STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

November 24, 1982

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-2434

Administrative Order No. DHC-379

Amoco Production Company
501 Airport Drive
Farmington, New Mexico 87401

Attention: R. W. Schroeder,
District Superintendent

Re: Jicarilla Tribal 396 Well No. 2
SE/4 SE/4, Sec. 8, T-23-N, R-3-W,
NMPM, Rio Arriba County
Undesignated Gallup Oil and
Chacon Dakota Associated Pools

Gentlemen:

Reference is made to your recent application for an exception to Rule 303-A of the Division Rules and Regulations to permit the subject well to commingle the production from both pools in the wellbore.

It appearing that the subject well qualifies for approval for such exception pursuant to the provisions of Rule 303-C, and that reservoir damage or waste will not result from such downhole commingling, and correlative rights will not be violated thereby, you are hereby authorized to commingle the production as described above.

In accordance with the provisions of Rule 303.C.4., total commingled oil production from the subject well shall not exceed 50 barrels per day, and total water production from the well shall not exceed 100 barrels per day. The maximum amount of gas which may be produced daily from the well shall be determined by multiplying 2000 by top unit allowable for the Undesignated Gallup Oil Pool.

Assignment of allowable to the well and allocation of production from the well shall be on the following basis:

Upper Pool: Oil 43%, Gas 43%
Lower Pool: Oil 57%, Gas 57%

Pursuant to Rule 303-C 5, the commingled authority granted by this order may be rescinded by the Division Director if, in his opinion, conservation is not being best served by such commingling.

Very truly yours,

JOE D. RAMEY,
Division Director

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

AZTEC DISTRICT OFFICE

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

OIL CONSERVATION DIVISION
BOX 2088
SANTA FE, NEW MEXICO 87501

DATE Oct 15, 1982

RE: Proposed MC_____
Proposed DHC ok
Proposed NSL_____
Proposed SWD_____
Proposed WFX_____
Proposed PMX_____

Gentlemen:

I have examined the application dated Sept 23, 1982

for the Amoco Prod. Co. (Operator) Jic. Bristol 396 #2 (Lease and Well No.) P-8-23N-3W (Unit, S-T-R)

and my recommendations are as follows:

Deny. Operator has not shown economic need as required by 303C(6)

Yours truly,

Bruce Chavez

Ask for annular fluid level and SICP
called 10-13-82

Amoco Production Company (USA)

Petroleum Center Building
501 Airport Drive
Farmington, New Mexico 87401
505-325-8841

R. W. Schroeder
District Superintendent

September 22, 1982

New Mexico Oil Conservation Division
Attn: Mr. Joe D. Ramey
Secretary-Director
P. O. Box 2088
Santa Fe, NM 87501

RECEIVED
SEP 23 1982
OIL CON. COM.
DIST. 3

File: DHS-411-986.510.1

Proposed Downhole Commingling
Jicarilla Tribal 396 No. 2
1120' FSL x 820' FEL, Section 8, T23N, R3W
Rio Arriba County, New Mexico

Amoco Production Company requests approval to commingle production from the Chacon Dakota and Undesignated Gallup pools in the subject well. This commingling will utilize a production packer set between the two horizons at 7420 feet and a sliding sleeve at 7413 feet in the 2-7/8 inch tubing landed at 7655 feet.

The proposed commingling is necessary to adequately drain our acreage and will not adversely affect either producing horizon. The following information is provided to support our application.

1. Total combined oil production from the two horizons is 27 BOPD. This is below 50 BOPD limit set for a producing depth of 7000 feet to 7999 feet.

2. During production tests, both the Dakota and Gallup horizons were capable of flowing on their own. After production from both horizons is stabilized, piston lift will be installed to more efficiently produce liquid hydrocarbons.

3. Samples of formation water collected from the Gallup and Dakota horizons were analyzed and found to be compatible with each other. Jicarilla Tribal 396 No. 1, located in the NE/4, Section 8, T23N, R3W, is commingled in the same horizons and does not suffer from precipitate problems due to incompatible waters.

4. Total water production from the two horizons is 30 BWPD. This is below the 50 BWPD limit set for a 7,000 feet producing depth. Water production from Amoco's Jicarilla Tribal 396 No. 1

Amoco Production Company (USA)
Petroleum Center Building
621 Airport Drive
Farmington, New Mexico 87401
505 326-9841

AMOCO

stabilized at 1 BWPD. The same type of stabilized water production can be expected from Jicarilla Tribal 396 No. 2.

5. The measured bottom hole pressure of the Dakota and Gallup formation is 2094 psig and 2010 psig, respectively. These pressures are the measured bottom hole pressures at the end of a seven day shut-in period. The bottom hole pressure of the lower pressure zone is 96 percent of the bottom hole pressure of the higher pressure zone. The ratio is within the 50 percent limit required for commingling.

6. The total value of the crude will not be reduced by commingling. All crudes with a gravity of 40°API receive the same price per barrel. The API gravity of the Gallup crude was 46.7° and the Dakota was 52.6°.

7. The total value of the gas will not be reduced by commingling. The base gas price for production from both horizons is identical since they share a common wellbore. Since the BTU adjustment is directly related to the BTU content in the gas, the value of the commingled gas production will be equal to the sum of the individual streams.

8. Amoco operates both the Gallup and Dakota horizons with a 100 percent working interest. The royalty ownership is also the same for both horizons.

In compliance with Rule 303C, "Downhole Commingling," we are hereby submitting two copies of the following.

Attachment No.

1 "Well Location and Dedication Plat" (NMOCD Form C-102) for the Gallup and Dakota formations.

2 A well completion resume for Jicarilla Tribal 396 No. 2.

3 Results of the seven-day flow test of the Chacon Dakota horizon.

4 Results of the seven-day flow test of the Undesignated Gallup horizon.

5 NMOCD Form C-116 showing the results of the final 24-hour flow test of the Dakota horizon.

6 NMOCD Form C-116 showing the results of the final 24-hour flow test of the Gallup horizon.

Attachment No.

7	Measured seven-day shut-in bottom hole pressure readings of the Gallup and Dakota horizons.
8	Results of the water analysis of samples from the Gallup and Dakota horizons.
9	Wellbore diagram of the proposed Gallup/Dakota commingling.
10	Map showing all wells offsetting the Jicarilla Tribal 396 No. 2 in a nine section block.
11	Names and addresses of all operators that were notified in writing of Amoco's proposed commingling.

RLR/tk

cc: New Mexico Oil Conservation Division
1000 Rio Brazos Road
Aztec, NM 87410

Minerals Management Service
Drawer 600
Farmington, NM 87401

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

ATTACHMENT NO. 1

Form C-102
Revised 10-1-78

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

Operator	Lease	Well No.
AMOCO PRODUCTION COMPANY	JICARILLA TRIBAL 396	2

Unit Letter	Section	Township	Range	County
P	8	23N	3W	Rio Arriba

Actual Footage Location of Well:
1120 feet from the South line and 820 feet from the East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
7506	Dakota /Gallup	Chacon Dakota Undes. Gallup	160/40 Acres

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

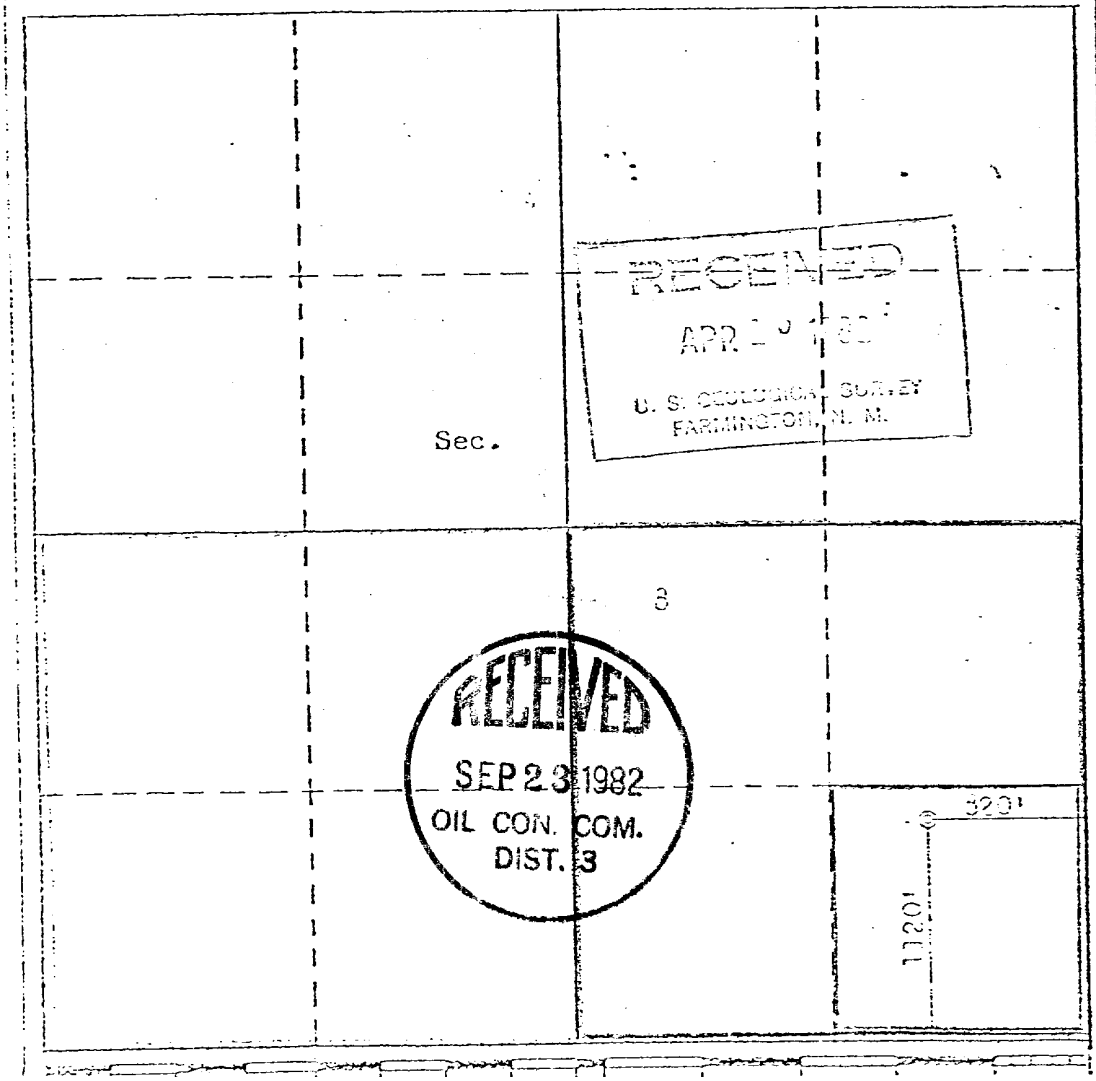
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

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.

Wayne L Peterson

Name: Wayne L. Peterson

Position: District Engineer

Company: Amoco Production Company

Date: April 15, 1982

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

Registered Professional Engineer and/or Land Surveyor: Fred B. Kerr Jr.

Certificate No.

ATTACHMENT NO. 2

Well Completion Data

Well Name: Jicarilla Tribal 396 No. 2

Location: 1120' FSL, 820' FEL, Section 8, T23N, R3W

Elevation: 7506' GL, TD = 7792', PBD = 7750'

Casing and Cement: 8-5/8", 24 lb, K-55 CSA 300' x 315 sx
5-1/2", 17 lb, K-55 CSA 7555' x 2050 sx
3-1/2", 9.2 lb, J-55 liner set at 7792' top at 7500'
2-7/8" tbg SA 7655'

Completion Interval: Chacon Dakota: 7670-7444'
Undesignated Gallup: 6622-6392'

Special Equipment: Sliding Sleeve at 7413'
Production Packer at 7420'

Logs Run: Dual Induction - Gamma Ray - SP
Compensated Neutron - Compensated Formation Density - Gamma Ray

Original Completion:

Dakota: First Stage:

Perforate 7670-7644' with 2 JSPF
Frac with 30,000 gallons of 30 pound gelled water and
46,000 pounds 20-40 sand
Max Treating Pressure: 2200 psi Min = 1750 psi
ISIP = 1500 psi AIR = 25 BPM

Second Stage:

Perforate 7564-7552', 7480-7470', and 7462-7444' with 2 JSPF
Frac with 80,000 gallons of 30 pound gelled water and
115,000 pounds of 20-40 sand
Max Pr = 2600 psi, Min = 1375 psi, Avg = 1450 psi
ISIP = 1400 psi AIR = 25 BPM

Gallup: Perforate 6622-6598', 6548-6526', 6504-6490', 6459-6454',
6446-6440', and 6430-6392' with 2 JSPF
Frac with 115,000 gallons of 20 pound gelled water and
162,700 pounds of 20-40 sand
Max Pr = 1400 psi, Min = 800 psi, Avg = 1000 psi
ISIP = 800 psi AIR = 25 BPM

ATTACHMENT NO. 3

Flow Test Results
Chacon Dakota Horizon

Date	Hours Produced	Barrels Oil	Barrels Water	MCF	FTP (Psig)
8-14-82	24	18	12	663	220
8-15-82	24	20	18	606	220
8-16-82	24	15	16	630	200
8-17-82	24	14	16	617	220
8-18-82	24	13	15	617	220
8-19-82	24	16	12	583	200
8-20-82	24	15	11	571	210
8-21-82	24	13	19	591	210
8-22-82	24	14	12	548	210
8-23-82	24	16	20	571	210

ATTACHMENT NO. 4

Flow Test Results
Undesignated Gallup Horizon

Date	Hours Produced	Barrels Oil	Barrels Water	MCF	FTP (Psig)
9-1-82	24	17	22	539	240
9-2-82	24	17	19	469	225
9-3-82	24	16	15	447	225
9-4-82	24	14	15	427	210
9-5-82	24	12	18	478	210
9-6-82	24	11	13	427	190
9-7-82	24	12	13	427	190

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

ATTACHMENT NO. 5

Form C-116
Revised 10-1-78

GAS - OIL RATIO TESTS

Operator: Amoco Production Company
Pool: Chacon Dakota
County: Rio Arriba
Address: 501 Airport Drive, Farmington, NM 87401
TYPE OF TEST - (X): Scheduled [ ] Completion [ ] Special [X]

LEASE NAME	WELL NO.	LOCATION U	S	T	R	DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOWABLE	LENGTH OF TEST HOURS	PROD. DURING TEST WATER BBLS.	GRAV. OIL	OIL BBLS.	GAS M.C.F.	GAS - OIL RATIO CU.FT/BBL
Jicarilla Tribal 396	2	P	8	23	3	8-23-82	F	20/64	210		24	20	52.6	16	571	35,687

No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Division.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Division in accordance with Rule 301 and appropriate pool rules.

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

Dale H Skinner
(Signature)
District Engineer
(Title)
September 21, 1982

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

ATTACHMENT NO. 6

Form C-116
Revised 10-1-78

GAS-OIL RATIO TESTS

Operator: Amoco Production Company
Pool: Undesignated Gallup
County: Rio Arriba
Address: 501 Airport Drive, Farmington, NM 87401
TYPE OF TEST - (X): Scheduled [ ] Completion [ ] Special [X]

LEASE NAME	WELL NO.	LOCATION U	S	T	R	DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOWABLE	LENGTH OF TEST HOURS	PROD. DURING TEST WATER BBLS.	GRAV. OIL	OIL BBLS.	GAS M.C.F.	GAS - OIL RATIO CU.FT/BBL
Jicarilla Tribal 396	2	P	8	23	3	9-7-82	F	20/64	190		24	13	46.7	12	427	35,583

gas oil ratio

427 / 12 = 17,083

No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Division.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Division in accordance with Rule 301 and appropriate pool rules.

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

Dale H Abernathy
(Signature)
District Engineer
(Title)
September 21, 1982

ATTACHMENT NO. 7

Measured Seven-Day Bottom Hole Pressure

Horizon	Date	Depth of Bomb	Pressure
Chacon Dakota	8-26-82	7600 feet	2094 psig
Undesignated Gallup	9-16-82	7400 feet	2010 psig

.52

@ 6000' 1566 #

@ 7000'

Dakota surface 1519

Calcium	216	Sulfate	1,107
Magnesium	34	Bicarbonate	54.9
Potassium	0	Carbonate	0

Total Dissolved Solids = 25,479 ppm
Specific Gravity = 1.018

Undesignated Gallup

	Dissolved Solids (ppm)		Dissolved Solids (ppm)
Sodium	8643	Chloride	12,907
Calcium	380	Sulfate	1,108
Magnesium	35	Bicarbonate	670
Potassium	0	Carbonate	0

Phone DAvis 5-2393

B&R SERVICE, INC.

★ SURVEYS ★ ★

BOX 1048 - FARMINGTON, NEW MEXICO

Pressure Survey

COMPANY Amoco Production Co. LEASE Jicarilla Apache Tribal WELL 396-2

FIELD ..... LOCATION .....

COUNTY Rio Arriba STATE N.Mex. DATE 9-16-82

SHUT-IN 7 Days ELEVATION ..... DATUM .....

ZERO POINT G.L. TBG. PRESSURE 1198 CASING PRESSURE 627

TBG. DEPTH ..... CASING SET ..... P.B.T.D. .....

PACKER SET ..... CASING PERF. ..... MAX. TEMP. .....

FLUID LEVEL 5700'

DEPTH	PRESSURE	GRADIENT
0	1198	----
1000	1252	.054
2000	1299	.047
3000	1343	.044
4000	1392	.049
5000	1439	.047
6000	1566	.127
7000	1838	.272
7400	2010	.430

BOTTOM HOLE PRESSURE DATA

ELL NAME & NO. Jic TR 396-2

FIELD

8-26-82

Well Completion Data

Total Depth
Plugged Back Depth
Production Casing " CSA Ft.
Tubing " Landed At Ft.
Seating Nipple Depth
Perforations

Mid-Point Perforations
Elevation GL; DF; RDB
Datum (Sub-Sea)

Pressure Data

Shut-in Tubing Pressure 1540 PSIG
Shut-in Casing Pressure 440 PSIG

Bottom Hole Pressure Data

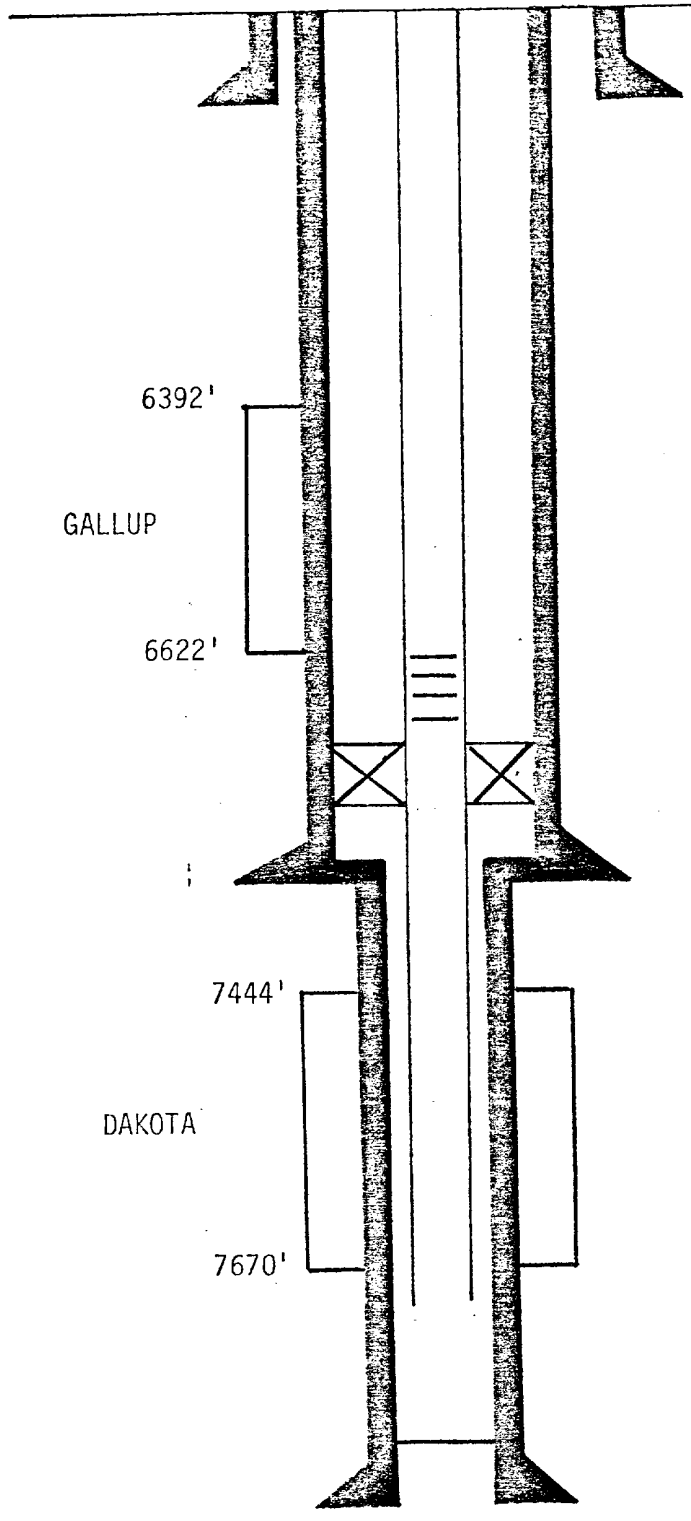
Type Instrument Used Amerada RPG-3 ELEMENT
Pressure Range of Element 0-3000
Date Element Calibrated

Time	Depth Stopped	Extension	Pressure	Gradient	Temperature
	Surface	.998	1519		
	7600	1.374	2094		

BHP 2094 Datum

Remarks

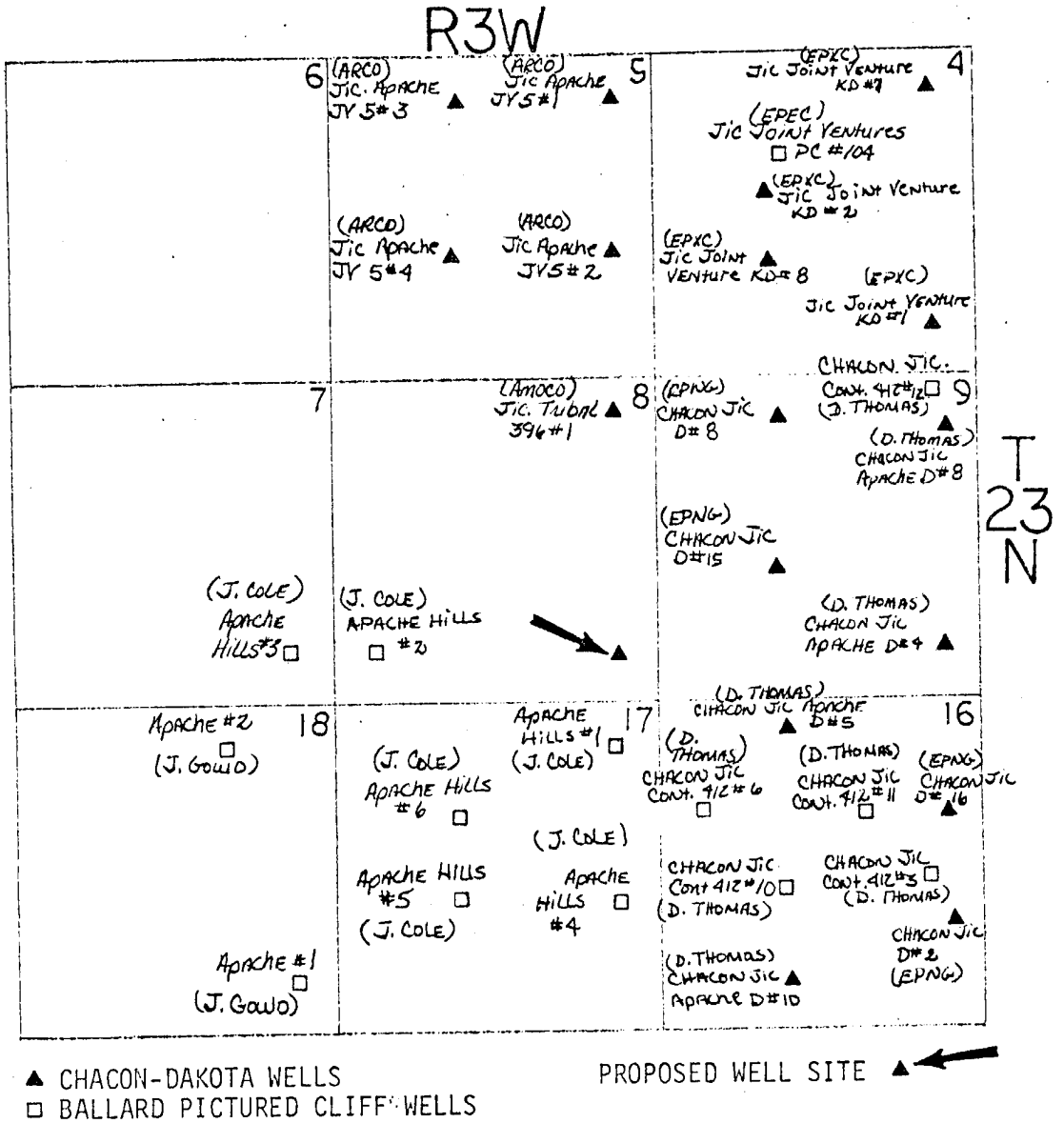
ATTACHMENT NO. 9



Amoco Production Company	SCALE:
JICARILLA APACHE 396 #2	DRG. NO.

ATTACHMENT NO. 10

JICARILLA APACHE 396 #2



▲ CHACON-DAKOTA WELLS
□ BALLARD PICTURED CLIFF WELLS

PROPOSED WELL SITE ▲

ATTACHMENT NO. 11

Names and Addresses of Offset Operators
To Jicarilla Tribal 396 No. 2

The following were notified in writing of Amoco's intent to commingle production from the Gallup and Dakota in Jicarilla Tribal 396 No. 2.

Arco
P. O. Box 5540
Denver, CO 80217

Dave M. Thomas, Jr.
3001 Northridge
Farmington, NM 87401

El Paso Exploration
P. O. Box 990
Farmington, NM 87401

Minerals Management Service
Drawer 600
Farmington, NM 87401