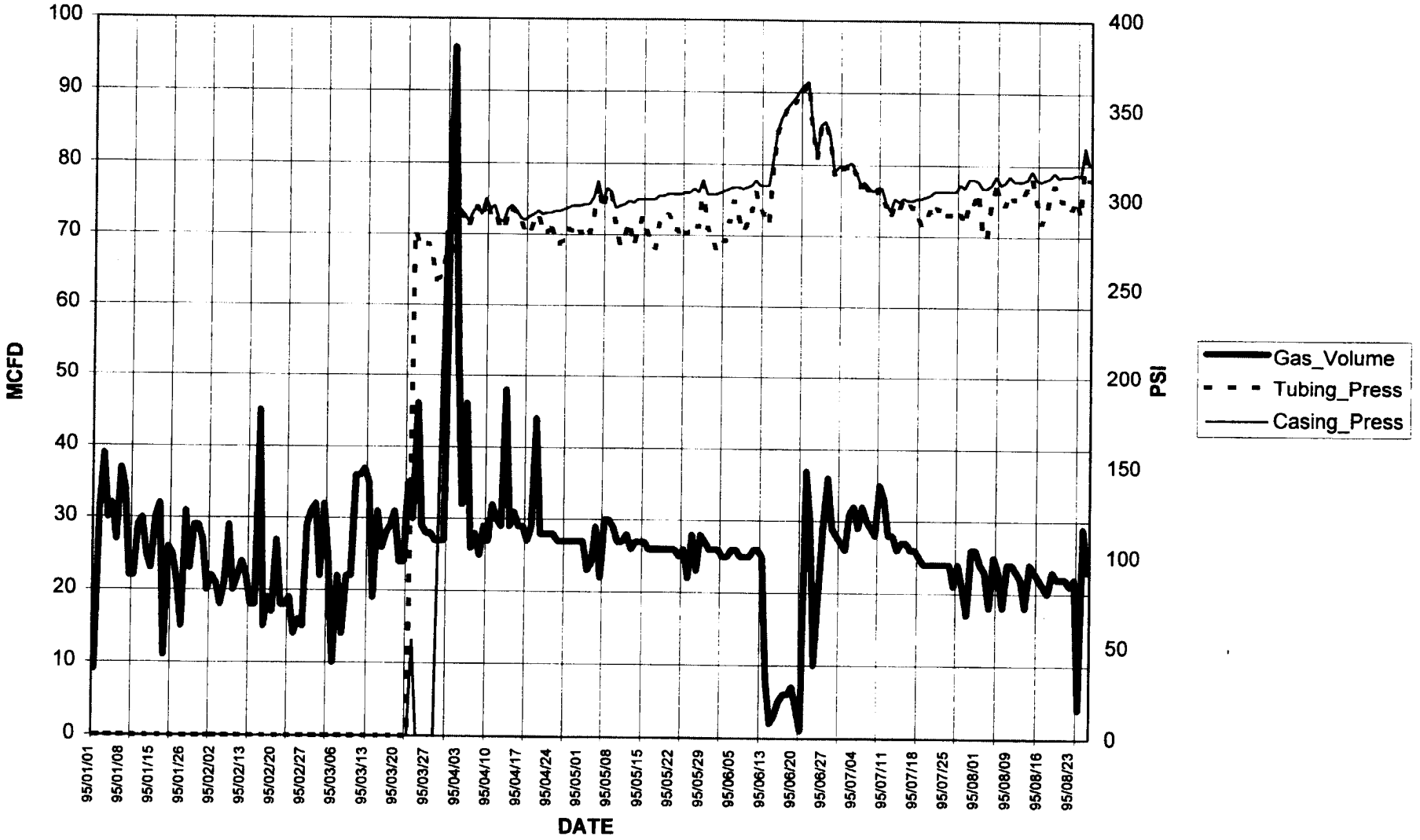
ATLANTIC A LS 3A

Operator– AMOCO PRODUCTION CO

300452250700PC C283110–003APC APC_WI – 0.25000000



## Well: ATLANTIC A LS 003A-PC (97937501)



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