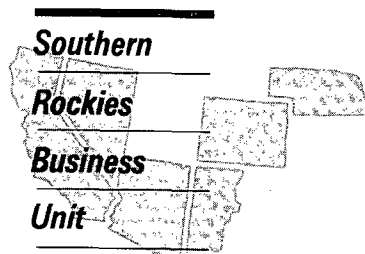




November 28, 1994

Mr. William J. LeMay, Director
New Mexico Oil Conservation Division
2040 S. Pacheco Street
P. O. Box 6429
Santa Fe, NM 87504

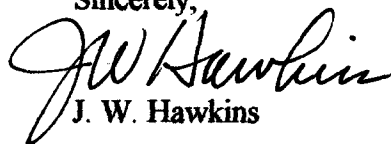


Application for Exception to Rule 303-A
Downhole Commingling
Jicarilla 146 #12 Well
1510' FSL, 1754' FWL, Section 4-T25N-R5W
Otero Chacra, So. Blanco Pictured Cliffs, Basin Fruitland Coal Pools
Rio Arriba County, New Mexico

Amoco Production Company hereby requests administrative approval to downhole commingle production from the Otero Chacra, So. Blanco Pictured Cliffs, Basin Fruitland Coal Pools in the Jicarilla 146 #12 well referenced above. The ownership (WI, RI ORRI) of these three pools is identical in this wellbore. Production methods are limited due to the 4 1/2" casing in the well. Downhole commingling will offer an economical method of production while protecting against reservoir damage, waste of reserve and violation of correlative rights.

A copy of this application will be sent to the offset operators. If there are any questions concerning this matter, please contact me at (303) 830-5072.

Sincerely,


J. W. Hawkins

Enclosures

cc: Wayne Branam
Steve Smethie

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

Robert Kent
Bureau of Land Management
435 Montano NE
Albuquerque, Nm 87107

Conoco Inc.
10 Desta Drive, Suite 100W
Midland, TX 79705-4500

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: 12
Well Location: 1510' FSL & 1754' FWL
Section 4, T25N-R5W
Rio Arriba County, New Mexico
Pools Commingled: Otero Chacra
So. Blanco Pictured Cliffs
Basin Fruitland Coal

- (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.

Prior to recompletion, the Otero Chacra produced an average stabilized rate of 40 mcf/d without compression. The well was then recompleted to the Fruitland through perforations 2888'-2900' and Pictured Cliffs through perforations 2901'-2930'. Both zones were fracture stimulated together since there was no room to separate the two zones. This was followed by a period of combined Fruitland and Pictured Cliffs zone production which stabilized at about 420 mcf/d under compression. Additional testing for all three zones with compression is underway.

- (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. (This requirement may be dispensed within the case of a newly completed or recently completed well which has little or no production history. However, a complete resume of the well's completion history including description of treating, testing, etc., of each zone, and a prognostication of future production from each zone shall be permitted.)

Otero Chacra Completion:	Historical production curve attached.
Basin Fruitland Coal /	New completions, recent recompletion summary attached.
So. Blanco Pictured Cliffs Completion:	

- (6) Estimated bottomhole pressure for each artificially lifted zone. A current (within 30 days) measured bottom hole pressure for each zone capable of flowing.

	BH Pressure	SI Tubing Press.	Fluid Level
Otero Chacra Completion:	344 psi	200 psi	265'
Basin Fruitland Coal/ So. Blanco Pictured Cliffs Completion	295 psi	270 psi	0'

- (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 (see attached produced gas and fluid analysis).

- (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 well is undergoing additional testing to aid in determination of the allocation factor. The completion in the Fruitland/Pictured Cliffs zone precludes an evaluation of individual zone production rates. We propose using feet of perforations as a basis of allocation between Fruitland and Pictured Cliffs. The Fruitland has 12' of open perfs (2888'-2900') and the P.C. has 30' of open perfs (2901'-2930'). The Fruitland/Pictured Cliffs combined production will be allocated as follows: Fruitland -37.5%, Pictured Cliffs -62.5%. The current testing period will allow a further allocation between the Otero Chacra and the Fruitland /Pictured Cliffs combined production.

- (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.

All offsetting operators and the BLM will receive a copy of this application by certified mail. The offsetting operator is Conoco Inc., 10 Desta Drive, Suite 100W, Midland , TX 79705-4500

NUMBER OF COPIES RECEIVED	
DISTRIBUTION	
SANTA FE	
FILE	
U.S.G.S.	
LAND OFFICE	
TRANSPORTER	OIL GAS
PRODUCTION OFFICE	
OPERATOR	

NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT
 SEE INSTRUCTIONS FOR COMPLETING THIS FORM ON THE REVERSE SIDE

FORM C-128
 Revised 5/1/57

SECTION A

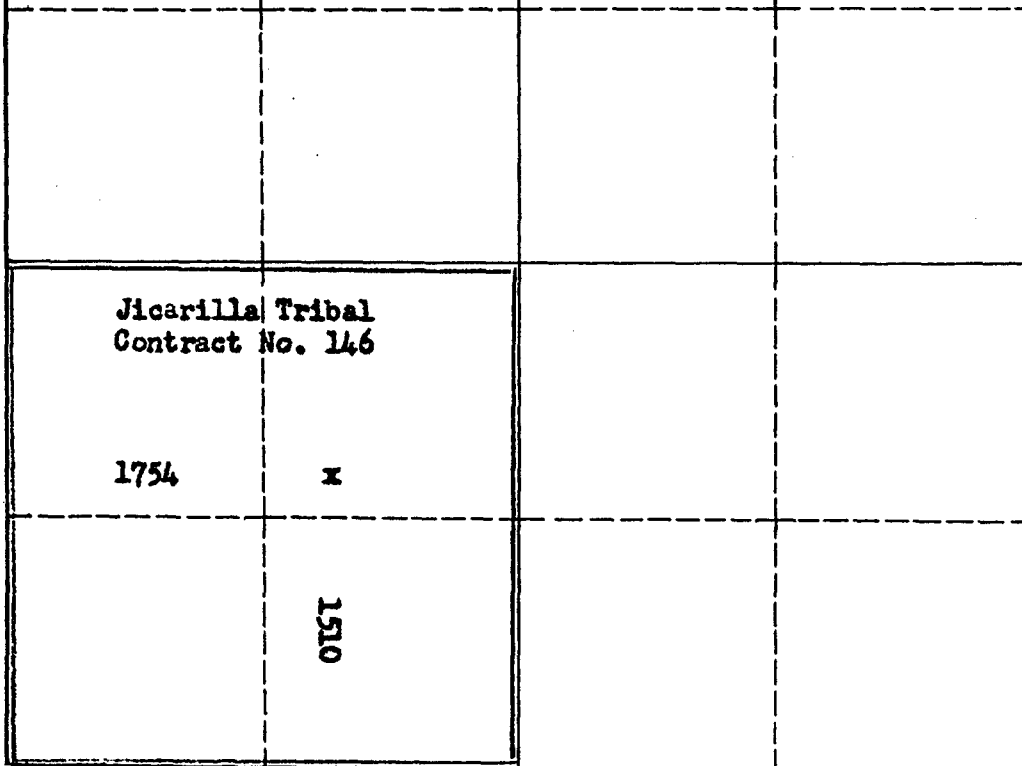
Operator Pan American Petroleum Corporation		Lease Jicarilla Contract 146		Well No. 12
Unit Letter K	Section 4	Township 25 North	Range 5 West	County Rio Arriba
Actual Footage Location of Well: 1510 feet from the South line and 1754 feet from the West line				
Ground Level Elev. 6648	Producing Formation Chacra	Pool Otero Chacra	Dedicated Acreage: 160 Acres	

1. Is the Operator the only owner in the dedicated acreage outlined on the plat below? YES ☒ NO ____ . ("Owner" means the person who has the right to drill into and to produce from any pool and to appropriate the production either for himself or for himself and another. (65-3-29 (e) NMSA 1935 Comp.)
2. If the answer to question one is "no," have the interests of all the owners been consolidated by communitization agreement or otherwise? YES ____ NO ____ . If answer is "yes," Type of Consolidation ____
3. If the answer to question two is "no," list all the owners and their respective interests below:

Owner	Land Description

SECTION B

NOTE: Location staked for Dakota well Jicarilla Contract 146 No. 11 at 1510 ft. from south line and 1820 ft. from west line in Unit K, Section 4, T-25-N, R-5-W. Twin well for Chacra completion to be drilled by skidding rig 66 ft. due west, or at a location 1510 ft. from south line and 1754 ft. from west line in Unit K, Section 4, T-25-N, R-5-W.



CERTIFICATION

I hereby certify that the information in SECTION A above is true and complete to the best of my knowledge and belief.

R. M. Bauer, Jr.

Name
R. M. Bauer, Jr.
 Position
Senior Petroleum Engineer
 Company
Pan American Petroleum Corp.
 Date
June 12, 1961

I hereby certify that the well location shown on the plat in SECTION B 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. Location for Dakota well Jicarilla Contract 146 No. 11

Date Surveyed
April 29, 1961
 Registered Professional Engineer and/or Land Surveyor
Original /s/ James P. Leese
 Certificate No.
1463

0 330 660 990 1320 1650 1980 2310 2640 2000 1500 1000 500 0

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Arriba Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised February 21, 1990

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-039-06153		1 Pool Code 72439		1 Pool Name South Blanco Pictured Cliffs	
4 Property Code		1 Property Name Jicarilla Contract 146			4 Well Number 12
1 OGRID No. 000778		1 Operator Name Amoco Production Company			4 Elevation

10 Surface Location

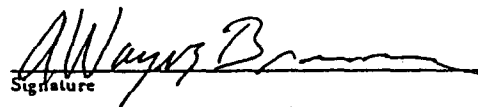
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	4	25N	5W		1510	South	1754	West	Rio Arriba

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

12 Dedicated Acres 160	13 Joint or Infill	14 Consolidation Code	15 Order No.
---------------------------	--------------------	-----------------------	--------------

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

16				17 OPERATOR CERTIFICATION <i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief</i>  Signature A. Wayne Branam Printed Name Business Analyst Title 07/20/94 Date	
SECTION 4					
1754				18 SURVEYOR CERTIFICATION <i>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 belief.</i> 04/29/61 Date of Survey Signature and Seal of Professional Surveyer: 1463 "On File" Certificate Number	
1510					

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Form C-102
Revised February 21, 1991

Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-039-06153		2 Pool Code 71629		3 Pool Name Basin Fruitland Coal Gas Pool		
4 Property Code		5 Property Name Jicarilla Contract 146			6 Well Number 12	
7 OGRID No. 000778		8 Operator Name Amoco Production Company			9 Elevation	

10 Surface Location

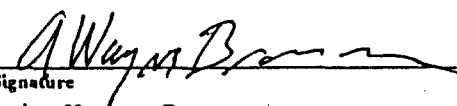
UL or lot no. K	Section 4	Township 25N	Range 5W	Lot Idn	Feet from the 1510	North/South line South	Feet from the 1754	East/West line West	County Rio Arriba
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11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
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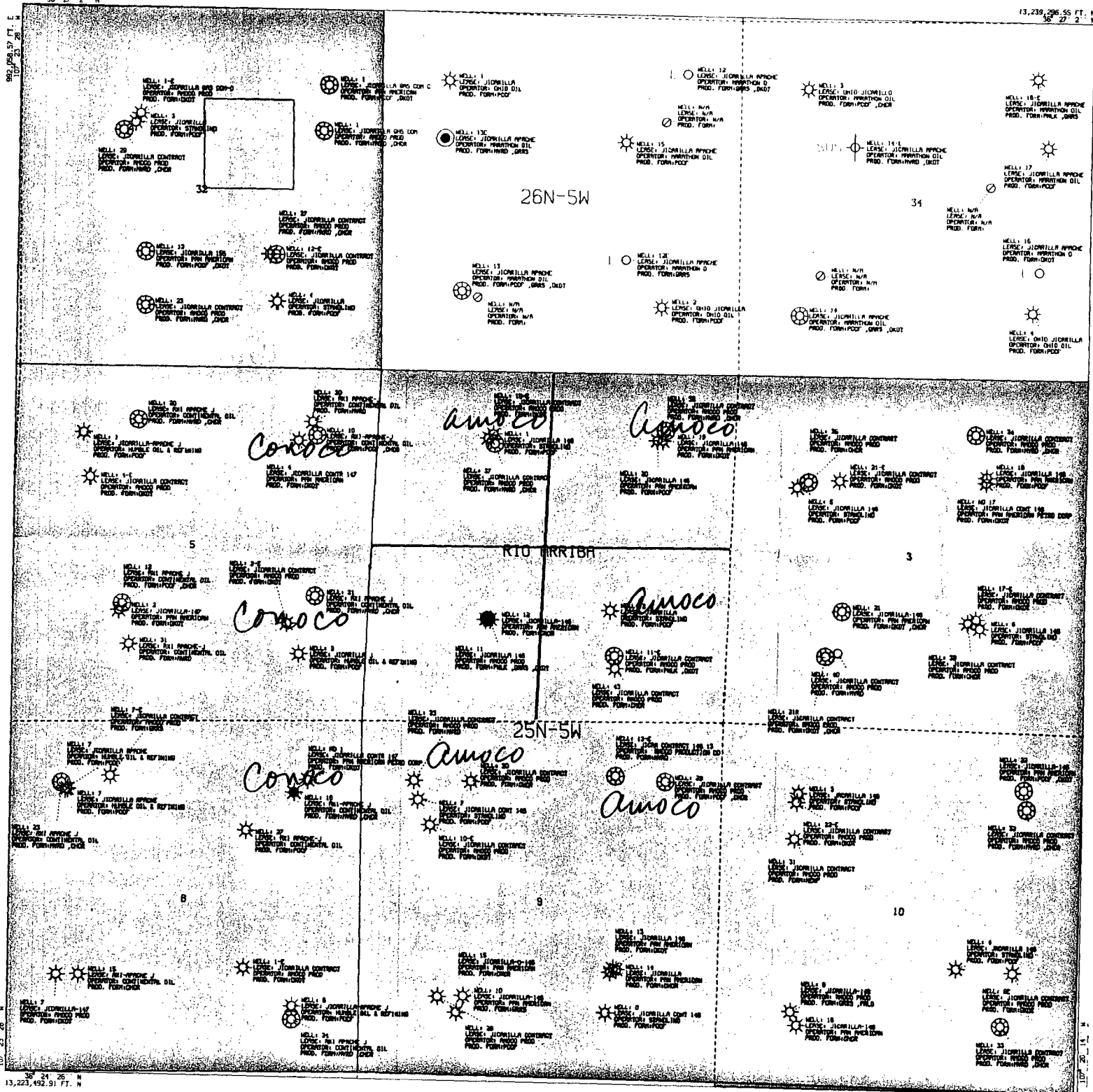
12 Dedicated Acres 320	13 Joint or Infill	14 Consolidation Code	15 Order No.
---------------------------	--------------------	-----------------------	--------------

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

16				17 OPERATOR CERTIFICATION <i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief</i>  Signature A. Wayne Branam Printed Name Business Analyst Title 07/20/94 Date	
SECTION 4					
1754					
1510				18 SURVEYOR CERTIFICATION <i>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 belief.</i> 04/29/61 Date of Survey Signature and Seal of Professional Surveyer: 1463 "On File" Certificate Number	

13,239,296.55 FT. N
92° 27' 2" W

13,239,296.55 FT. N
92° 27' 2" W



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.



MULTI-METER, MERIDIAN = 110° 21' 51" W LON
SP-10110-5



AMOCO PRODUCTION COMPANY

PLAT MAP

PC / CK

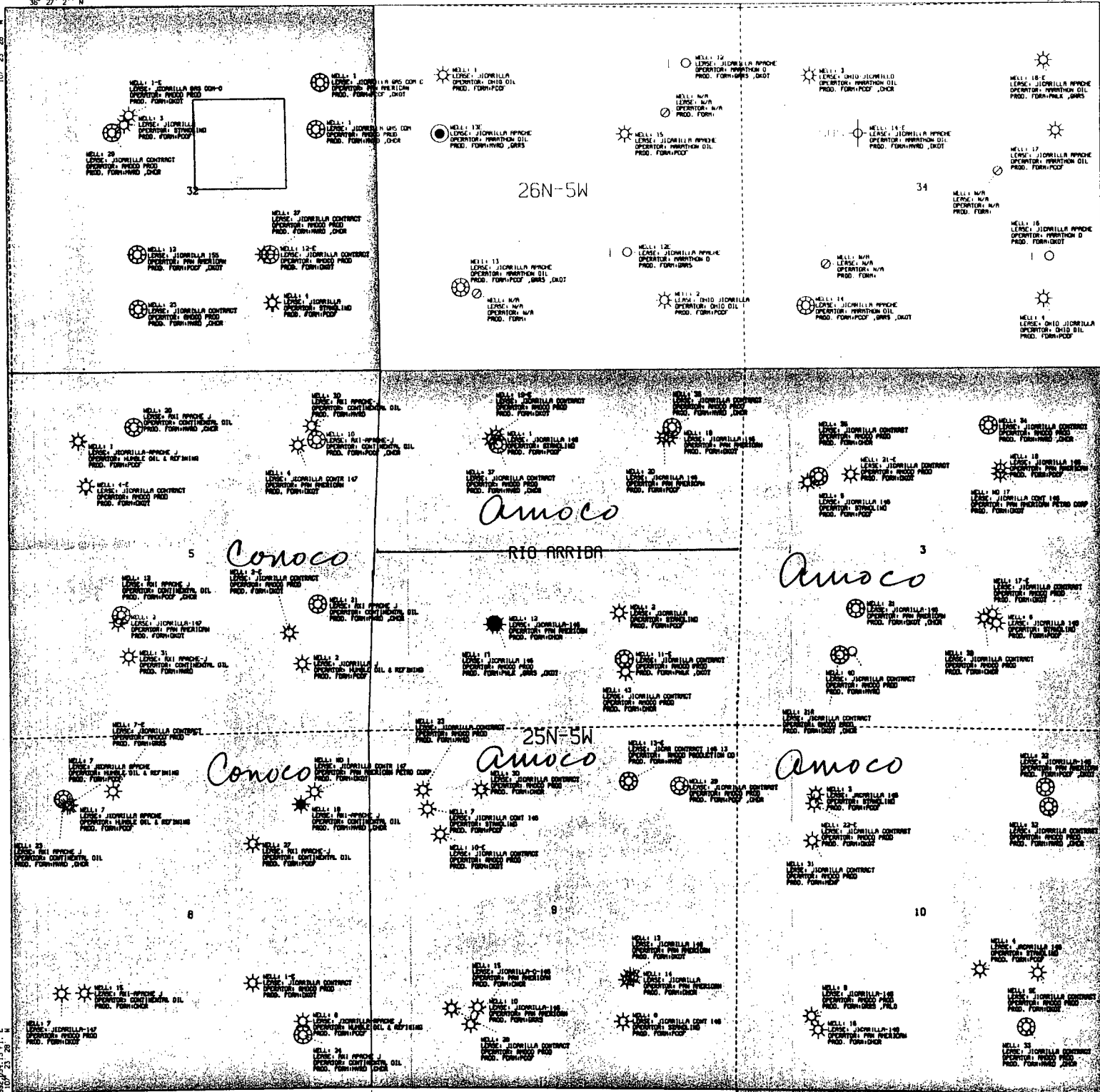
SEC. 4 T25N R5W

SCALE 1 IN. = 1,000 FT. SEP 7, 1994

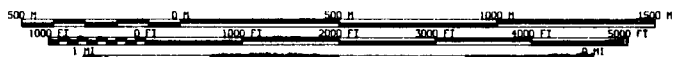
15N12UNTR INITIAL 04/12/77

13,239,296.55 FT. N
55 27 2" N

13,239,296.55 FT. N
55 27 2" N



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Geographic Central Meridian = 106° 31' 31" W Low
Stereographic = 8

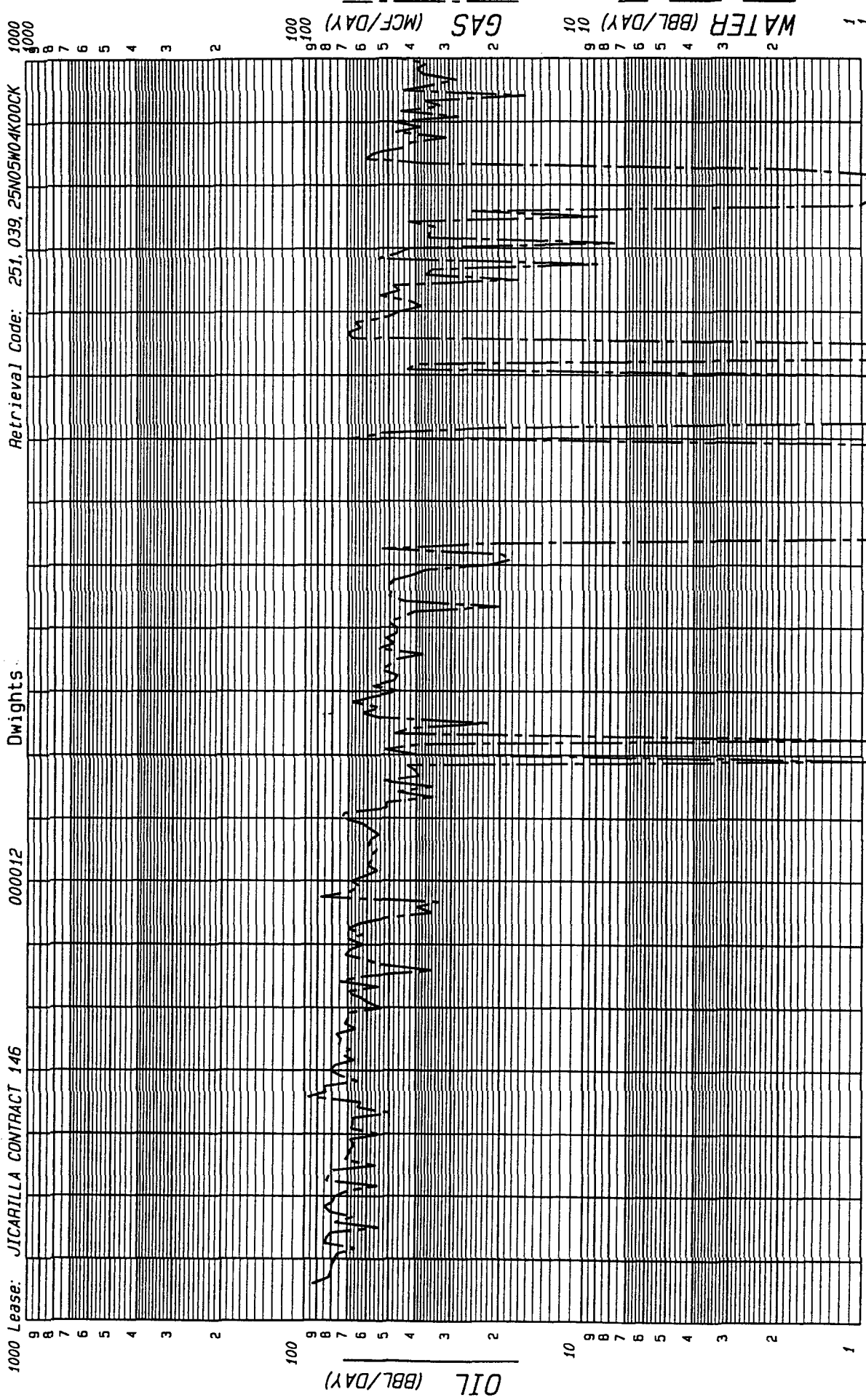


AMOCO PRODUCTION COMPANY
PLAT MAP

SEC. 4-T25N-R5W

SCALE 1 IN. = 1,000 FT. SEP 7, 1994

11/15/2011 10:11 AM



65- Annual Data

75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93

County: RIO ARriba
 Field: OTERO (CHACRA) CK
 Reservoir: CHACRA
 Operator: AMOCO PRODUCTION CO.
 Oil Cum. 0 4K 25N 5W
 Gas Cum. 724708
 State: NM

F.P. Date 07-62

Date: 09-20-94

JICARILLA CONTRACT 146 - 12
SEC 4 - T25N - R5W
RIO ARRIBA COUNTY, NM
PICTURED CLIFF / FRUITLAND COAL RECOMPLETION SUMMARY

1. The well was shut-in for 8 days (192 hr) and surface pressure data was collected. The shut-in surface tubing (Chacra) pressure was 200 psi.
2. The production tubing was pulled and a RBP was set at 3200'.
3. The wellbore was logged from 3169' - 398' with a cement bond log and from 3177' - 1985' with a Dual Spaced Neutron log. The top of cement behind pipe was identified at 2320'.
4. The casing positively pressured tested to 3000 psi.
5. The Fruitland Coal (FR) was perforated from 2888' - 2900' with 4 JSPF and the Pictured Cliff (PC) formation was perforated from 2901' - 2930' with 4 JSPF.
6. The perforations from 2888' - 2930' were fracture stimulated with 70 percent quality N2 foam and approximately 96,000 pounds of 20/40 sand.
7. The well was flowed back for 4 days to produce back frac fluid.
8. The wellbore was cleaned out with N2 and 2-3/8" tubing was landed at 2897'.
9. The well was flow tested for 8 days through a separator.

	Back	Flow Tbg	Flow Csg	Test	
1994	Pressure	Pressure	Pressure	Duration	
<u>Date</u>	<u>PSI</u>	<u>PSI</u>	<u>PSI</u>	<u>Hour</u>	<u>MCFD</u>
10/13	250	260	---	13	188
10/14	250	260	280	24	188
10/15	250	160	180	24	180
10/16	100	110	170	24	703
10/17	100	110	---	24	703
10/18	100	110	160	24	703
10/19	100	110	---	24	520
10/20	100	---	---	24	420

No water was recovered during the flow test.

10. The well was shut-in for 2 days (48 hr) to obtain shut-in surface pressure data. The shut-in tubing pressure (PC/FR) was 270 psi.
11. The wellbore was cleaned out and the RBP set at 3200' was pulled.
12. Production tubing (2-1/16") was landed at 3783'.
13. The wellbore is currently shut-in awaiting downhole commingling approval for the Chacra, Pictured Cliff, and Fruitland Coal formations.



1115 Farmington Avenue
Farmington, N.M. 87401
(505) 325-6622

Analysis No. AMO40629
Cust. No. 12300-12765

WELL/LEASE INFORMATION

Company	: AMOCO PRODUCTION COMPANY	Source	:
Well Name	: JICARILLA CONT. 146-12	Pressure	: N/A PSIG
County	:	Sample Temp.	: N/A DEG.F
State	:	Well Flowing	: YES
Location	:	Date Sampled	: 06/13/94
Fld/Formation	: CHACRA	Sampled By	: GREG VIGIL
Cust.Stn.No.	:	Foreman/Engr	: JAKE NUNEZ

Remarks: JICARILLA FIELD

ANALYSIS

COMPONENT	MOLE %	GPM**	B.T.U.*	SP.GR.*
NITROGEN	0.420	0.0000	0.00	0.0041
CO2	0.258	0.0000	0.00	0.0039
METHANE	84.815	0.0000	858.58	0.4698
ETHANE	8.290	2.2176	147.04	0.0861
PROPANE	3.708	1.0219	93.51	0.0565
I-BUTANE	0.592	0.1936	19.30	0.0119
N-BUTANE	0.928	0.2926	30.34	0.0186
I-PENTANE	0.289	0.1057	11.59	0.0072
N-PENTANE	0.214	0.0775	8.60	0.0053
HEXANES	0.486	0.2120	24.99	0.0156
TOTAL	100.000	4.1209	1193.95	0.6789

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

** @ 14.730 & 60 DEG. F

COMPRESSIBILITY FACTOR	(1/2)	1.0032
BTU/CU.FT. (DRY) CORRECTED FOR	(1/2)	1197.8
BTU/CU.FT. (WET) CORRECTED FOR	(1/2)	1176.9
REAL SPECIFIC GRAVITY		0.6808

ANALYSIS RUN AT 14.730 PSIA & 60 DEGREES F

CYLINDER #	: N/A
CYLINDER PRESSURE	: 85 PSIG
DATE RUN	: 06/21/94
ANALYSIS RUN BY	: SHEILA FELTMAN



Farmin n, N.M. 87401
(505) 32J-6622

Analysis No. AMO40913
Cust. No. 12300-13610

WELL/LEASE INFORMATION

Company : AMOCO PRODUCTION COMPANY
Well Name : JICARILLA CONT. #40
County : RIO ARRIBA 146
State : NM
Location :
Fld/Formation :
Cust.Stn.No. :
Source : TUBING
Pressure : N/A PSIG
Sample Temp. : N/A DEG.F
Well Flowing : YES
Date Sampled : 08/08/94
Sampled By : M.D./ L&L
Foreman/Engr : MIKE ROWLAND

Remarks:

ANALYSIS

COMPONENT	MOLE %	GPM**	B.T.U.*	SP.GR.*
NITROGEN	0.827	0.0000	0.00	0.0080
CO2	0.134	0.0000	0.00	0.0020
METHANE	81.906	0.0000	829.13	0.4537
ETHANE	7.757	2.0750	137.59	0.0805
PROPANE	5.001	1.3783	126.12	0.0761
I-BUTANE	1.180	0.3860	38.46	0.0237
N-BUTANE	1.457	0.4594	47.64	0.0292
I-PENTANE	0.592	0.2166	23.74	0.0147
N-PENTANE	0.404	0.1463	16.23	0.0101
HEXANES	0.742	0.3237	38.15	0.0239
TOTAL	100.000	4.9853	1257.06	0.7219

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

** @ 14.730 & 60 DEG. F

COMPRESSIBILITY FACTOR (1/Z) 1.0036
BTU/CU.FT. (DRY) CORRECTED FOR (1/Z) 1261.6
BTU/CU.FT. (WET) CORRECTED FOR (1/Z) 1239.6
REAL SPECIFIC GRAVITY 0.7242

ANALYSIS RUN AT 14.730 PSIA & 60 DEGREES F

CYLINDER # : A008
CYLINDER PRESSURE : 80 PSIG
DATE RUN : 08/09/94
ANALYSIS RUN BY : LINDA SPENCER



1115 Farmington Avenue
Farmington, N.M. 87401
(505) 325-6622

Analysis No. AMO40912
Cust. No. 12300-13615

WELL/LEASE INFORMATION

Company : AMOCO PRODUCTION COMPANY Source : CASING
Well Name : JICARILLA CONT. #40 Pressure : 40 PSIG
County : RIO ARRIBA 146 Sample Temp. : N/A DEG. F
State : NM Well Flowing : YES
Location : Date Sampled : 08/08/94
Fld/Formation : Sampled By : M.D./ L&L
Cust. Stn. No. : Foreman/Engr : MIKE ROWLAND

Remarks:

ANALYSIS

COMPONENT	MOLE %	GPM**	B.T.U.*	SP.GR.*
NITROGEN	0.802	0.0000	0.00	0.0078
CO2	0.129	0.0000	0.00	0.0020
METHANE	81.672	0.0000	826.77	0.4524
ETHANE	7.761	2.0761	137.66	0.0806
PROPANE	5.064	1.3956	127.71	0.0771
I-BUTANE	1.214	0.3971	39.57	0.0244
N-BUTANE	1.498	0.4723	48.98	0.0301
I-PENTANE	0.617	0.2258	24.74	0.0154
N-PENTANE	0.422	0.1528	16.96	0.0105
HEXANES	0.821	0.3581	42.21	0.0264
TOTAL	100.000	5.0778	1264.59	0.7267

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

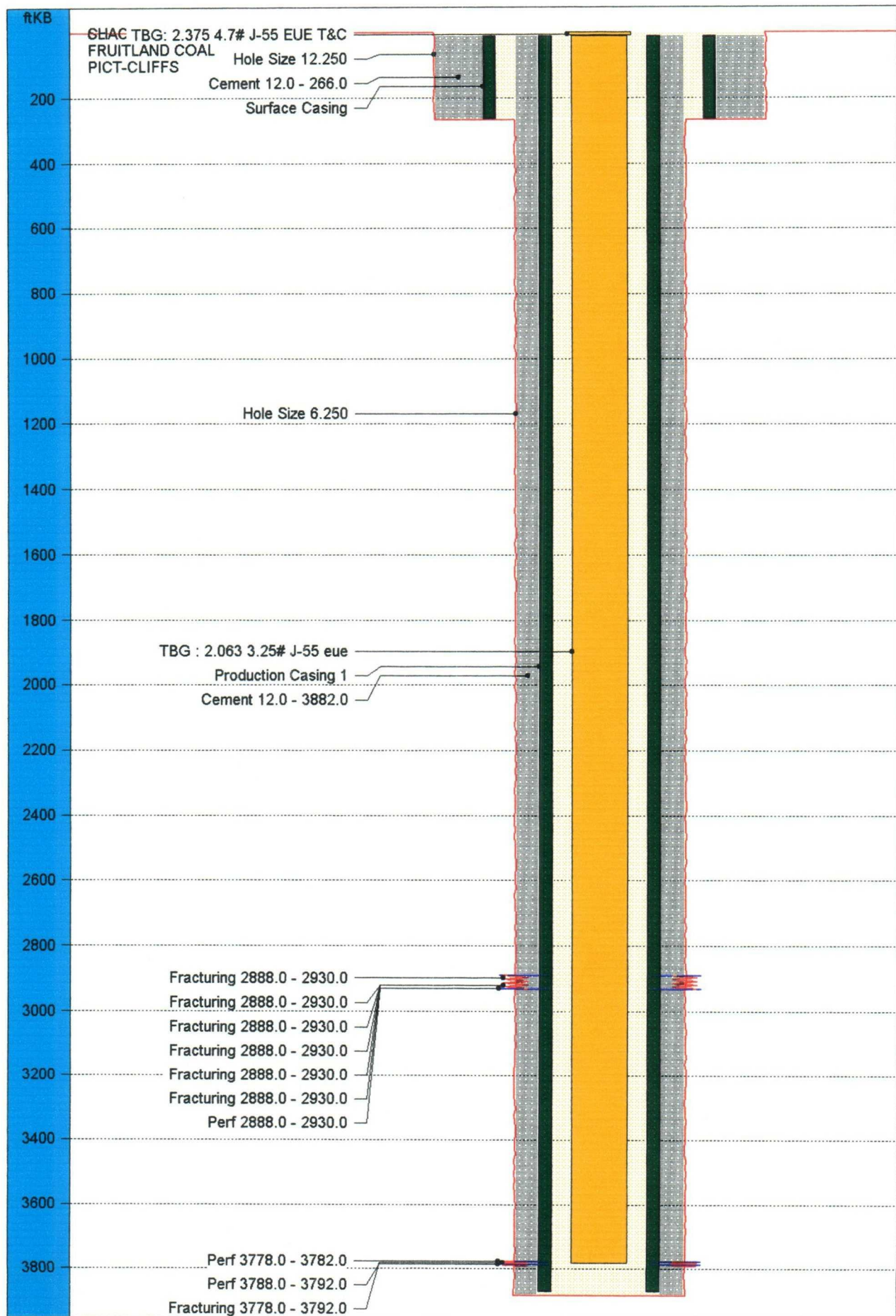
** @ 14.730 & 60 DEG. F

COMPRESSIBILITY FACTOR (1/Z) 1.0037
BTU/CU.FT. (DRY) CORRECTED FOR (1/Z) 1269.3
BTU/CU.FT. (WET) CORRECTED FOR (1/Z) 1247.2
REAL SPECIFIC GRAVITY 0.7291

ANALYSIS RUN AT 14.730 PSIA & 60 DEGREES F

CYLINDER # : 040
CYLINDER PRESSURE : 32 PSIG
DATE RUN : 08/09/94
ANALYSIS RUN BY : LINDA SPENCER

JICARILLA CONTRACT 146-12





STATE OF NEW MEXICO
ENERGY, MINERALS and NATURAL RESOURCES DIVISION
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE 52

The New Mexico
DRUG FREE
It's a State of Mind

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

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

Date: 12/19/94

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 12/2/94

for the Amow Jicarilla 146 #2
OPERATOR LEASE & WELL NO.

1K-4-25N-5W and my recommendations are as follows:
UL-S-T-R

Approve

Yours truly,
S. J.