OIL CONSERVATION DIVISION
RECEIVED
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DHC 11.27.95
1174

Southern Rockies Business Unit

November 2, 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
Hughes B #3A Well
800' FSL & 1700' FEL, Unit O Section 20-T29N-R8W
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 Hughes B #3A well referenced above. The Hughes B #3A is currently a dual completion in the Mesaverde and Pictured Cliffs formations. We plan to complete the well with both the Mesaverde and Pictured Cliffs formations being downhole commingled in the wellbore. 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 additional Pictured Cliffs production. The two zones are expected to produce at a total commingled rate of about 650 MCFD with a small amount of condensate from the Mesaverde formation. The ownership (WI, RI,ORI) of these pools is common 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 once total commingled production rates are established that the Pictured Cliffs be allocated the percent difference between the stabilized Mesaverde producing rate and total stabilized commingled production. The Mesaverde is currently producing 320 MCFD. The allocation percentages would then be set as a percentage of the total rate attributing 320 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. The Pictured Cliffs has produced negligible amounts of condensate in the past and has not produced any condensate since 1991. Therefore we recommend allocating 100% of

condensate 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 formation, a historical and recent production plot and a C-102 for each formation. This spacing unit is located on a federal lease (SF-078046) and we will send a copy of the application to the BLM as their notice. Should you have questions concerning this matter, please contact me at (303) 830-5344.

Sincerely,

Pamela W. Staley

Enclosures

cc: Stan Kolodzie
Lois Raeburn

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:	Hughes B
Well Number:	3A
Well Location:	800' FSL & 1700' FEL Unit O Section 20-T29N-R8W San Juan County, New Mexico
Pools Commingled:	Blanco Mesaverde Pool Blanco Pictured Cliffs Pool

(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 320 MCFD and 1 BCPD. The Blanco Pictured Cliffs zone produced at an average rate of about 32 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 72 hour shut-in pressures during a packer leakage test for the well. Estimated bottomhole pressure in the Pictured Cliffs formation is 569 PSI while the estimated bottomhole pressure in the Mesaverde is 631 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 two formations do not produce any fluids that, when combined, would prohibit commingling or promote the creation of emulsions or scale .

(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:

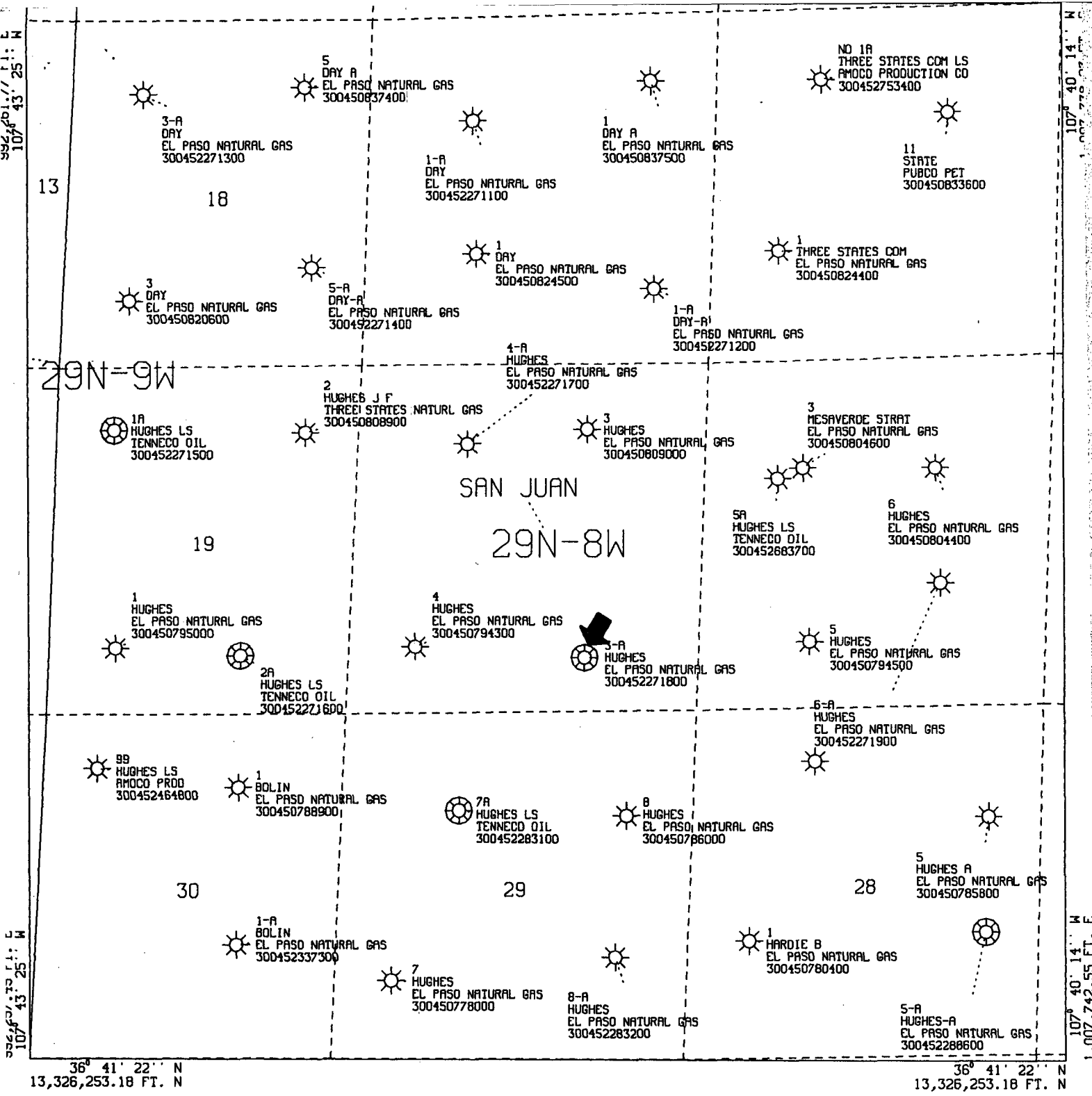
Since the BTU content of the produced gasses are very similar, we would expect the commingled production to have a similar value as the sum of the individual streams.

(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 once total commingled production rates are established that the Pictured Cliffs be allocated the percent difference between the stabilized Mesaverde producing rate and total stabilized commingled production. The Mesaverde is currently producing 320 MCFD. The allocation percentages would then be set as a percentage of the total rate attributing 320 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. The Pictured Cliffs has produced negligible amounts of condensate in the past and has not produced any condensate since 1991. Therefore we recommend allocating 100% of condensate 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.

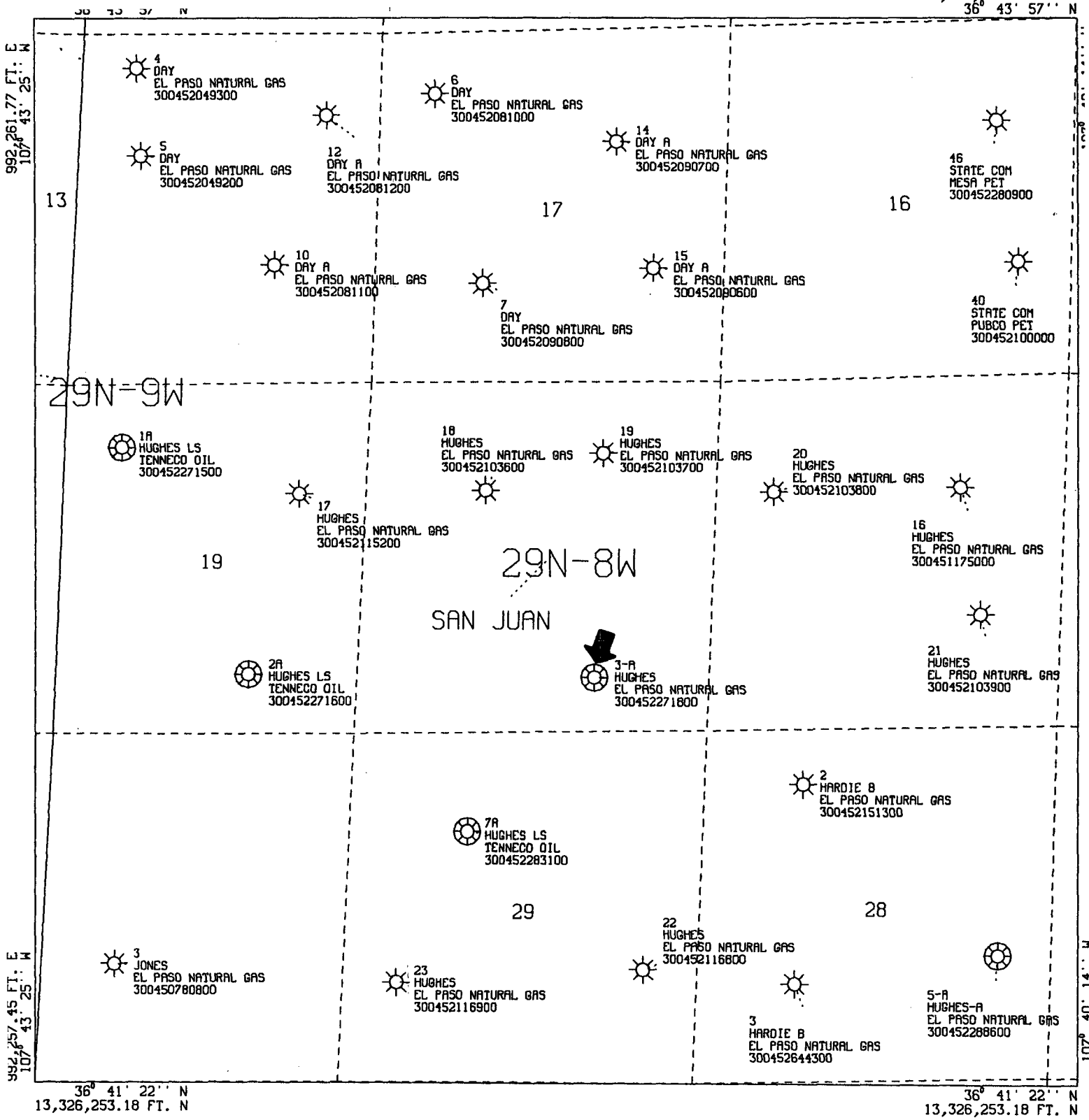
BLM will receive a copy of this application by certified mail. The offsetting operators listed on the attached sheet will receive a copy of this application by certified mail.



POLYCONIC CENTRAL MERIDIAN - 107° 41' 49" W LON
SPHEROID - 6

AMOCO PRODUCTION COMPANY
PLAT MAP
Hughes B 3A
Mesaverde

SCALE 1 IN. = 2,000 FT. MAY 16, 1995



POLYCONIC CENTRAL MERIDIAN - 107° 41' 49'' W LON
SPHEROID - 6

AMOCO PRODUCTION COMPANY
PLAT MAP
Hughes B 3A
Pictured Cliffs

SCALE 1 IN. = 2,000 FT. MAY 16, 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	Lease	Well No.
EL PASO NATURAL GAS COMPANY	HUGHES (SF 078046)	3A

Unit Letter	Section	Township	Range	County
O	20	29-N	8-W	SAN JUAN

Actual Footage Location of Well: 800 feet from the SOUTH line and 1700 feet from the EAST line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
6438	MESA VERDE	BLANCO MESA VERDE	320.00 Acres

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

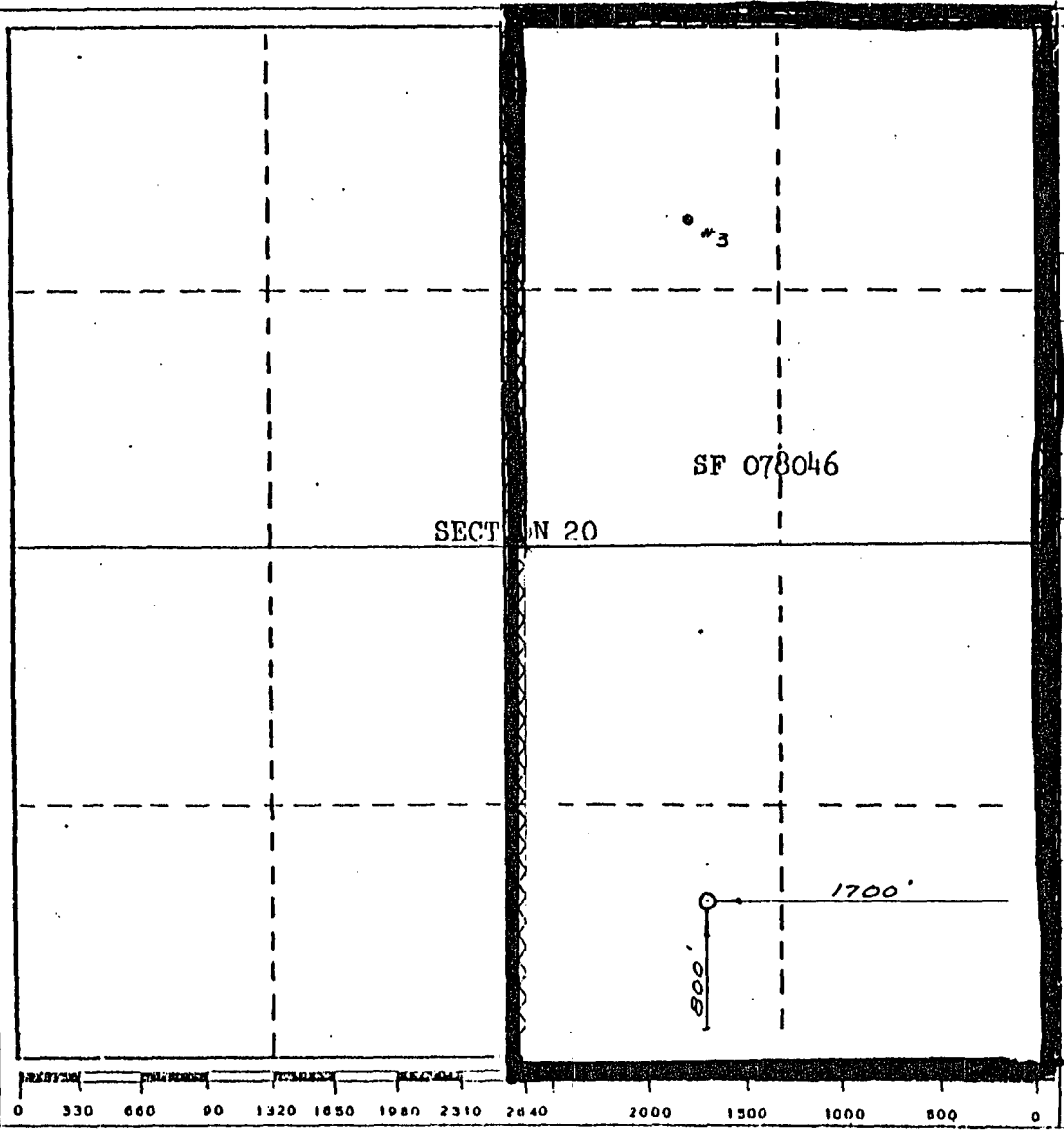
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

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 D. G. Brisco

Name: Drilling Clerk

Position: El Paso Natural Gas Co.

Company: August 31, 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: JULY 20, 1977

Registered Professional Engineer and/or Land Surveyor

Certificate No. 1760

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

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

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EL PASO NATURAL GAS COMPANY	HUGHES (SF 078046)	3A

Unit Letter	Section	Township	Range	County
O	20	29-N	8-W	SAN JUAN

Actual Footage Location of Well:
800 feet from the SOUTH line and 1700 feet from the EAST line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
6438	PICTURED CLIFF	BLANCO PICTURED CLIFFS	160.00 & 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.) _____

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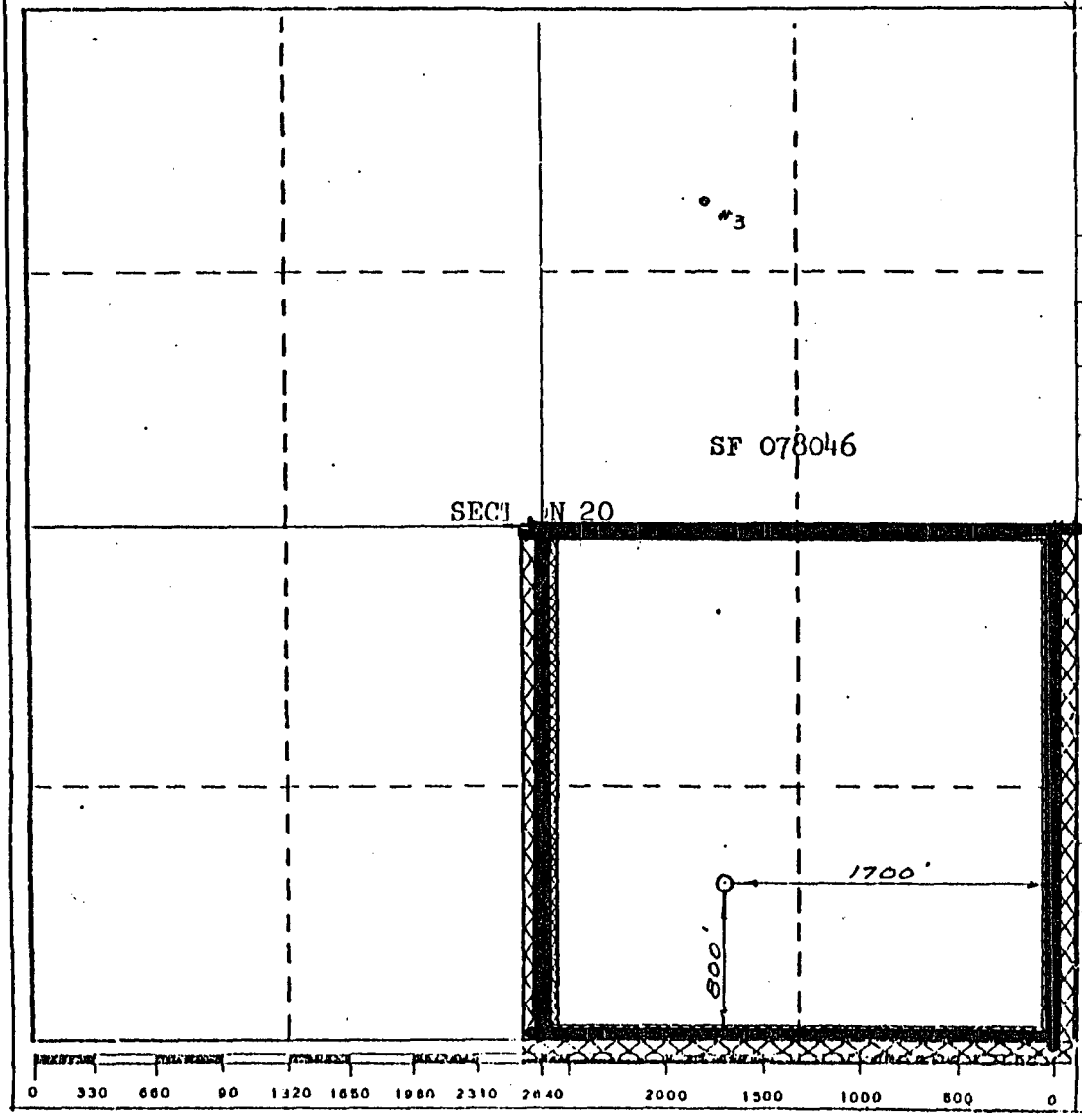

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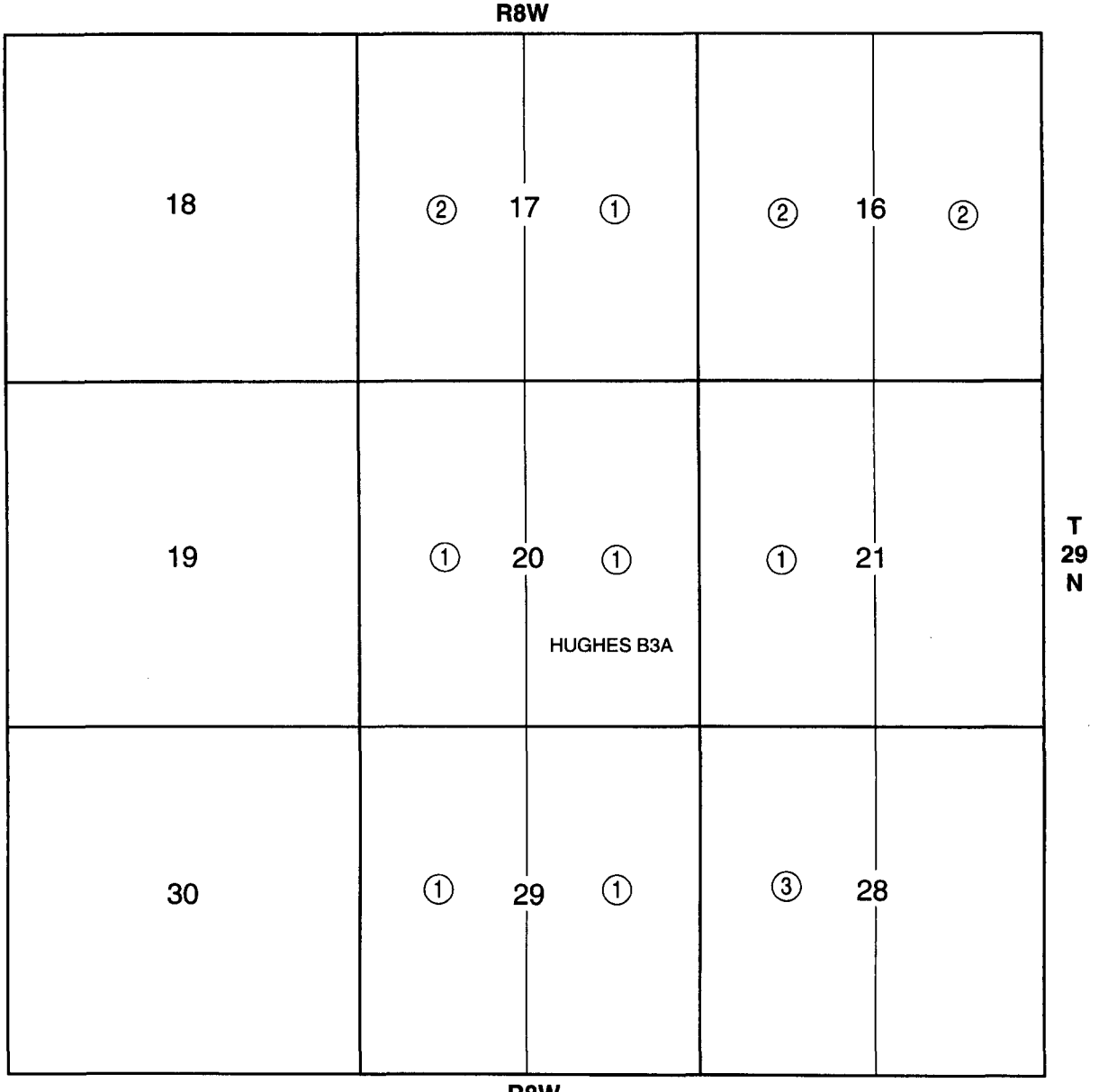
Date Surveyed
JULY 20, 1977
Registered Professional Engineer and/or Land Surveyor
Certificate No.
1760

Amoco Production Company

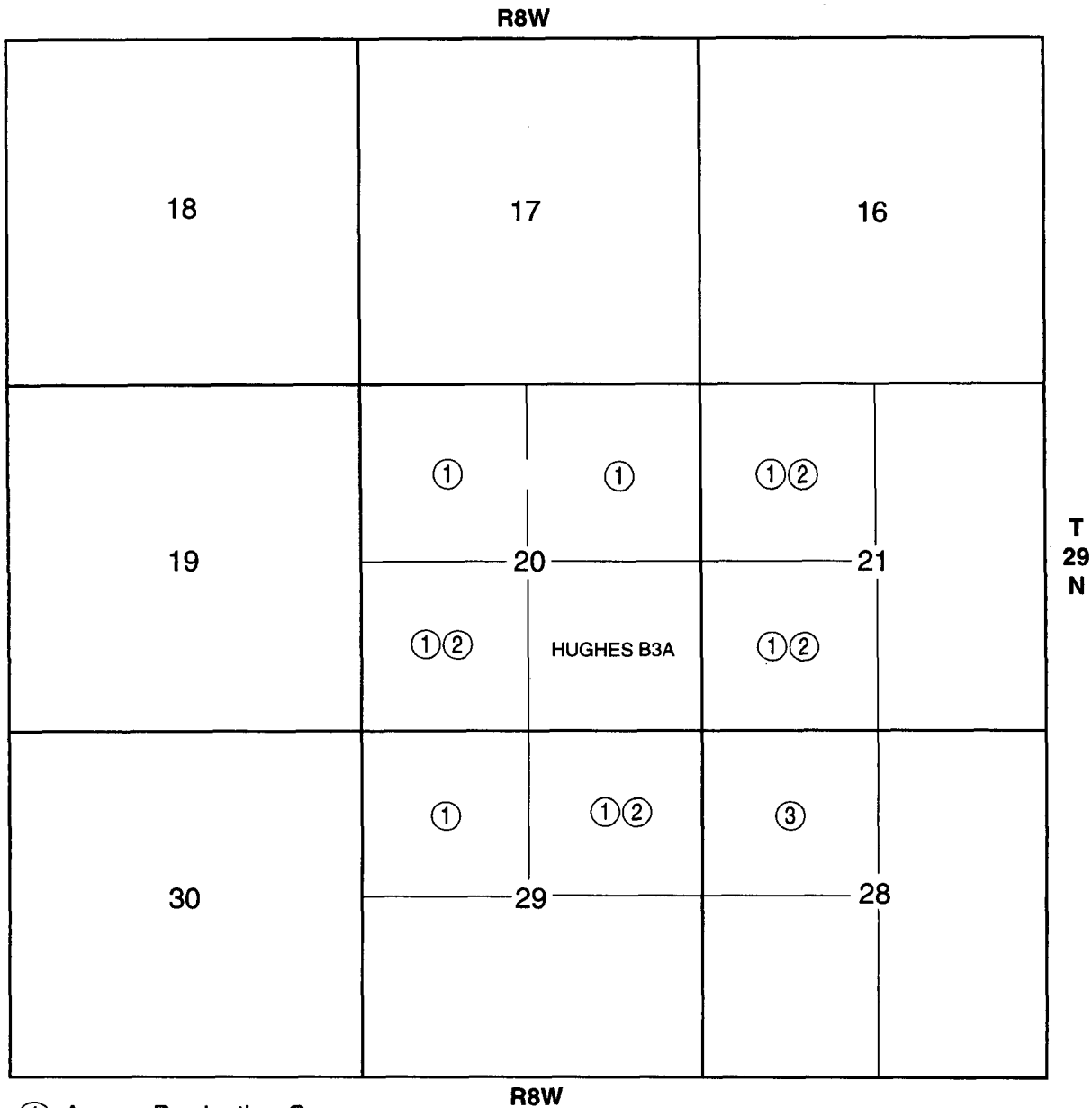
Offset Operator Plat
Hughes B3A
T29N-R8W Sec. 20
Blanco Mesaverde Formation



① Amoco Production Company
② Conoco Inc.
③ Meridian Oil Production Inc.

Amoco Production Company

Offset Operator Plat
Hughes B3A
T29N-R8W Sec. 20
Pictured Cliffs Formation



① Amoco Production Company
② Conoco Inc.
③ Meridian Oil Production Inc.

LIST OF ADDRESSES FOR OFFSET OPERATORS
Hughes B # 3A

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

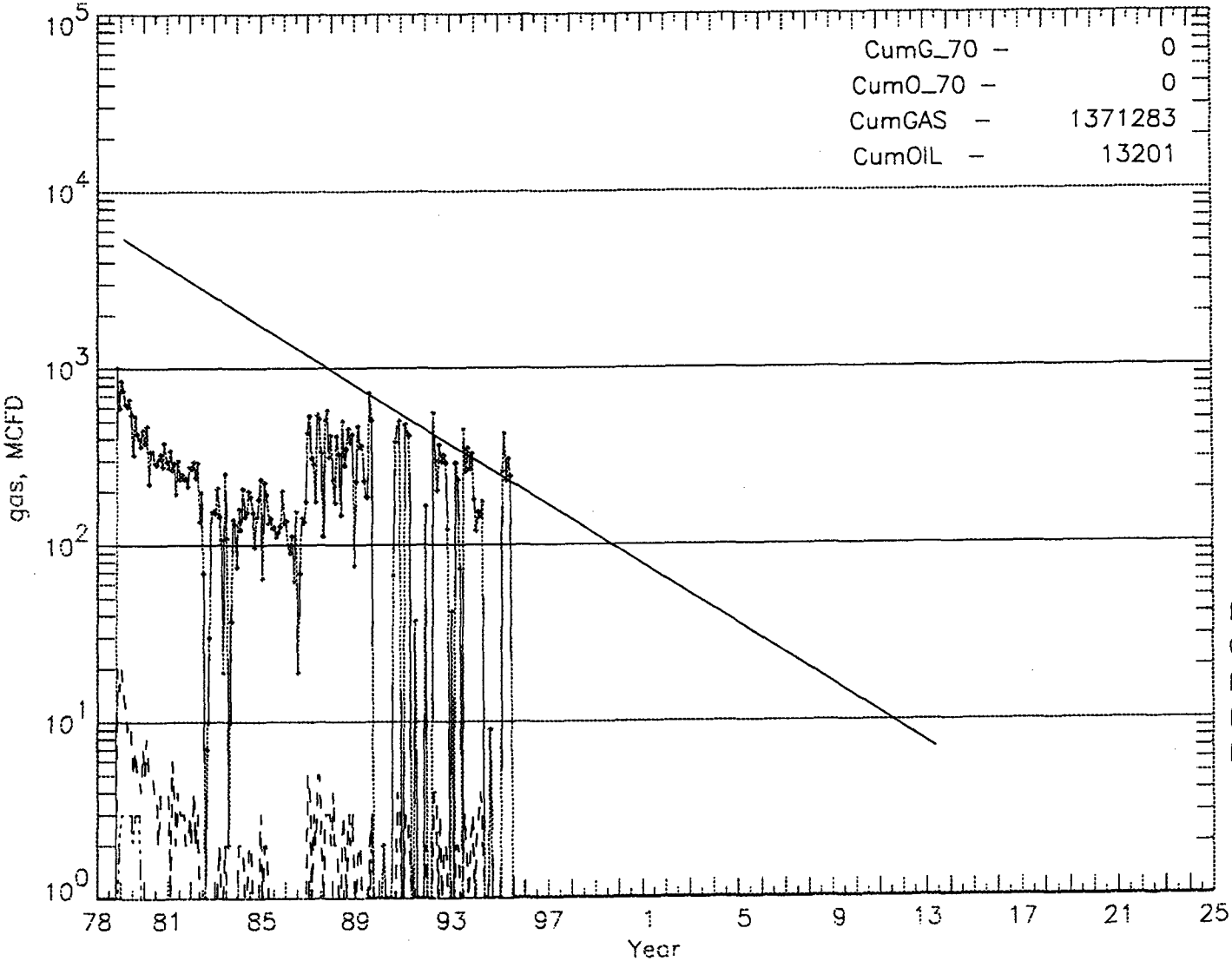
2 Conoco, Inc.
10 Desta Drive West
Midland, Texas 79705

For: zmrf14
Engr: zmrf14

HUGHES B 3A

Operator– AMOCO PRODUCTION CO

300452271800MV 0202908–003AMV APC_WI – 0.50000000



Reserves

DCLN
CurrQ
RemRes
EUR
Fit_date

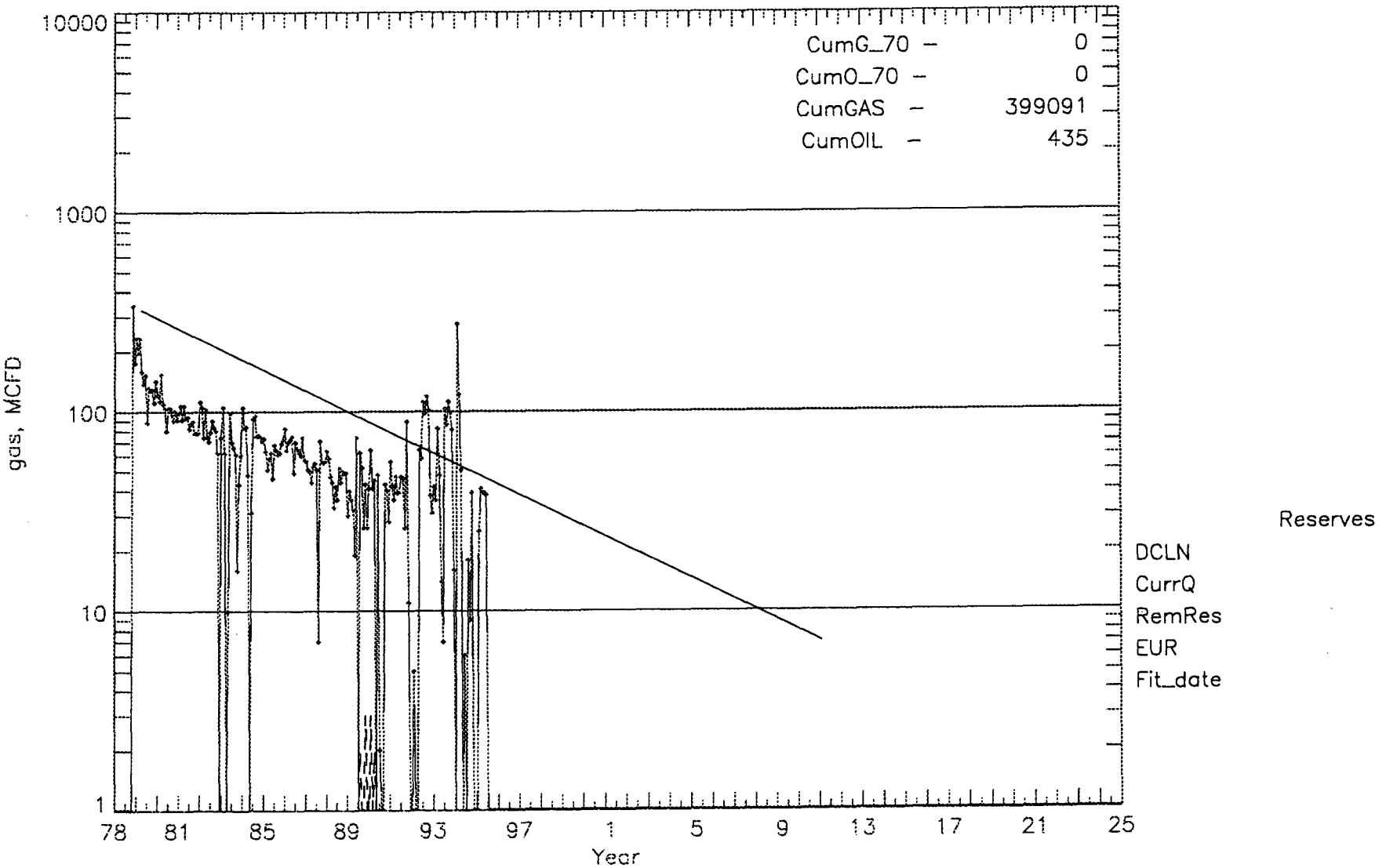
Last Op. Forecast by zmrf14 in 07/1994

For: zmrf14
Engr: zmrf14

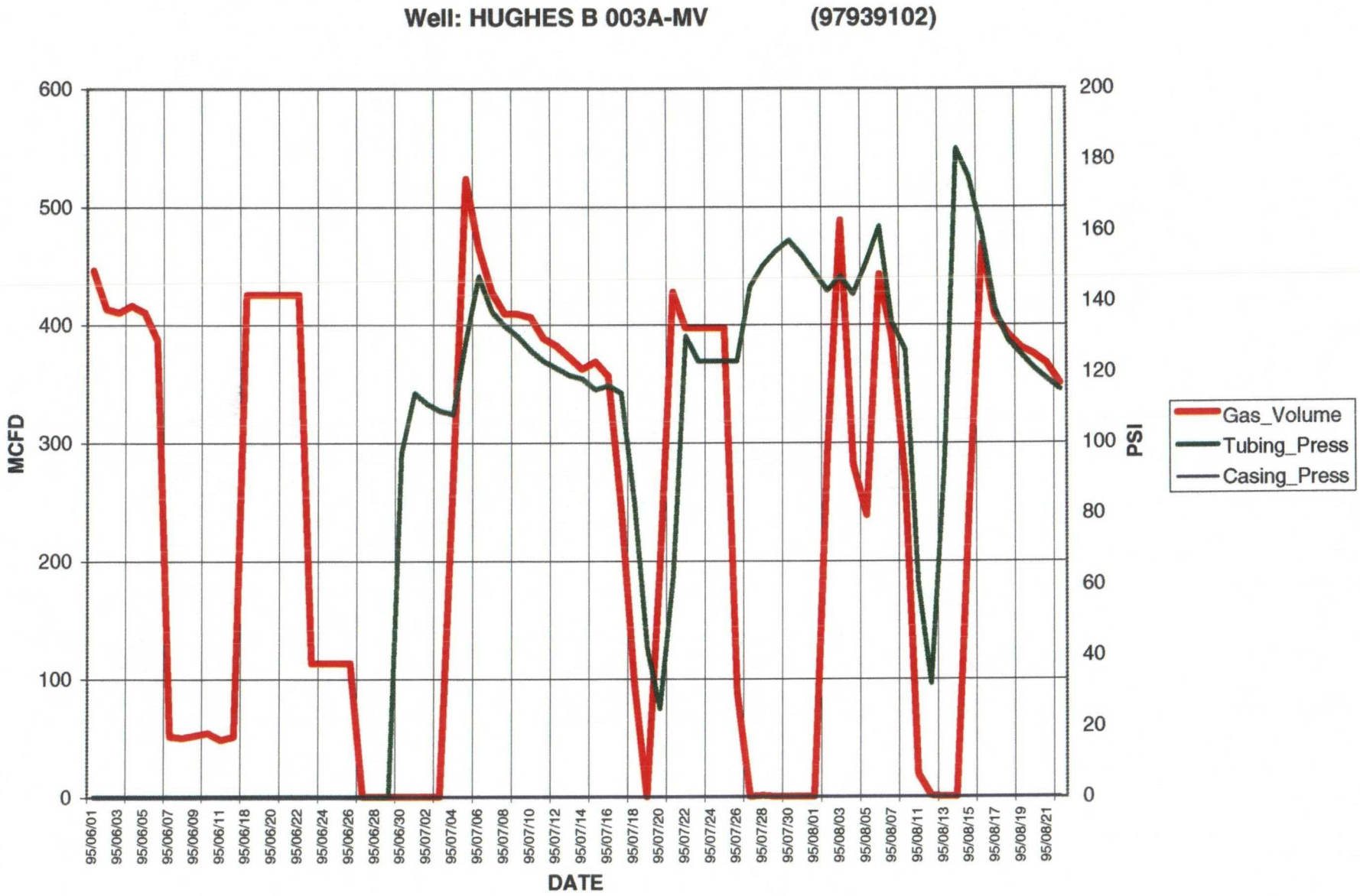
HUGHES B 3A

Operator- AMOCO PRODUCTION CO

300452271800PC 0202908-003APC APC_WI - 0.50000000



Last Op. Forecast by zmrf14 in 07/1994


Well: HUGHES B 003A-MV (97939102)
MCFD
PSI
DATE
600
500
400
300
200
100
0
200
180
160
140
120
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80
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40
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95/06/01
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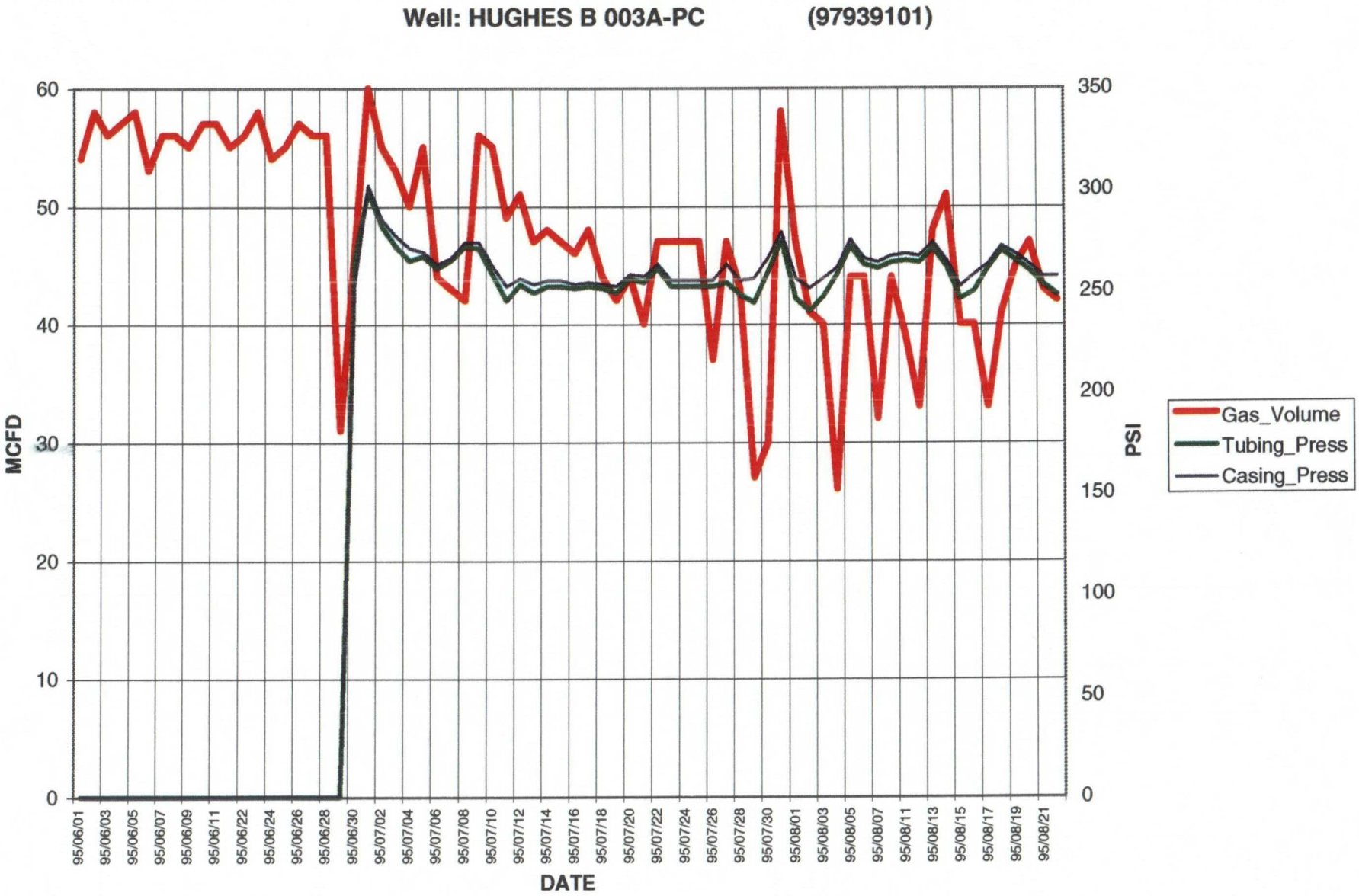
95/08/19
95/08/21
Gas_Volume
Tubing_Press
Casing_Press


Well: HUGHES B 003A-PC (97939101)
MCFD
PSI
DATE
Gas_Volume
Tubing_Press
Casing_Press
0
10
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30
40
50
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0
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100
150
200
250
300
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95/06/01
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95/08/17
95/08/19
95/08/21

0-20-29-8

STATE OF NEW MEXICO
ENERGY and MINERALS DEPARTMENT

Location of Well: 0202908 Page 1

OIL CONSERVATION DIVISION
NORTHWEST NEW MEXICO PACKER-LEAKAGE TEST

Operator: AMOCO PRODUCTION COMPANY Lease/Well #:HUGHES B 003A
Meter #:90215 RTU:1-052-11 County:SAN JUAN

	NAME RESERVOIR OR POOL	TYPE PROD	METHOD PROD	MEDIUM PROD
UPR COMP	HUGHES B 003A PC 90215	GAS	FLOW	TBG
LWR COMP	HUGHES B 003A MV 90216	GAS	FLOW	TBG

PRE-FLOW SHUT-IN PRESSURE DATA

	Hour/Date Shut-In	Length of Time Shut-In	SI Press. PSIG	Stabilzed
UPR COMP	03/~~22~~ 21/95	72 hrs	328	yes
LWR COMP	03/~~22~~ 21/95	72 hrs	219	yes

FLOW TEST DATE NO.1

Commenced at (hour,date)* Zone Producing (Upr/Lwr)

TIME (hour, date)	LAPSED TIME SINCE*	PRESSURE Upper (Tbg / Csg.)	PRESSURE Lower	Prod Temp.	REMARKS
03/~~22~~ 21/95	Day 1	271 / 280	211		Both Zones SI
03/~~23~~ 22/95	Day 2	327 / 331	217		Both Zones SI
03/~~24~~ 23/95	Day 3	328 / 331	220		Both Zones SI
03/~~25~~ 24/95	Day 4	328 / 331	219		FLOW UPPER ZONE Turn on P.C.
03/~~26~~ 25/95	Day 5	286 / 293	220		" " "
03/~~27~~ 26/95	Day 6	280 / 282	221		" " "

Production rate during test
Oil:_____ BOPD based on _____ BBLs in _____ Hrs _____ Grav___ GOR ___
Gas: _____ MFCPD:Tested theu (Orifice or Meter):METER

MID-TEST SHUT-IN PRESSURE DATA

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

(Continue on reverse side)

MANZANARES - 45

NORTHWEST NEW MEXICO PACKER-LEAKAGE TEST

FLOW TEST NO. 2

Commenced at (hour, date)** | Zone producing (Upper or Lower):

TIME (hour, date)	LAPSED TIME SINCE**	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 _____ 19____
New Mexico Oil Conservation Division

By _____

Title _____

Operator Amoco Production Company

By Sheri Bradshaw

Title Field Tech

Date 3/29/95

NORTHWEST NEW MEXICO PACKER LEAKAGE TEST INSTRUCTIONS

1. A packer leakage test shall be commenced on each multiply 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 the test is to be commenced. Offset 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 Paragraph 3 above.

6. Flow Test No. 2 shall be conducted even though no leak was indicated during Flow Test No. 1. Procedure for Flow Test No. 2 is to be the same as for Flow Test No. 1 except 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 tests: 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 tests: 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.

24-hour oil zone tests: 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 Aztec 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 temperatures (gas zones only) and gravity and GOR (oil zones only).

ESTIMATED BOTTOMHOLE PRESSURES BY FORMATION
Hughes B # 3A

MV Perforations at 4630 - 5672' midperf at 5151'
PC Perforations at 3018'

6/95 shut in pressures --- MV = 219 PSIG
PC =328 PSIG

GRADIENT = 0.08 PSI/FT

PC BHP = 328 PSIG + 3018' X 0.08 PSIG
=569 PSIG

MV BHP = 219 psig +5151' X 0.08 PSIG
=631 PSIG

DHC-1174

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

RECEIVED
95 NOV 13 AM 8 52
OIL CONSERVATION DIVISION

GARY E. JOHNSON
GOVERNOR

JENNIFER A. SALISBURY
CABINET SECRETARY

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178 FAX: (505) 334-6170

Date: Nov. 9, 1995

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 Nov. 6, 1995
for the Amoco Vaughn B #3A
OPERATOR LEASE & WELL NO.

O-20-29N-6W and my recommendations are as follows:
UL-S-T-R

Approve

Yours truly,