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OIL CONSERVATION DIV.
SANTA FE

Southern

Rockies

Business

Unit

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

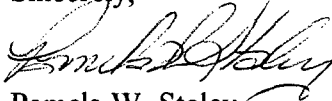
Amoco Production Company hereby requests administrative approval to downhole commingle production from the Blanco Mesaverde and Blanco Pictured Cliffs Pools in the Atlantic A LS #3A well referenced above. The Atlantic A LS #3A well was originally a dual completion in the Mesaverde and Pictured Cliffs 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 result 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
Unit C Section 28-T31N-R10W
San Juan County, New Mexico

Pools Commingled: Blanco Mesaverde
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.

13,399,673.12 FT. N
36° 53' 28" N

13,399,673.12 FT. N
36° 53' 28" N

992,075.92 FT. E
107° 54' 52" W

NO 1A
CAIN
KOCH EXPLORATION CO
300452174800
MVRD

2
LAMB
WOOD RIVER OIL&REFINING
300451058400
MVRD

3
LAMB
WOOD RIVER OIL&REFINING
300451060900
MVRD

NO 6A
ATLANTIC
EL PASO NATURAL GAS CO
300452238800
PCCF, MVRD

1
CAIN
WOOD RIVER OIL&REFINING
300451048500
MVRD

NO 2A
LAMB
KOCH EXPLORATION CO
300452169400
MVRD

6
ATLANTIC
EL PASO NATURAL GAS
300451048600
MVRD

1
LAMB
WOOD RIVER OIL&REFINING
300451046200
MVRD

5-A
ATLANTIC
EL PASO NATURAL GAS
300452242800
PCCF, MVRD

8-A
ATLANTIC-A
EL PASO NATURAL GAS
300452238900
MVRD

8A
ATLANTIC
EL PASO NATURAL GAS
300451036200
MVRD

3A
ATLANTIC A
EL PASO NATURAL GAS
300452250700
MVRD, MVRD, FRD

2-9
ATLANTIC
DELHI TAYLOR OIL
300451038300
MVRD

9-A
ATLANTIC-A
EL PASO NATURAL GAS
300452249200
PCCF, MVRD, MVRD

SAN JUAN

31N-10W

29

7-A
ATLANTIC-A
EL PASO NATURAL GAS
300452273000
MVRD

7
ATLANTIC A
EL PASO NATURAL GAS
300451027200
MVRD

2-A
ATLANTIC-A
EL PASO NATURAL GAS
300452298300
MVRD

3A
ATLANTIC
DELHI TAYLOR OIL
300451024200
MVRD

9A
ATLANTIC
EL PASO NATURAL GAS
300451026200
MVRD

3-A
EPNG COM-B
EL PASO NATURAL GAS
300452297600
MVRD

1
SUNRAY K COM
EL PASO NATURAL GAS
300451017100
MVRD

1-B
ATLANTIC
EL PASO NATURAL GAS
300451017900
MVRD

6-A
ATLANTIC-B
EL PASO NATURAL GAS
300452299400
PCCF, MVRD

7
ATLANTIC B
EL PASO NATURAL GAS
300451019000
MVRD

32

1-A
SUNRAY-K COM
EL PASO NATURAL GAS
300452239100
MVRD

6
ATLANTIC B
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300451004700
MVRD

1-A
ATLANTIC-B
EL PASO NATURAL GAS
300452299500
MVRD

9
ATLANTIC B
EL PASO NATURAL GAS
300451007200
MVRD

9-A
ATLANTIC-B
EL PASO NATURAL GAS
300452297700
PCCF, MVRD

30N-10W

36° 50' 52" N
13,383,941.12 FT. N

36° 50' 52" N
13,383,941.12 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
Atlantic A LS 3A
Mesaverde

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

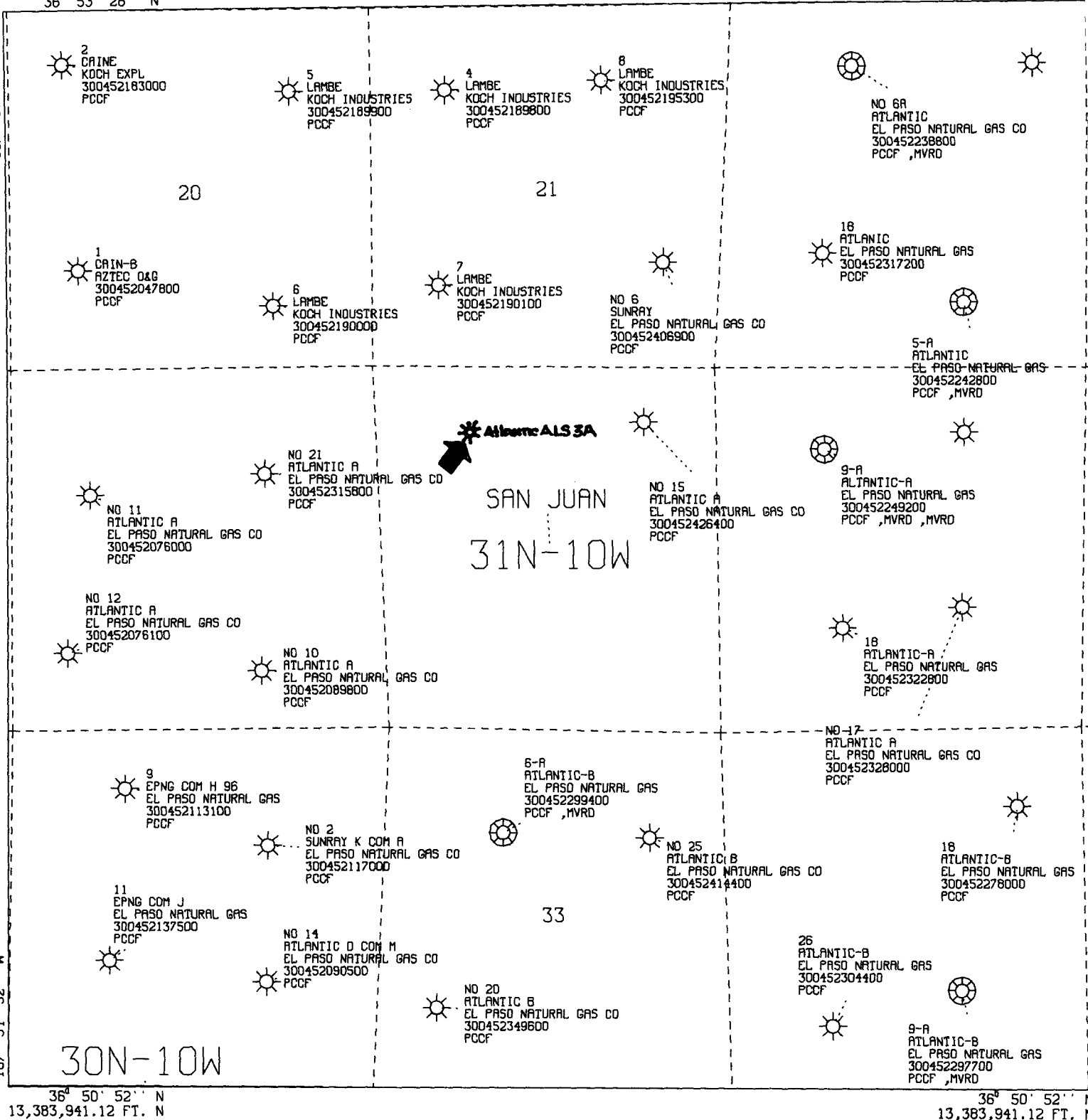
SCALE 1 IN. = 2,000 FT. MAY 19, 1995

13,399,673.12 FT. N
36° 53' 28" N

13,399,673.12 FT. N
36° 53' 28" N

992,075.92 FT. E
107° 54' 52" W

992,071.46 FT. E
107° 54' 52" W



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

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

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

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.

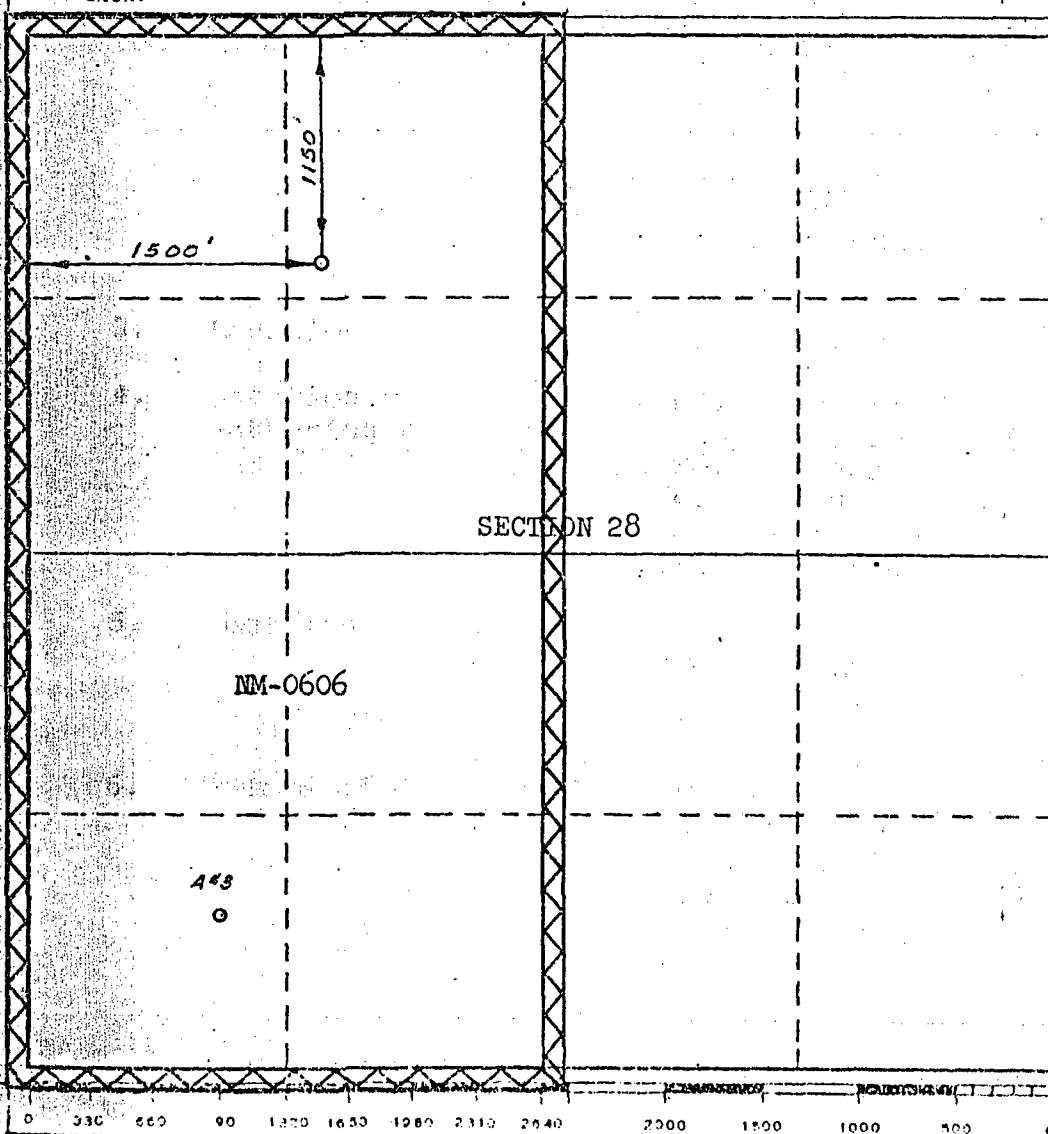
Operator EL PASO NATURAL GAS COMPANY		Lease ATLANTIC A (NM-0606)		Well No. 3A
Unit Letter C	Section 28	Township 31-N	Range 10-W	County SAN JUAN
Actual Footage Location of Well: 1150 feet from the NORTH line and 1500 feet from the WEST line				
Ground Level Elev. 6045	Producing Formation MESA VERDE	Pool BLANCO MESA VERDE	Dedicated Acreage: 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**

Position **Drilling Clerk**

Company

El Paso Natural Gas Co.

Date

April 14, 1977

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

[Signature]

Certificate No. **1760**

WELL LOCATION AND ACREAGE DEDICATION AT

Supersedes U-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

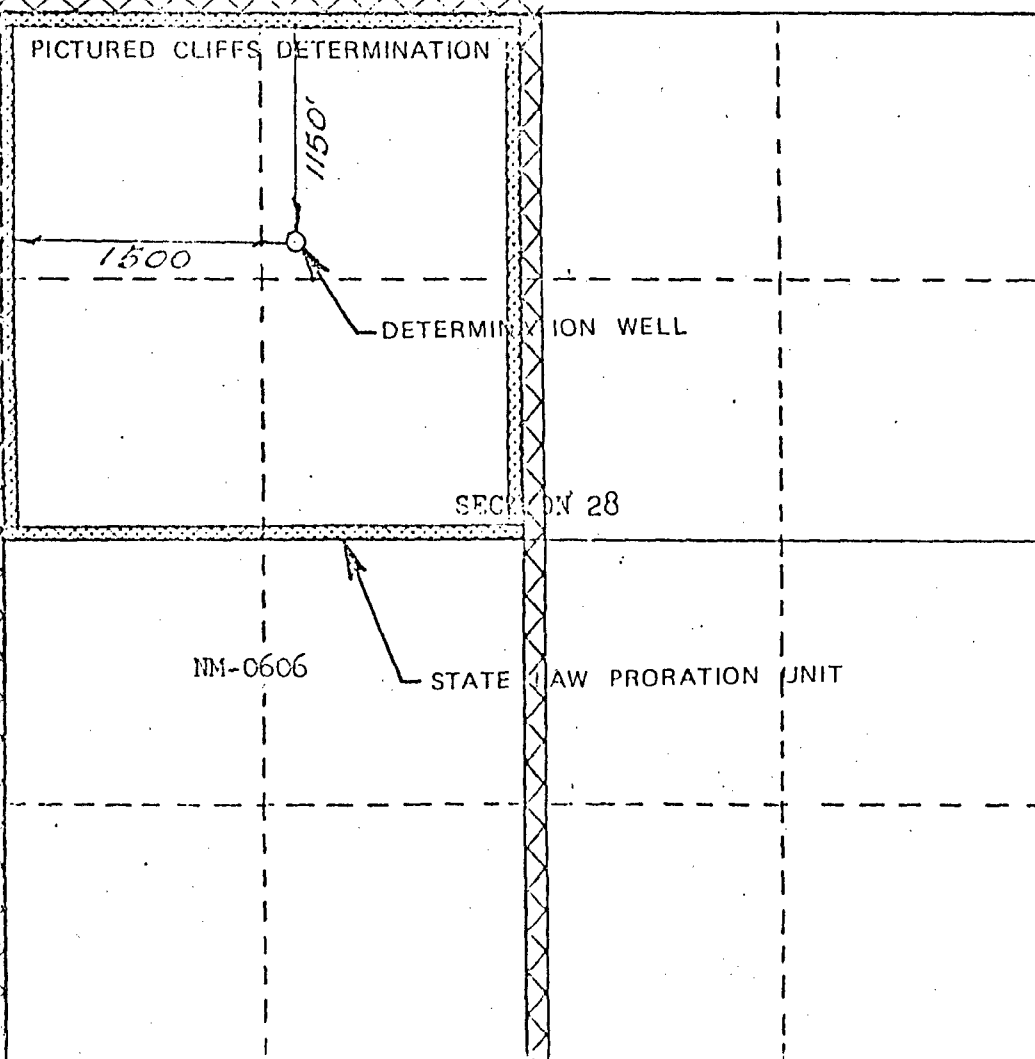
Operator EL PASO NATURAL GAS COMPANY		Lease ATLANTIC A (NM-0606)		Well No. 3A
Unit Letter C	Section 28	Township 31-N	Range 10-W	County SAN JUAN
Actual Footage Location of Well: 1150 feet from the NORTH line and 1500 feet from the WEST line				
Ground Level Elev. 6045	Producing Formation MESA VERDE - PICTURED CLIFFS	Pool BLANCO PICTURED CLIFFS BLANCO MESA VERDE	Dedicated Acreage: 161.28 & 317.80 acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure 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. L. 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

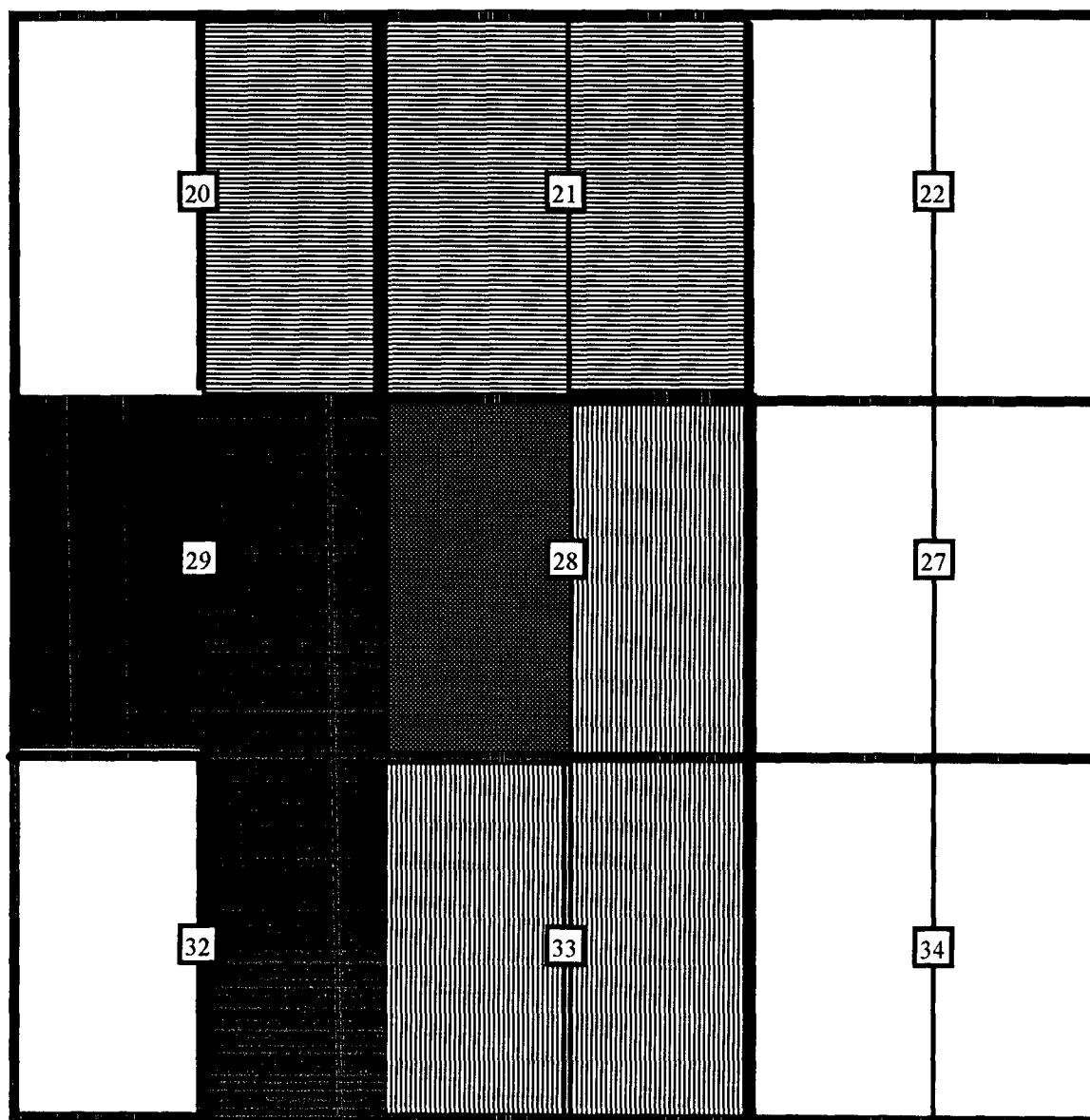
Original Signed By:
David O. Vilven

Certificate No. 1760

0 370 600 800 1150 1450 1750 2100 2400 2700 3000 3300 3600 0

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



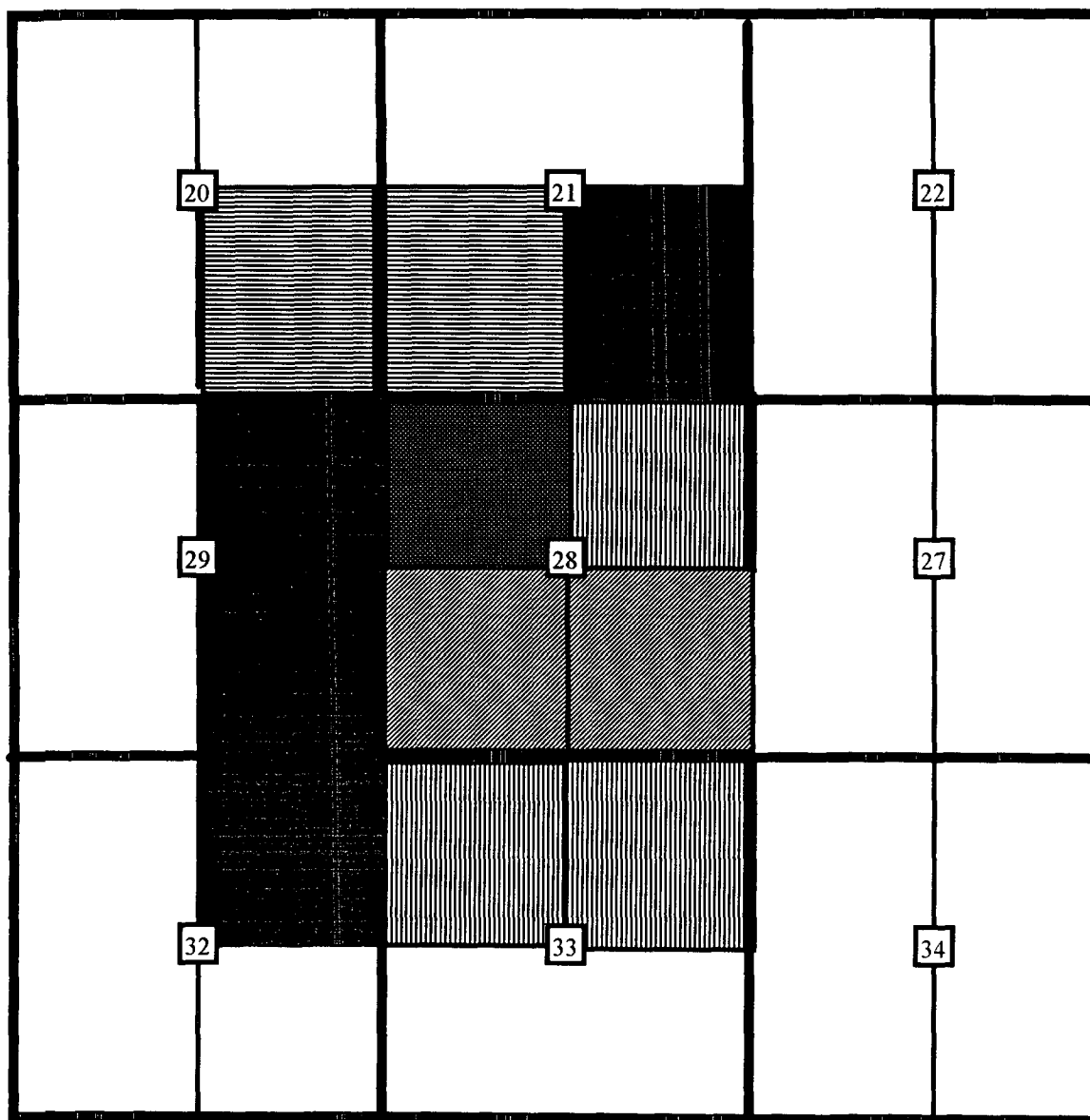
MERIDIAN OIL INC.








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: zr06

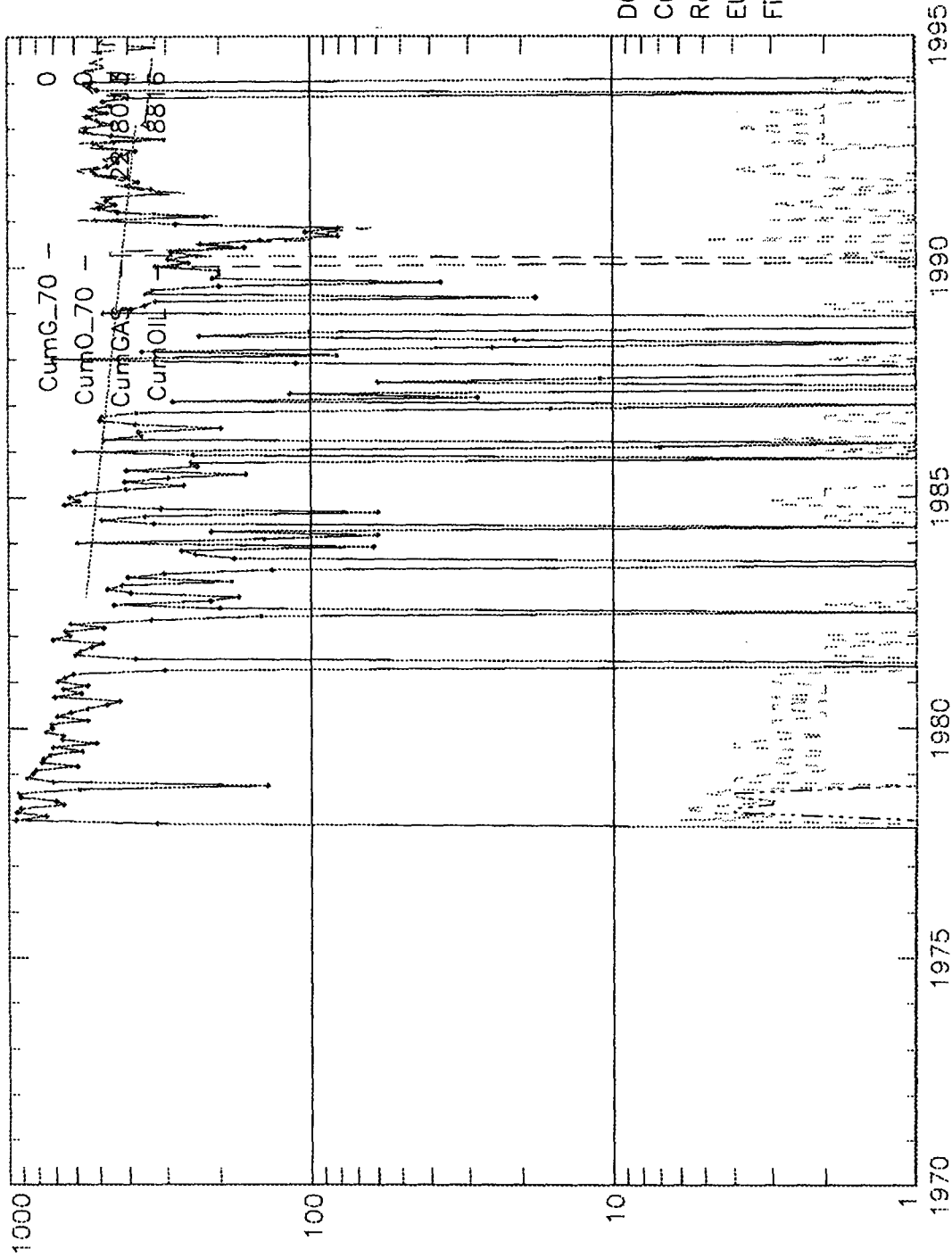
ATLANTIC A LS 3A

Operator- AMOCO PRODUCTION CO

300452250700MV

C283110-003AMV

APC_WI - 0.25000000

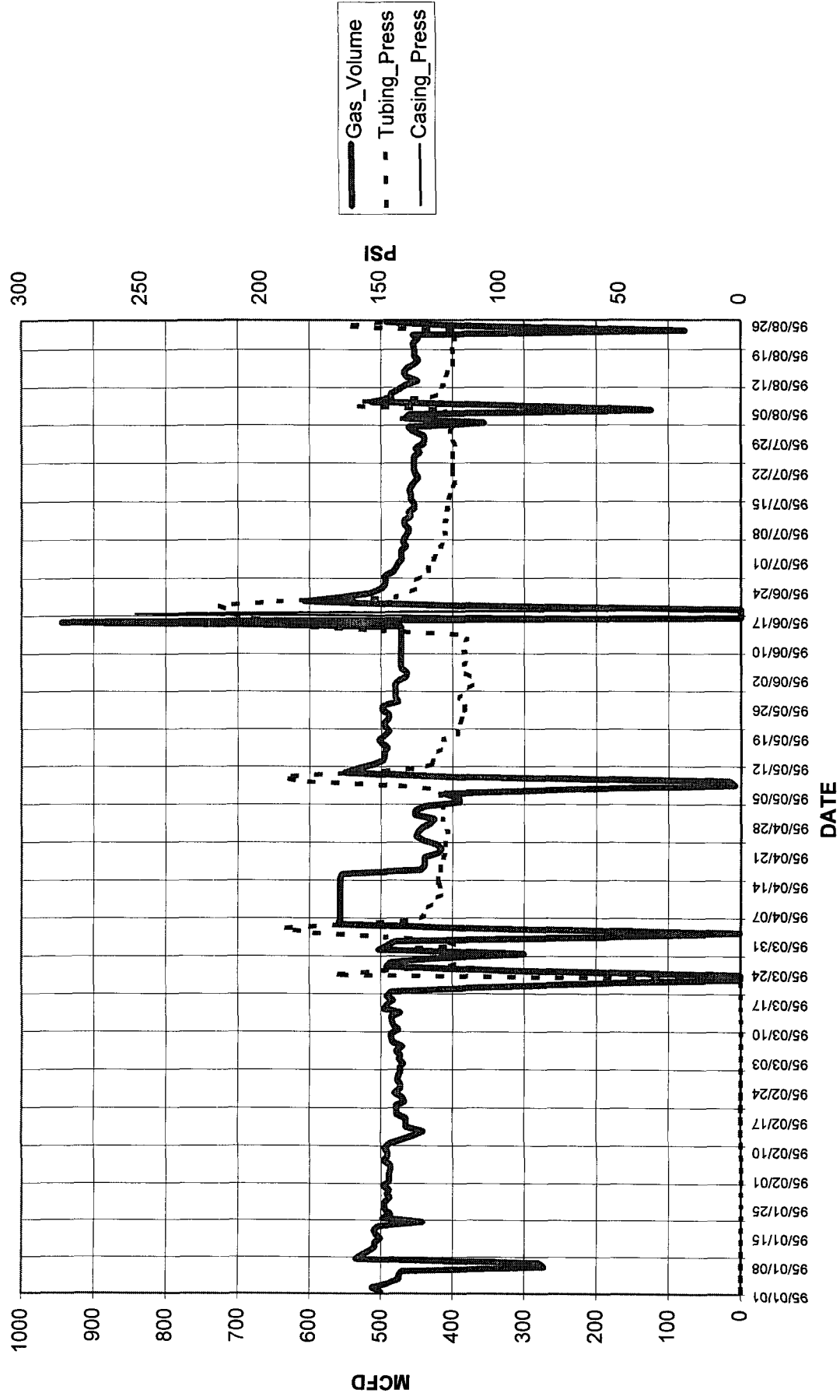


New_fit

DCLN
CurrQ
RemRes
EUR
Fit_date

Chart1

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



Engr: zr06

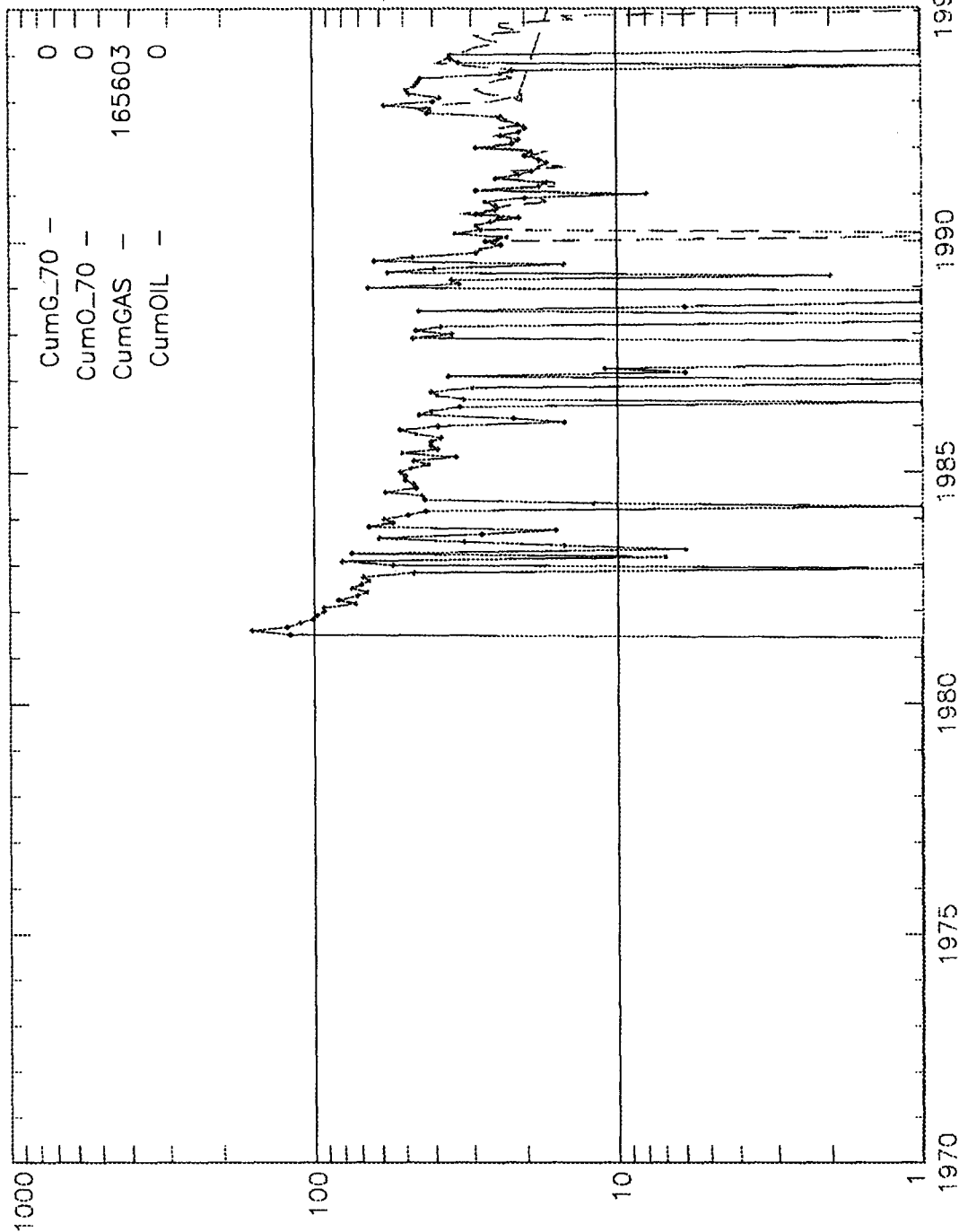
ATLANTIC A LS 3A

Operator- AMOCO PRODUCTION CO

300452250700PC

C283110-003APC

APC_WI - 0.25000000

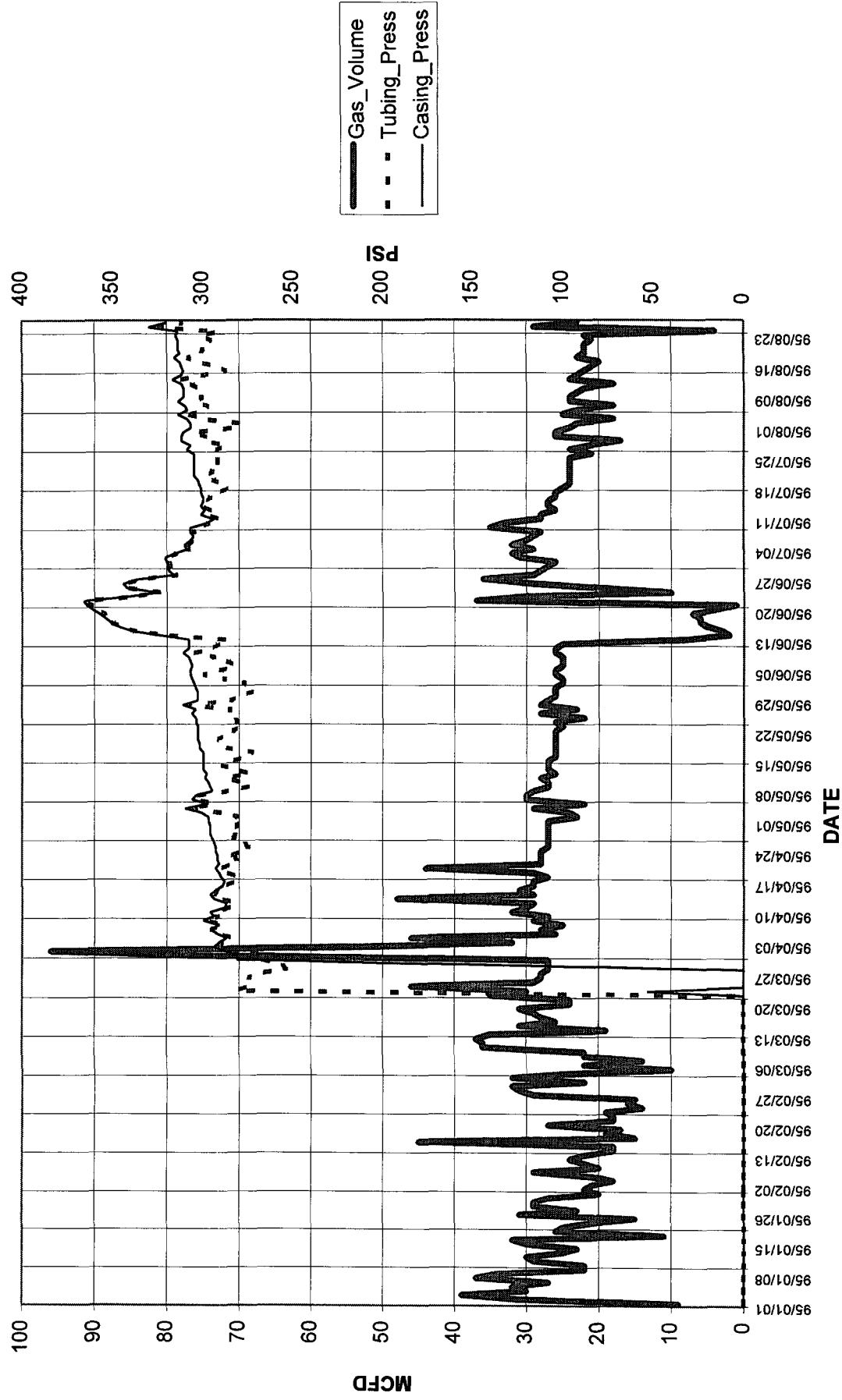


New_fit

DCLN
CurrQ
RemRes
EUR
Fit_date

Chart1

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



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



STATE OF NEW MEXICO

ENERGY, MINERALS and NATURAL RESOURCES DIVISION

OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

RECEIVED

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

95 SEP 22 AM 8 52

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6170

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 9/5/95
for the Amoco Atlantic ALS #3A
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,

[Signature]