DHC 10-7-95

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

RECEIVED
SEP 18 1995
OIL CONSERVATION DIVISION

Application for Exception to Rule 303-C
Downhole Commingling
Jicarilla 155 #23 Well
910' FSL & 1850' FWL, Unit N Section 32-T26N-R5W
Blanco Mesaverde and Otero Chacra Pools
Rio Arriba County, New Mexico

Amoco Production Company hereby requests administrative approval to downhole commingle production from the Blanco Mesaverde and Otero Chacra Pools in the Jicarilla 155 #23 Well referenced above. The Jicarilla 155 #23 well was originally a dual completion in the Mesaverde and Chacra formations. This well has a marginal Chacra formation which is being produced dually with a marginal Mesaverde. If this well is left as a dual completion, the marginal zones will not be economic much longer. We plan to complete the well with both the Mesaverde and Chacra formations being downhole commingled in the wellbore. The two zones are expected to produce at a total commingled rate of about 144 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 49% from the Mesaverde formation and 51% from the Chacra formation. The Chacra 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 155
Well Number:	23
Well Location:	910' FSL & 1850' FWL Unit N Section 32-T26N-R5W Rio Arriba County, New Mexico
Pools Commingled:	Otero Chacra 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 27 MCFD and 0 BCPD. The Chacra zone produced at an average rate of about 37 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.

Otero Chacra 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 Chacra formation is calculated to be 668 PSIG while estimated bottomhole pressure in the Mesaverde formation is 1005 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 Chacra 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:

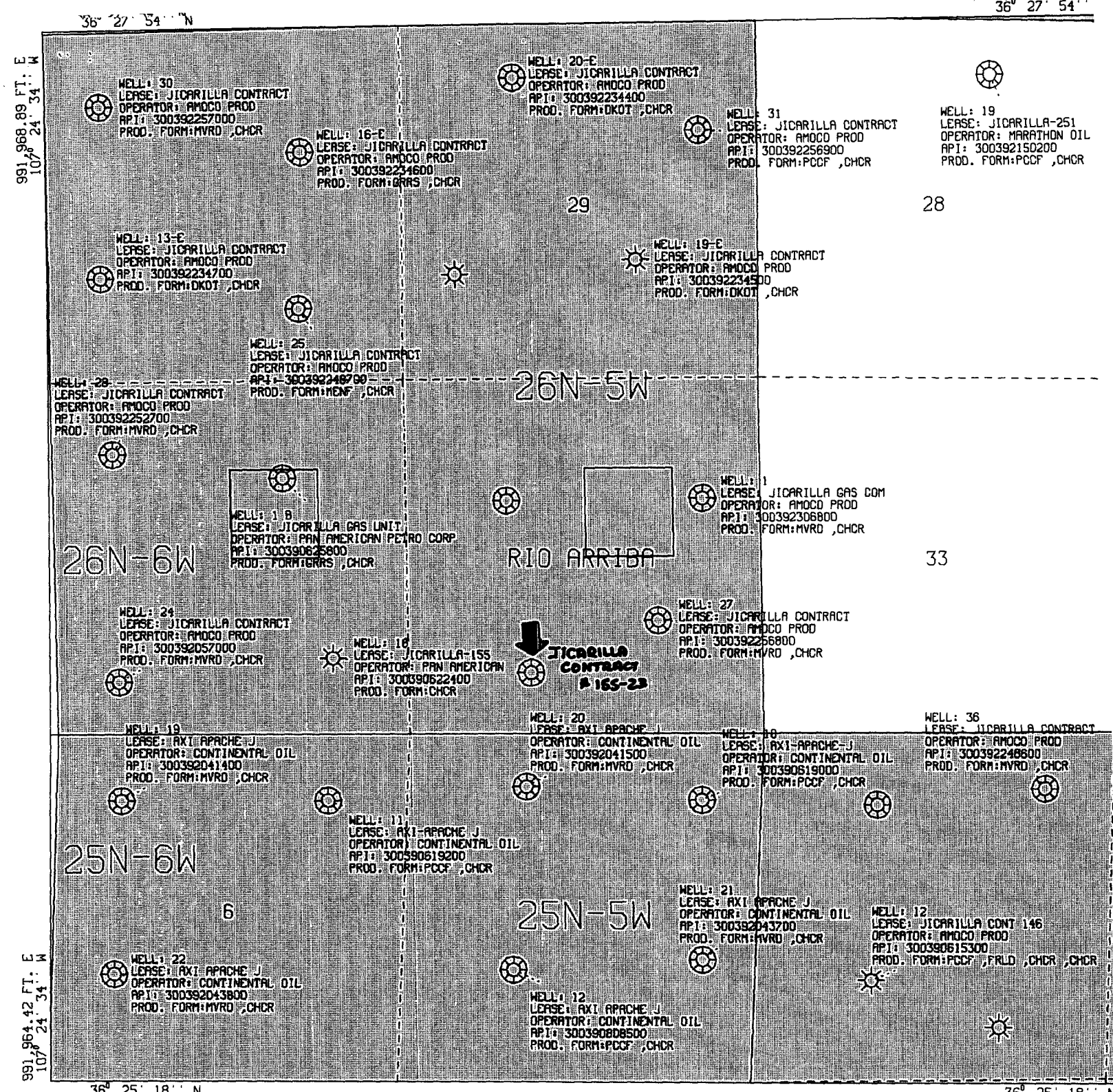
The BTU content of the produced streams are very similar and as such, we would expect the commingled production to have the same value as the sum of the individual streams.

(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 49% from the Mesaverde formation and 51% from the Chacra formation. The Chacra 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.

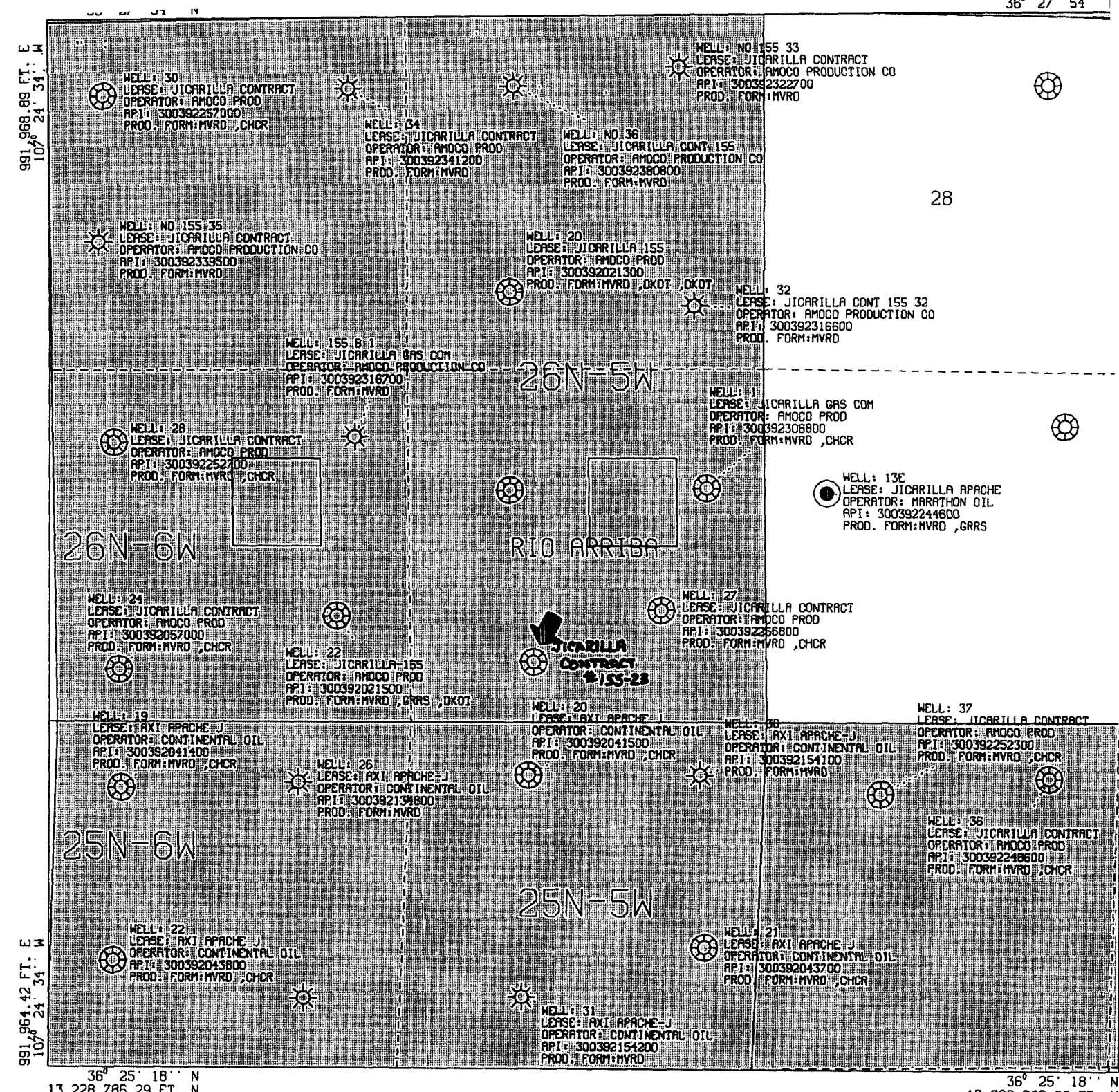
(10) A statement that all offset operators and, in the case of a well on federal land, the United States Bureau of Land Management, have been notified in writing of the proposed commingling.

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.



AMOCO PRODUCTION COMPANY
PLAT MAP
Jicarilla Contract 155-23 Sec. 32-T26N-R05W
Rio Arriba New Mexico FM: CHCR

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



AMOCO

AMOCO PRODUCTION COMPANY
PLAT MAP
Jicarilla Contract 155-23 Sec. 32-T26N-R05W
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

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.
Amoco Production Company	Jicarilla Contract 155	23

Unit Letter	Section	Township	Range	County
N	32	26N	5W	Rio Arriba

Actual Footage Location of Well:
910 feet from the South line and 1850 feet from the West line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
6495 ungr.	Mesa Verde-Chacra	Otero Chacra-Gonzales Mesa Pool Ext.	160 Acres

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

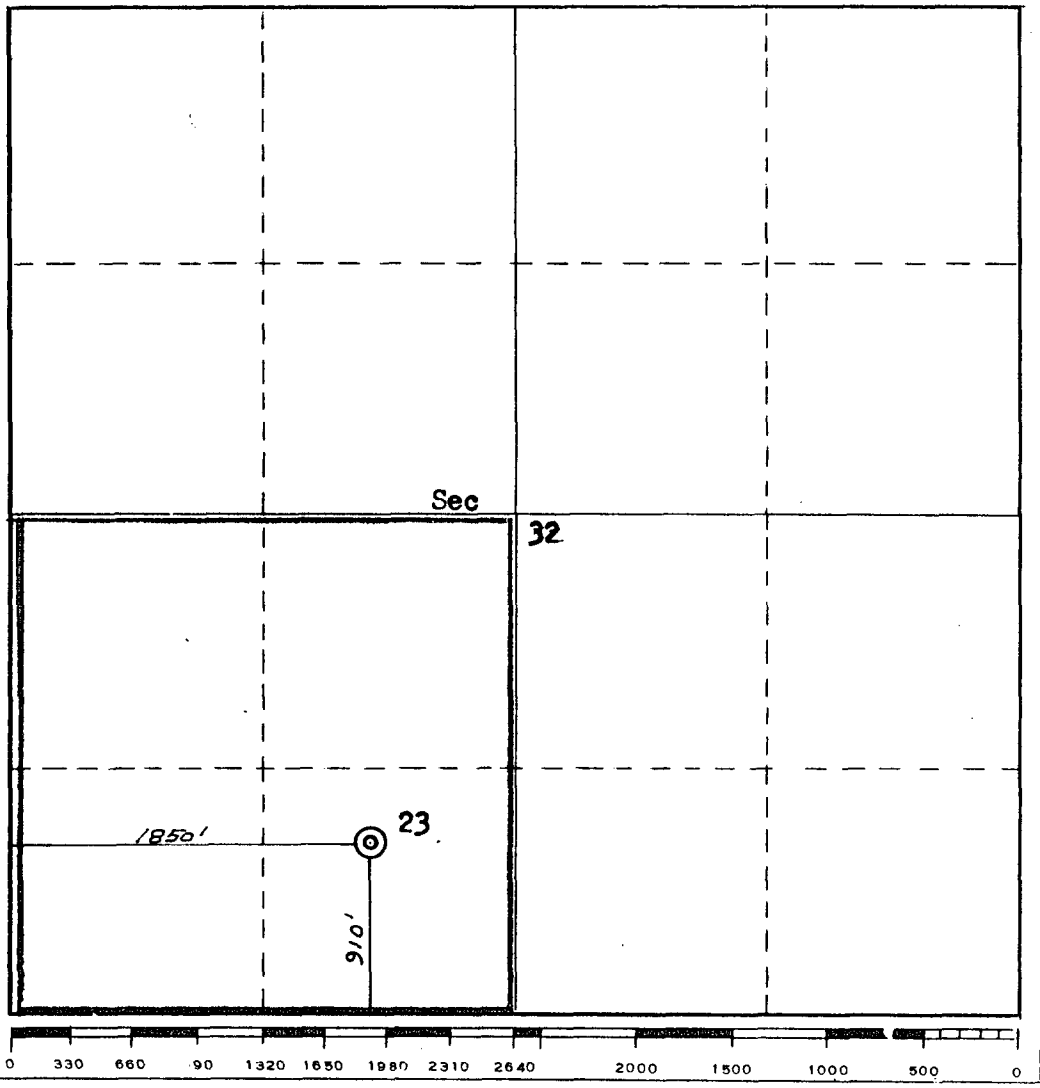
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

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.

J. Arnold Snell

Name: J. Arnold Snell

Position: Area Engineer

Company: AMOCO PRODUCTION COMPANY

Date: September 27, 1972

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: September 22, 1972

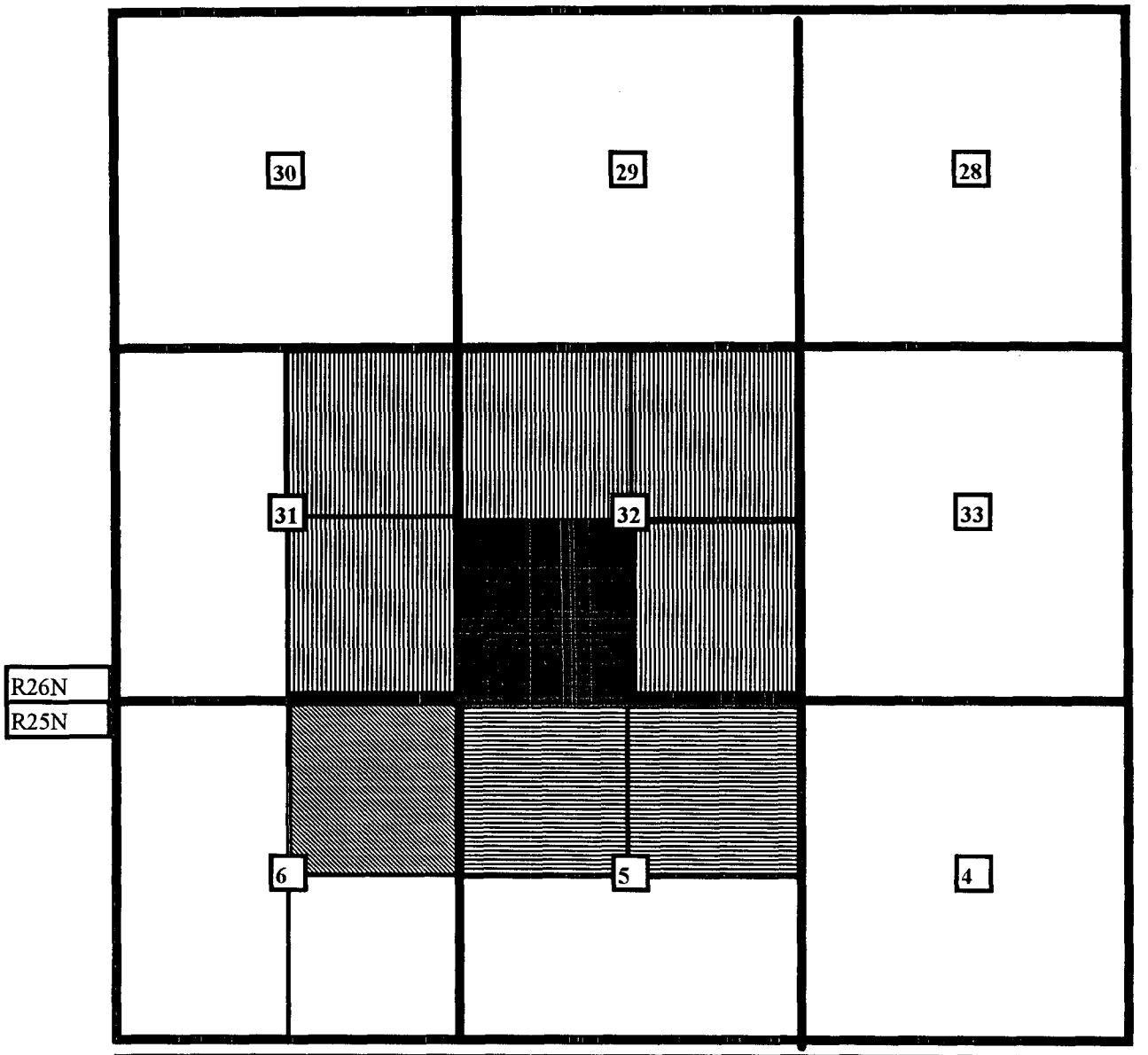
Registered Professional Engineer and/or Land Surveyor

Fred B. Kerr Jr.

Certificate No: 3950

AMOCO PRODUCTION COMPANY OFFSET OPERATOR PLAT

Jicarilla 155 #23 Well
910' FSL & 1850' FWL
Unit N Section 32-T26N-R5W
Mesaverde and Otero Chacra Pools



SPACING UNIT TO BE DOWNHOLE COMMINGLED

AMOCO PRODUCTION COMPANY

MERIDIAN OIL, INC.

CONOCO, INC.

LIST OF ADDRESSES FOR OFFSET OPERATORS
Jicarilla 155 #32 Well

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

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

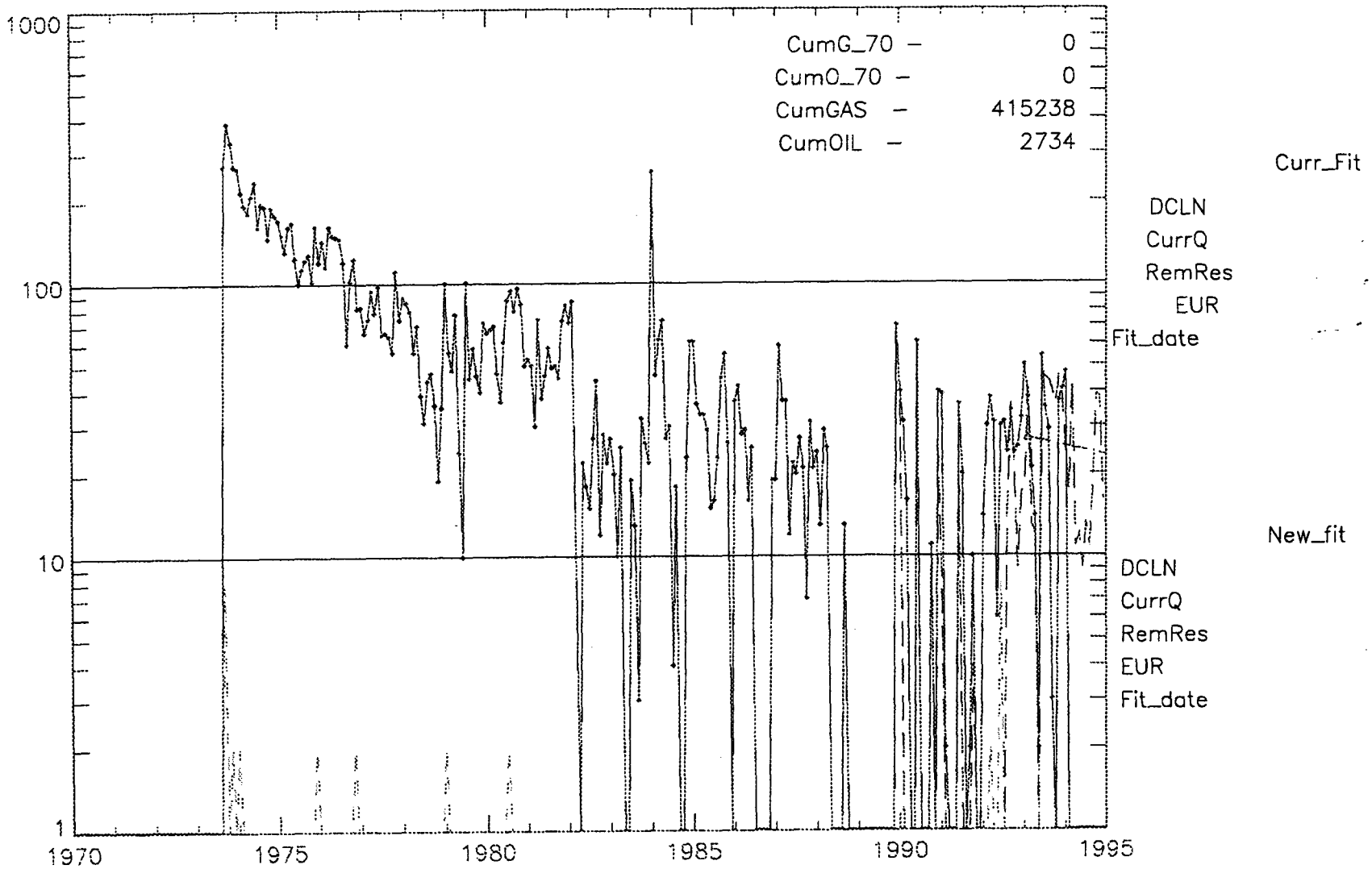
Engr: zhab0b

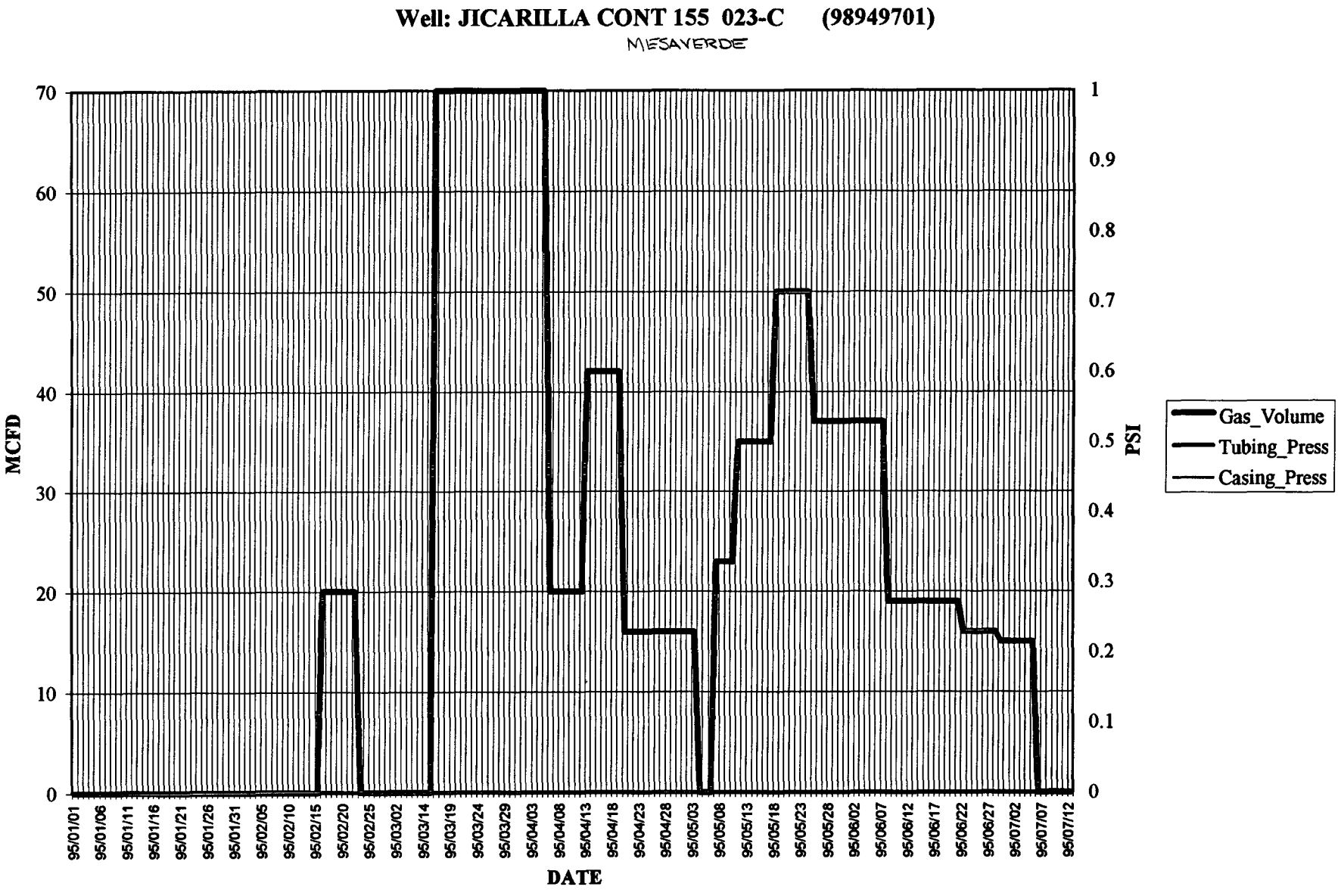
JICARILLA CONTRACT 155 23

Operator– AMOCO PRODUCTION CO

300392056900MV N322605–023 MV

APC_WI – 1.0000000




Well: JICARILLA CONT 155 023-C (98949701)
MESAVERDE
MCFD
PSI
DATE
Gas_Volume
Tubing_Press
Casing_Press
0
10
20
30
40
50
60
70
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
95/01/01
95/01/06
95/01/11
95/01/16
95/01/21
95/01/26
95/01/31
95/02/05
95/02/10
95/02/15
95/02/20
95/02/25
95/03/02
95/03/14
95/03/19
95/03/24
95/03/29
95/04/03
95/04/08
95/04/13
95/04/18
95/04/23
95/04/28
95/05/03
95/05/08
95/05/13
95/05/18
95/05/23
95/05/28
95/06/02
95/06/07
95/06/12
95/06/17
95/06/22
95/06/27
95/07/02
95/07/07
95/07/12

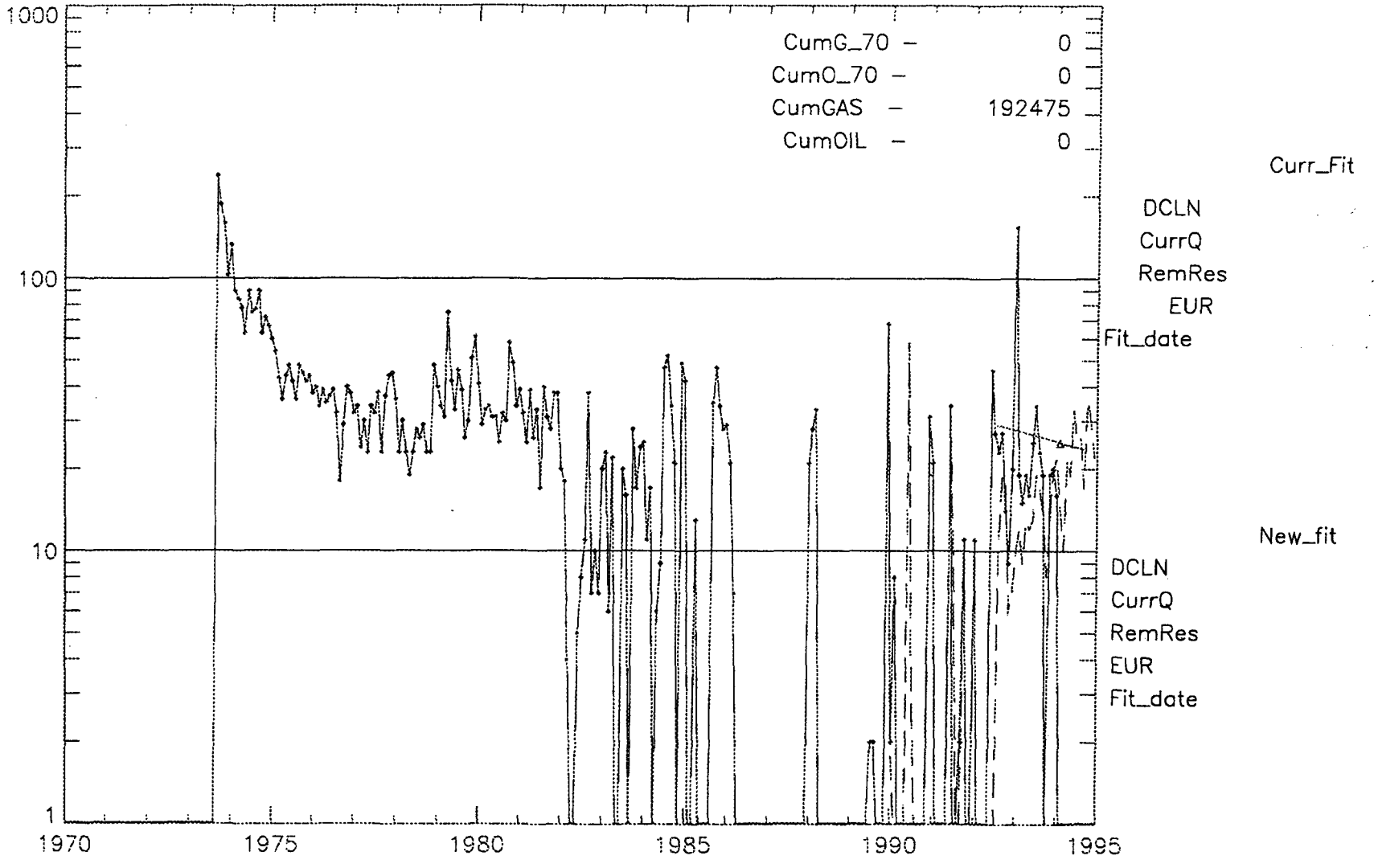
Engr: zhab0b

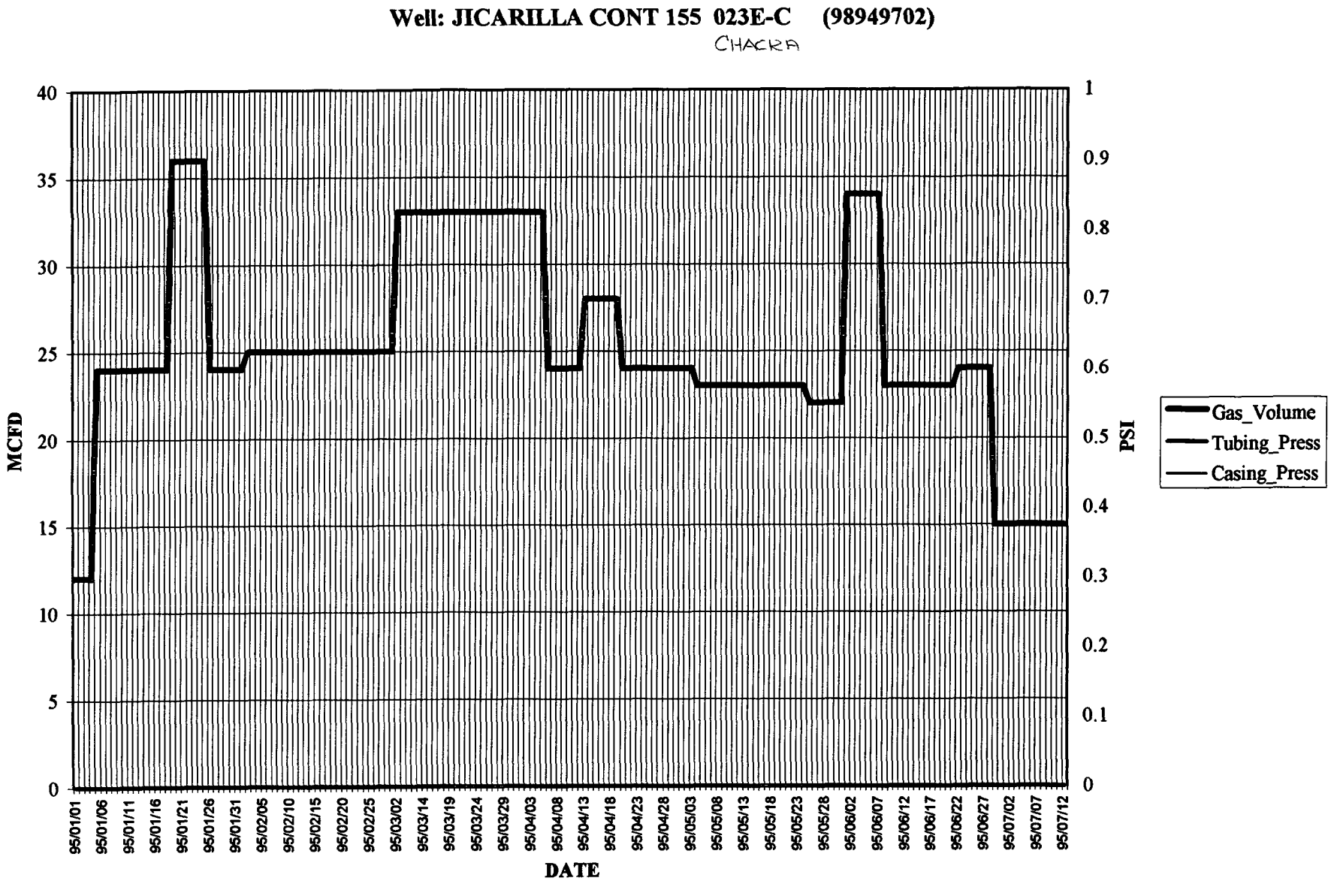
JICARILLA CONTRACT 155 23

Operator– AMOCO PRODUCTION CO

300392056900CK N322605–023 CK

APC_WI – 1.0000000




Well: JICARILLA CONT 155 023E-C (98949702)
CHACRA
MCFD
PSI
DATE
Gas_Volume
Tubing_Press
Casing_Press
0
5
10
15
20
25
30
35
40
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
95/01/01
95/01/06
95/01/11
95/01/16
95/01/21
95/01/26
95/01/31
95/02/05
95/02/10
95/02/15
95/02/20
95/02/25
95/03/02
95/03/14
95/03/19
95/03/24
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95/05/08
95/05/13
95/05/18
95/05/23
95/05/28
95/06/02
95/06/07
95/06/12
95/06/17
95/06/22
95/06/27
95/07/02
95/07/07
95/07/12

ESTIMATED BOTTOMHOLE PRESSURES BY FORMATION
JICARILLA CONTRACT #155-23

CK Perforations at 3640-3660' midperf at 3650'
MV Perforations at 4988-5128' midperf at 5058'

11/88 shut in pressures --- CK = 485 PSIG
MV = 600 PSIG

GRADIENT = 0.08 PSI/FT

CK BHP = 485 PSIG + 3650' X 0.08 PSIG
= 668 PSIG

MV BHP = 600 PSIG + 5058' X 0.08 PSIG
=1005 PSIG

668 PSIG / 1005 PSIG = 66% WHICH MEETS THE >50% RULE

STATE OF NEW MEXICO
ENERGY and MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

This form is not to be used for reporting packer leakage tests in Southeast New Mexico

NORTHWEST NEW MEXICO PACKER-LEAKAGE TEST

Operator AMOCO PRODUCTION COMPANY Lease JICARILLA CONTRACT 155 Well No. 23

Location of Well: Unit N Sec. 32 Twp. 26 Rge. 5 County RIO ARRIBA

	NAME OF RESERVOIR OR POOL	TYPE OF PROD. (Oil or Gas)	METHOD OF PROD. (Flow or Art. Lift)	PROD. MEDIUM (Tbg. or Csg.)
Upper Completion	CHACRA	GAS	FLOW	TBG.
Lower Completion	MESAVERDE	GAS	FLOW	TBG.

PRE-FLOW SHUT-IN PRESSURE DATA

	Hour, date shut-in	Length of time shut-in	SI press. psig	Stabilized? (Yes or No)
Upper Completion	8-14-88	5 days	485	yes
Lower Completion	8-14-88	3 days	600	yes

FLOW TEST NO. 1

Commenced at (hour, date)* 8-17-88 Zone producing (Upper or Lower): Lower

TIME (hour, date)	LAPSED TIME SINCE*	PRESSURE Upper Completion	PRESSURE Lower Completion	PROD. ZONE TEMP.	REMARKS
8-14-88	Day 1	485	610		Both zones SI
8-15-88	Day 2	485	600		Both zones SI
8-16-88	Day 3	485	600		Both zones SI
8-17-88	Day 4	485	600		Both zones SI
8-18-88	Day 5	485	370		Lower zone Flow
8-19-88	Day 6	485	400		Lower zone Flow

Production rate during test

Oil: _____ BOPD based on _____ Bbls. in _____ Hours. _____ Grav. _____ GOR _____

Gas: _____ MCFPD; Tested thru (Orifice or Meter): _____

MID-TEST SHUT-IN PRESSURE DATA

	Hour, date shut-in	Length of time shut-in	SI press. psig	Stabilized? (Yes or No)
Upper Completion				
Lower Completion				

(Continue on reverse side)

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 Upper Completion	PRESSURE Lower Completion	PROD. ZONE TEMP.	REMARKS

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 Charles Gholson

Title DEPUTY

Operator Amoco Production Co

By Brenda Tronbetta

Title Sts. Asst

Date 9/26/88

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 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 hour tests: immediately prior to the beginning of each flow-period, at fifteen-minute intervals during the first hour thereof, and 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 midpoint) 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 C-104, Revised 10-01-78 with all deadweight pressures indicated thereon as well as the recorded temperatures (gas zones only) and gravity and GOR (oil zones only).

STATE OF NEW MEXICO

ENERGY, MINERALS and NATURAL RESOURCES DIVISION

OIL CONSERVATION DIVISION

AZTEC DISTRICT OFFICE

RECEIVED '95 SEP 22 AM 8 52

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 9/13/95

for the Amoco Jicarilla 155 #23
OPERATOR LEASE & WELL NO.

N-32-26N-5W and my recommendations are as follows:
UL-S-T-R

Approve

The pressures are calculated incorrectly but the well still qualifies.

Yours truly,

D. Stogner