

Meads DHP order (e) • See Instructions on Reverse Side

SJOET Well Work Procedure

Wellname: JICARILLA CONTRACT 146-39
Version: 1
Date: 22-Feb-96
Budget: Repair Well Expense
Repair Type: Mill Up Packer

Objectives: Increase gas production by milling up the packer that is set between the Chacra and Maseverde formations at 3950', cleaning out the wellbore to PBTD of 5253', downhole commingling the production streams and returning the well to production with 2-3/8" tubing landed at 5228'.

Pertinent Information:

Location:	J03 25N 05W, 1600 FSL 1780 FEL	FM:	MV, CK
County:	Rio Arriba	API:	3003922522
State:	New Mexico	Engr:	Steve Smethie
Lease:	Indian	Phone:	H--(303)770-2180
Well FLAC:	842375		W--(303)830-5892

TD: 5407 PBTD: 5253

Economic Information:

APC WI:	100%	Prod. Before Work:	120 MCFD
Estimated Cost:	\$35,000	Anticipated Prod.:	270 MCFD
Payout:	9 mO		
Max Cost-12 Mo. P.O.:	\$47,000		
PV 15:	\$M		
Max Cost PV 15:	\$M		

Note: Economics will be run on all projects that have a payout exceeding ONE year.

Formation Tops:

Nacimiento:		Menefee:	4630
Ojo Alamo:	2207	Pt Lookout:	5100
Kirtland Shale:	2433	Mancos Shale:	
Fruitland:	2712	Gallup:	
Pictured	2895	Graneros:	
Lewis Shale:		Dakota:	
Cliff House:	4580	Morrison:	

Bradenhead Test Information:

Test Date: 5/26/95 Tubing: 364 Casing: 366 BH: 0

Time	BH	CSG	INT	CSG
5 min:	0	366		
10 min:	0	366		
15 min:	0	366		

Comments: MV tubing pressure = 0 psi, CH tubing pressure = 364 psi.

Suggested Procedure

1. Pull and lay down the 1-1/4" 2.4 #/Ft. J-55, IJ short string that is landed at 3818' on the Chacra side.
2. Unseat the seal assembly that is set in the Otis Model WB packer at 3950'. Pull and lay down the 2-1/16", 3.25 #/ Ft, J-55, EUE long string that is landed at 5223' on the Mesaverde side.
3. Mill up and pluck the Otis Model WB packer that is set at 3950' in 5-1/2", 15.5 #/Ft, K-55 casing. Utilize the air package with the booster compressor.
4. Clean out the wellbore to PBTD of 5253' by running a bit and scraper. Sweep the wellbore clean.
5. Trip in the hole with a Mule Shoe, Seating Nipple, and 2-3/8" tubing. Land the tubing at 5228'. Charge the cost of the 2-3/8" tubing to maintenance investment, not to the repair expense.
6. Broach the tubing to be sure there are no tight spots. We may want to run a plunger in this wellbore at a later date.
7. Swab the well in if necessary and notify the pumper that the well has been returned to production.

Ernie Busch

From: Ernie Busch
To: Ben Stone
Subject: AMOCO JICARILLA 146#39(DHC)
Date: Thursday, March 21, 1996 1:13PM
Priority: High

J-03-25N-05W
RECOMMEND: APPROVAL

OPERATOR: LOUIS DREVY'S NATURAL GAS CORP

| ORID: 025773

| MONTH/YEAR 08/95

| PAGE 16 OF 26

INJECTION				PRODUCTION				DISPOSITION OF OIL, GAS, AND WATER									
7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
POOL NO. AND NAME PROPERTY NO. AND NAME WELL NO. AND U-I-S-T-R API NUMBER	C O D E	VOLUME	PRESSURE	C O D E	BBL'S OF OIL/COND- ENSATE PRODUCED	BBL'S OF WATER PRODUCED	GAS PRODUCED (MCF)	DAYS PRODUCED	C O D E	POINT OF DISPOSIT- TION	GAS BTU OR OIL API GRAV	OIL ON HAND AT BEGINNING OF MONTH	VOLUME (BBL'S/MCF)	TRANS- PORTER ORID	C O D E	OIL ON HAND AT END OF MONTH	
73960 CARLSBAD MORROW, SO. (PROGRATED GAS) 016384 BOEING 2 FEDERAL																	
001 E-02-23S-26E 30-015-26682	F				2	6	6962	31		O 0762810 G 0762830 W 0762850	1042	101	6962 007057 6	007057	O	103	
74200 CARLSBAD WOLF CAMP, SOUTH (GAS) 016398 HAPPY VALLEY FEDERAL COM																	
001 G-28-22S-26E 30-015-25243	F				255	10	2958	31		O 0763410 G 0763430 G 0763450	49.5 1051	328	180 2863 95 10	138648 025773	U O	403	
75740 OILBERRA BLUFF ATOKA, SOUTH (GAS) 016380 RAY #25"																	
001 N-25-23S-28E 30-015-26813	F				0	0	8739	31		O 0763010 G 0763030	1021	37	8739 007057			37	



Southern

Rockies

Business

Unit

February 23, 1996

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

RECEIVED
MAR 4 1996
OIL CON. DIV.
DIST. 3

Application for Exception to Rule 303-C

Downhole Commingling

Jicarilla 146 #39 Well

1600' FSL & 1780' FEL, Unit J Section 3-T25N-R5W

Blanco Mesaverde (Pool IDN 72319) and Otero Chacra (Pool IDN 82329) 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 146 #39 Well referenced above. The Jicarilla 146 #39 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 270 MCFD with 3.15 BCPD due to the increased efficiencies of lifting liquids. 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.

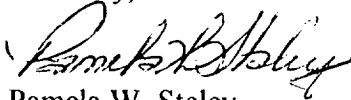
The allocation method that we plan to use for this commingled well is as follows. Since these formations have been producing for some time, we have a good historical representation of the production by formation. Based on historical production we recommend that the allocation for gas production be 17% from the Mesaverde formation and 83% from the Chacra formation. The Chacra has historically produced no 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, recent production information and a C-102 for each formation. This spacing unit is on a federal lease (Jicarilla Contract 146) 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 146
Well Number: 39
Well Location: 1600' FSL & 1780' FEL
Unit J Section 3-T25N-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 20 MCFD and 2.65 BCPD. The Chacra zone produced at an average rate of about 100 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 521 PSIG while estimated bottomhole pressure in the Mesaverde formation is 738 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:

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 17% from the Mesaverde formation and 83% from the Chacra formation. The Chacra has historically produced no 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.

13,239,296.55 FT. N
36° 27' 2" N

107° 20'

13,239,296.55 FT. N
36° 27' 2" N

992,067.40 FT. E
107° 22' 23" W

107° 19' 9" W
1,007,932.60 FT. E

WELL: 3
LEASE: OHIO-JICARILLO
OPERATOR: MARATHON OIL
API: 300390626000
PROD. FORM: PCCF ,CHCR

26N-5W

WELL: 37
LEASE: JICARILLA CONTRACT
OPERATOR: AMOCO PROD
API: 300392252300
PROD. FORM: MVRD ,CHCR

WELL: 36
LEASE: JICARILLA CONTRACT
OPERATOR: AMOCO PROD
API: 300392248600
PROD. FORM: MVRD ,CHCR

WELL: 35
LEASE: JICARILLA CONTRACT
OPERATOR: AMOCO PROD
API: 300392254400
PROD. FORM: CHCR

WELL: 12
LEASE: JICARILLA CONT 146
OPERATOR: AMOCO PROD
API: 300390615300
PROD. FORM: PCCF ,FRLO ,CHCR ,CHCR

RIO ARRIBA

WELL: 39
LEASE: JICARILLA CONTRACT
OPERATOR: AMOCO PROD
API: 300392252200
PROD. FORM: CHCR

WELL: 21
LEASE: JICARILLA-146
OPERATOR: PAN AMERICAN
API: 300392033400
PROD. FORM: OKOT ,CHCR

25N-5W

WELL: 43
LEASE: JICARILLA CONTRACT
OPERATOR: AMOCO PROD
API: 300392372100
PROD. FORM: CHCR

WELL: 13
LEASE: JICARILLA K
OPERATOR: SOUTHERN UNION PROD
API: 300392029200
PROD. FORM: PCCF ,OKOT ,CHCR

WELL: 14
LEASE: JICARILLA
OPERATOR: PAN AMERICAN
API: 300390608200
PROD. FORM: CHCR

WELL: 16
LEASE: JICARILLA-146
OPERATOR: PAN AMERICAN
API: 300390606500
PROD. FORM: CHCR

WELL: 14
LEASE: JICARILLA K
OPERATOR: SOUTHERN UNION PROD
API: 300392039200
PROD. FORM: PCCF ,OKOT ,CHCR

36° 24' 25" N
13,223,405.54 FT. N

107° 20'

36° 24' 25" N
13,223,405.54 FT. N

107° 19' 9" W
1,007,937.05 FT. E

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

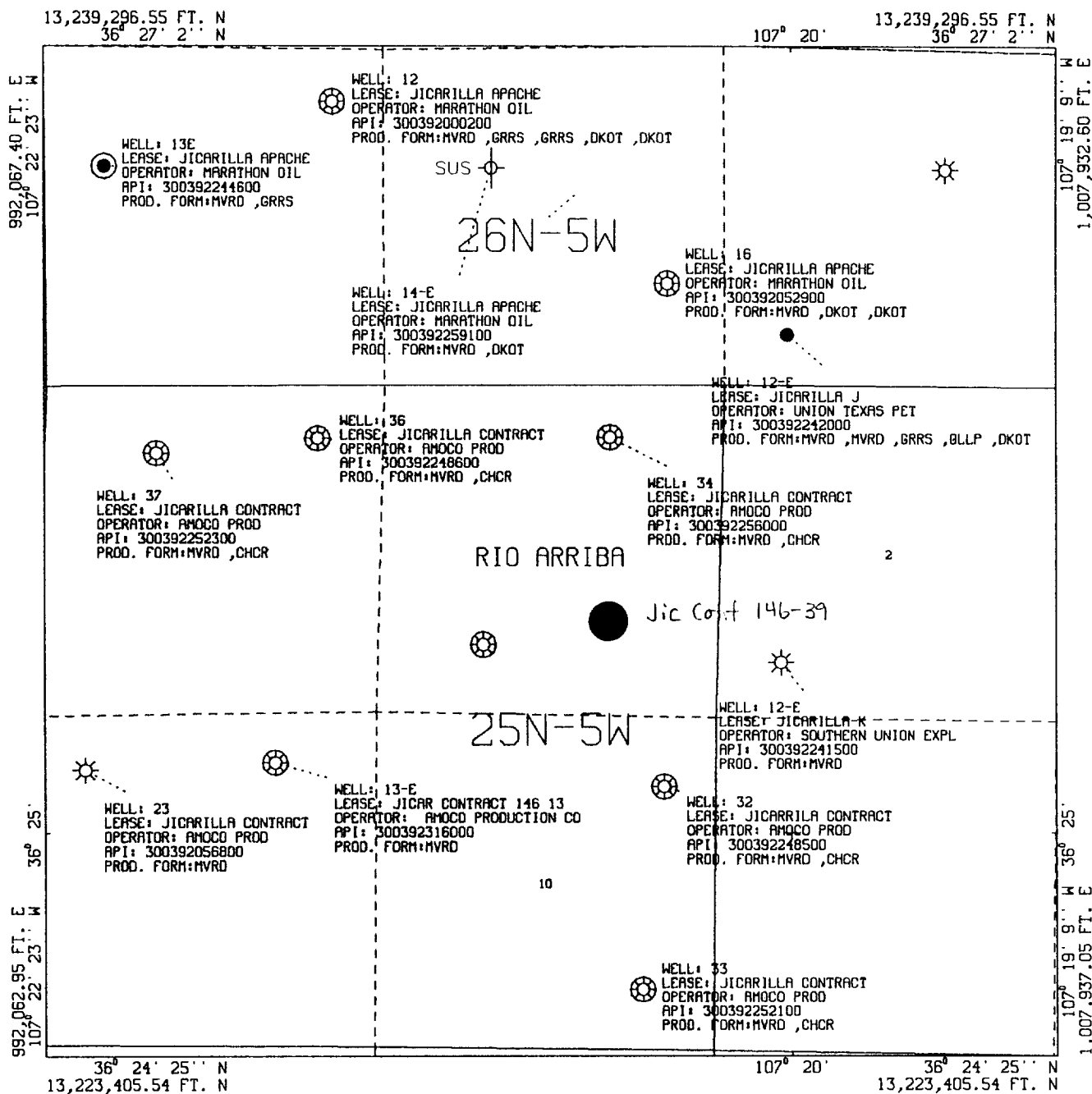
Jicarilla Contract 146-39 Sec 03-T25N-R05W CK
Rio Arriba New Mexico

SCALE 1 IN. = 2,500 FT. NOV 3, 1995

HORIZONTAL DATUM NAD27

HRB13203--RUN#95307052120

PLOT 1 05.36.33 FRI 3 NOV, 1995 JOB-P1320302, ISSCO DISSPLA 10.0



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
Jicarilla Contract 146-39 Sec 03-T25N-R05W MV
Rio Arriba New Mexico

SCALE 1 IN. = 2,500 FT. NOV 3, 1995

HORIZONTAL DATUM NAD27

OIL CONSERVATION DIVISION

P. O. BOX 2088

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

SANTA FE, NEW MEXICO 87501

Form C-107
Revised 10-1-78

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

Operator: AMOCO PRODUCTION COMPANY		Lease: JICARILLA CONTRACT 146		Well No. 39
Unit Letter J	Section 3	Township 25N	Range 5W	County Rio Arriba
Actual Footage Location of Well: 1600 feet from the South line and 1780 feet from the East line				
Ground Level Elev: 6605	Producing Formation Chacra/Mesaverde	Pool Otero Chacra/Gonzales Mesaverde	Dedicated Acreage: 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.

R.A. Downey
Name

R.A. DOWNEY

Position
DISTRICT ENGINEER

Company
AMOCO PRODUCTION COMPANY

Date
SEPTEMBER 5, 1980

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 29, 1980

Registered Professional Engineer
and Land Surveyor

Fred B. Kero Jr.
Fred B. Kero Jr.

Certificate No.
3950

Scale: 1"=1000'

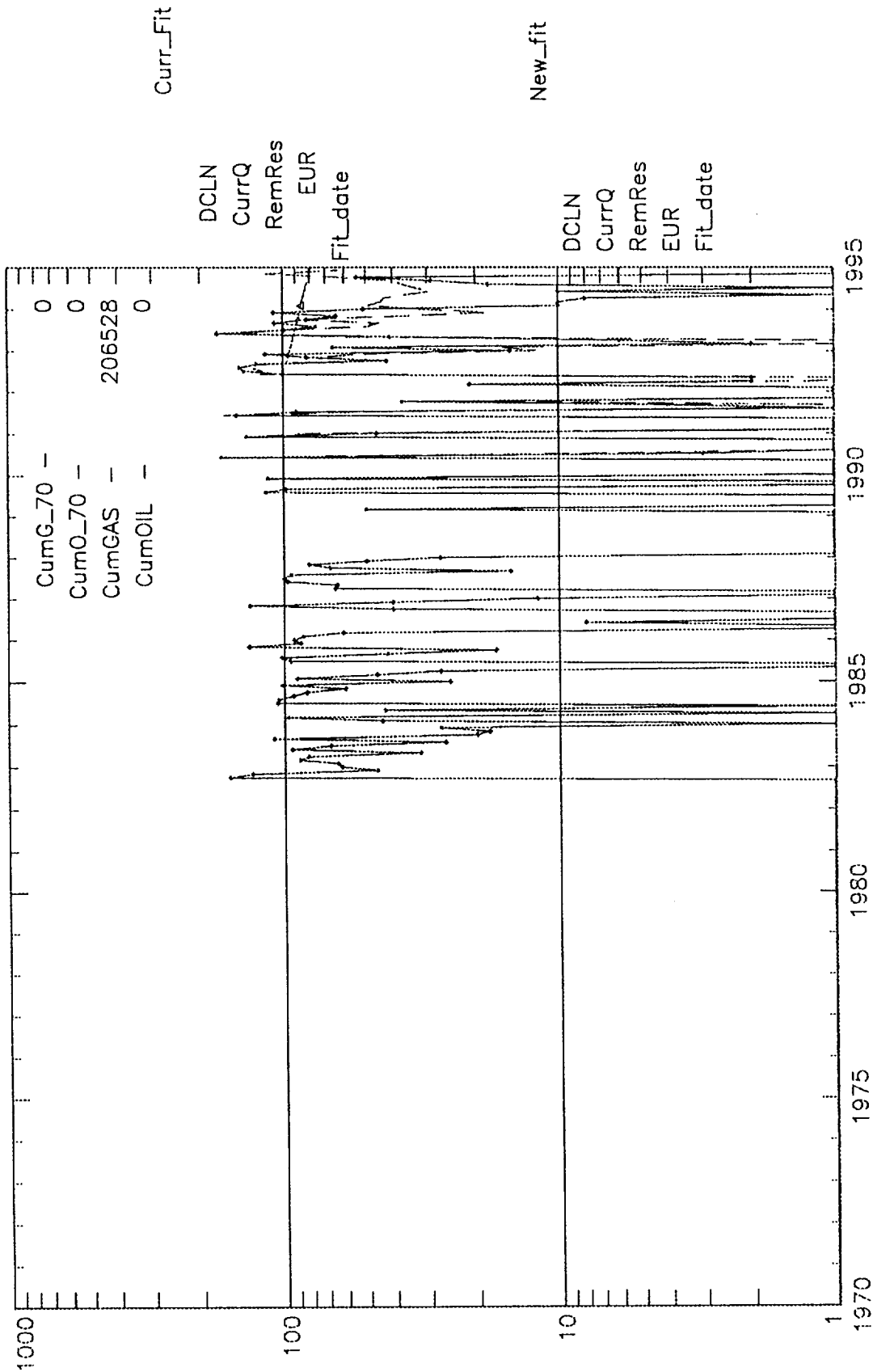
Engr: zhab0b

JICARILLA CONTRACT 146 39

Operator- AMOCO PRODUCTION CO

300392252200CK J032505-039 CK

APC_WI - 1.0000000



Engr: zhab0b

JICARILLA CONTRACT 146 39

Operator- AMOCO PRODUCTION CO

300392252200MV J032505-039 MV

APC_WI - 1.0000000

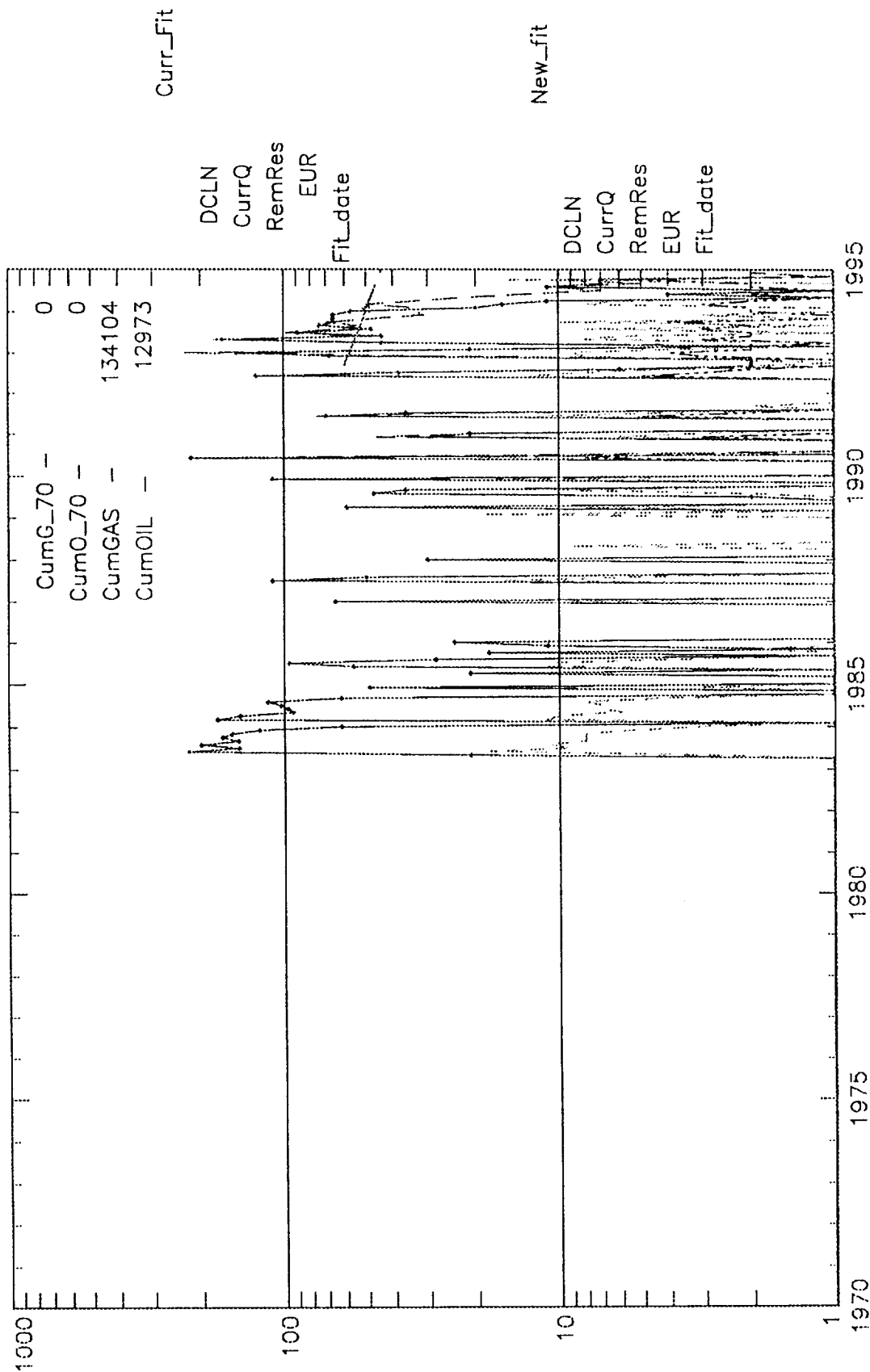
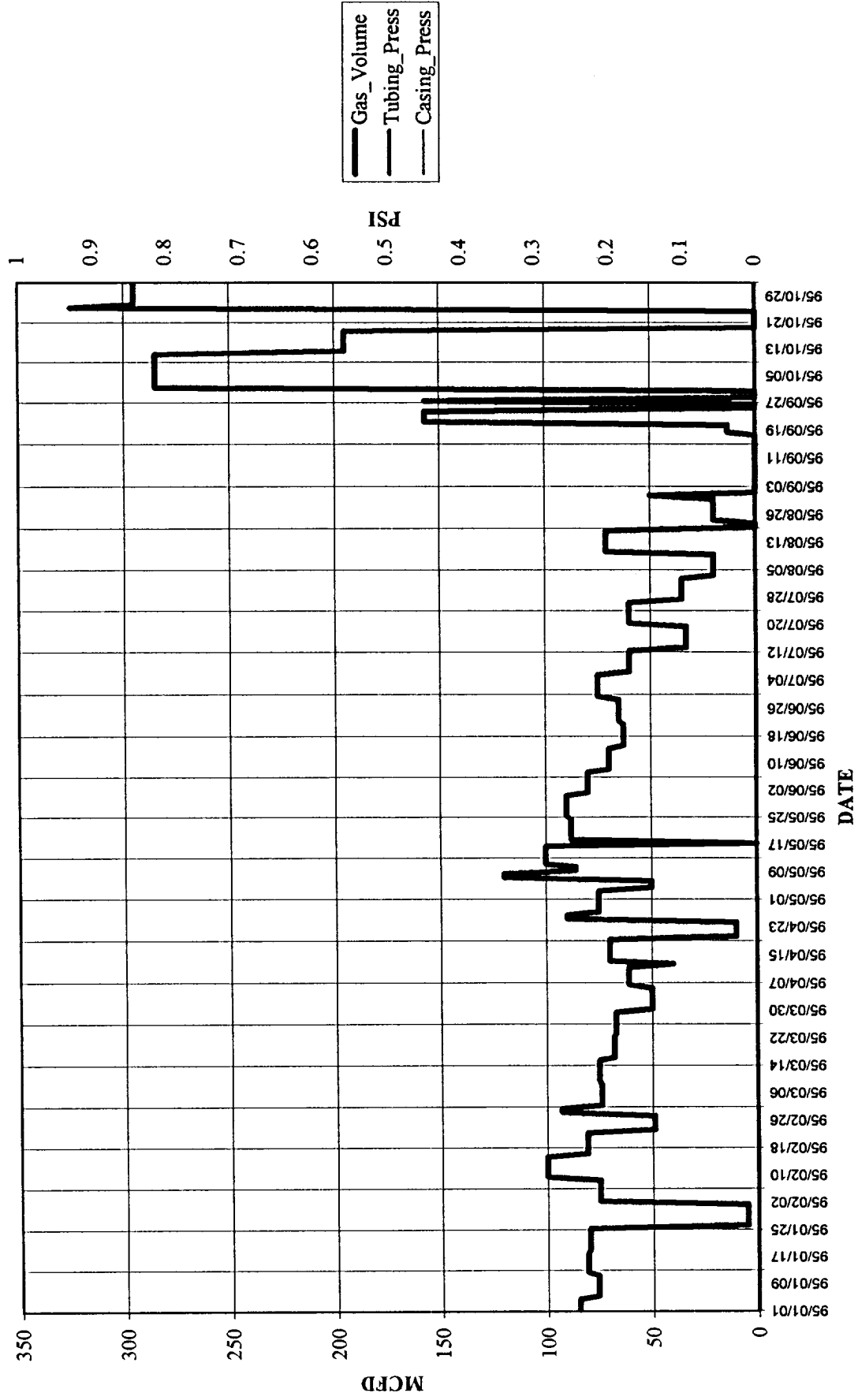


Chart1

Well: JICARILLA CONT 146 039-CK (84237501)



ESTIMATED BOTTOMHOLE PRESSURES								
Jicarilla Contract #146-39								
CK	PERFORATIONS	TOP	3782	BOTTOM	3808	MIDPERF	3795	
MV	PERFORATIONS	TOP	5076	BOTTOM	5228	MIDPERF	5152	
	Jun-95	SHUT-IN PRESSURES						
		CK	=	217	PSIG			
		MV	=	326	PSIG			
	GRADIENT	= 0.8 PSI/FT						
		CK BHP =	217	PSIG +	3795	X 0.08 PSIG		
			=	521	PSI			
		MV BHP =	326	PSIG +	5152	X 0.08 PSIG		
			=	738	PSI			

OIL CONSERVATION DIVISION
NORTHWEST NEW MEXICO PACKER-LEAKAGE TEST

Operator: AMOCO PRODUCTION COMPANY Lease/Well #: JIC CONTRACT 146 39
Meter #: 85700 RTU: 1-134-01 County: RIO ARRIBA

	NAME RESERVOIR OR POOL	TYPE PROD	METHOD PROD	MEDIUM PROD
UPR COMP	JIC CONTRACT 146 39 OCH 85643 1-133-1	GAS	FLOW ✓	TBG ✓
LWR COMP	JIC CONTRACT 146 39 BMV 85700 1-134-1	GAS	FLOW ✓	TBG ✓

PRE-FLOW SHUT-IN PRESSURE DATA

	Hour/Date Shut-In	Length of Time Shut-In	SI Press. PSIG	Stabilized
UPR COMP	09/28/93	73 hr	217 TBG 200 GSI	yes
LWR COMP	09/28/93	73 hr	222 #	yes

FLOW TEST DATE NO.1

Commenced at (hour, date)*					Zone Producing (Upr/Lwr)	
TIME (hour, date)	LAPSED TIME SINCE*	PRESSURE			Prod Temp.	REMARKS
		Upper	Lower			
9/29/93	Day 1	380 TBG 357 GSI	292 TBG			Both Zones SI
9/30/93	Day 2	339 - 400	286 TBG			Both Zones SI
10/1/93	Day 3	322 - 400	222 TBG			Both Zones SI
10/2/93	Day 4	410 410	160			
10/3/93	Day 5	408 408	240			
10/4/93	Day 6	405 408	222			

Production rate during test

Oil: 2 BOPD based on BBLs in Hrs Grav GOR
Gas: 78 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)
UPR COMP	10/28/93	73 hr	412 416	yes
LWR COMP	10/28/93	73 hr	222 #	yes

(Continue on reverse side)

OCT 21 1993

OIL CON. DIV.]

OFFSET OPERATORS AND LIST OF ADDRESSES

Jicarilla 146 #39 Well

CHACRA OFFSET OPERATORS

NW SEC 11-T25N-R5W - MERIT ENERGY CORP.
NE SEC 10-T25N-R5W - AMOCO PRODUCTION COMPANY
NW SEC 10-T25N-R5W - AMOCO PRODUCTION COMPANY
NW SEC 3-T25N-R5W - AMOCO PRODUCTION COMPANY
SW SEC 3-T25N-R5W - AMOCO PRODUCTION COMPANY
NE SEC 3-T25N-R5W - AMOCO PRODUCTION COMPANY
NW SEC 2-T25N-R5W - NO CHACRA WELL
SW SEC 2-T25N-R5W - MERIT ENERGY CORP.

MESAVERDE OFFSET OPERATORS

NW SEC 11-T25N-R5W - NO MESAVERDE WELL
NE SEC 10-T25N-R5W - AMOCO PRODUCTION COMPANY
NW SEC 10-T25N-R5W - AMOCO PRODUCTION COMPANY
NW SEC 3-T25N-R5W - AMOCO PRODUCTION COMPANY
SW SEC 3-T25N-R5W - AMOCO PRODUCTION COMPANY
NE SEC 3-T25N-R5W - AMOCO PRODUCTION COMPANY
NW SEC 2-T25N-R5W - NO MESAVERDE WELL
SW SEC 2-T25N-R5W - MERIT ENERGY CORP.

ADDRESSES

1 Merit Energy Corp.
12221 Merit Dr. Suite 500
Dallas, TX 75251