

**Schedule of Lands and Working Interest Ownership  
In First Expansion to Basin Fruitland Coal  
Participating Area**

**Rincon Unit**

**Tract No. 1 (Unit Tract No. 1)**  
(Acreage in Unit Tract : 520.00 ac.)

LESSOR: U.S.A.  
SERIAL NO.: SF-079052  
ACREAGE DESCRIPTION: Township 27 North, Range 6 West  
Section 18: SE/4, E/2 SW/4  
WORKING INTEREST OWNER(S): Union Oil Company of California - 100%

ACREAGE INCLUDED IN FIRST  
EXPANSION TO PARTICIPATING AREA: 240.00 Acres

PERCENTAGE OF FRUITLAND COAL  
FORMATION PRODUCTION ALLOCATED  
TO THIS TRACT: 9.35049%

**Tract No. 2 (Unit Tract No. 17)**  
(Acreage in Unit Tract : 157.76 ac.)

LESSOR: U.S.A.  
SERIAL NO.: SF-079404-A  
ACREAGE DESCRIPTION: Township 27 North, Range 6 West  
Section 18: Lots 1 thru 4 (E/2E/2)  
WORKING INTEREST OWNER(S): El Paso Natural Gas Company - 100%

ACREAGE INCLUDED IN FIRST  
EXPANSION TO PARTICIPATING AREA: 157.76 Acres

PERCENTAGE OF FRUITLAND COAL  
FORMATION PRODUCTION ALLOCATED  
TO THIS TRACT: 6.14639%

Schedule of Lands and Working Interest Ownership

Rincon Unit

May 22, 1991

Page 2

**Tract No. 3 (Unit Tract No. 15)**

(Acreage in Unit Tract : 959.40 ac.)

LESSOR: U.S.A.  
SERIAL NO.: SF-079366  
ACREAGE DESCRIPTION: Township 27 North, Range 6 West  
Section 21: SW/4  
WORKING INTEREST OWNER(S): Union Oil Company of California - 83.33%  
El Paso Natural Gas company - 16.67%  
ACREAGE INCLUDED IN FIRST  
EXPANSION TO PARTICIPATING AREA: 160 Acres  
PERCENTAGE OF FRUITLAND COAL  
FORMATION PRODUCTION ALLOCATED  
TO THIS TRACT: 6.23366%

**Tract No. 4 (Unit Tract No. 15A)**

(Acreage in Unit Tract : 1599.32 ac.)

LESSOR: U.S.A.  
SERIAL NO.: SF-079366  
ACREAGE DESCRIPTION: Township 27 North, Range 6 West  
Section 21: NW/4  
WORKING INTEREST OWNER(S): Union Oil Company of California - 100%  
ACREAGE INCLUDED IN FIRST  
EXPANSION TO PARTICIPATING AREA: 160.00 Acres  
PERCENTAGE OF FRUITLAND COAL  
FORMATION PRODUCTION ALLOCATED  
TO THIS TRACT: 6.23366%

**Tract No. 5 (Unit Tract No. 14)**

(Acreage in Unit Tract : 840.00 ac.)

LESSOR: U.S.A.  
SERIAL NO.: SF-079365  
ACREAGE DESCRIPTION: Township 27 North, Range 6 West  
Section 23: S/2  
WORKING INTEREST OWNER(S): Union Oil Company of California - 83.33%  
El Paso Natural Gas Company - 16.67%  
ACREAGE INCLUDED IN FIRST  
EXPANSION TO PARTICIPATING AREA: 320.00 Acres  
PERCENTAGE OF FRUITLAND COAL  
FORMATION PRODUCTION ALLOCATED  
TO THIS TRACT: 12.46732%

**Tract No. 6 (Unit Tract No. 21)**  
(Acreage in Unit Tract : 600.00 ac.)

LESSOR: U.S.A.  
SERIAL NO.: NM-013654  
ACREAGE DESCRIPTION: Township 27 North, Range 6 West  
Section 18: NE/4, E/2 NW/4  
WORKING INTEREST OWNER(S): Amoco Production Company - 50%  
Conoco, Inc. - 50%  
ACREAGE INCLUDED IN FIRST  
EXPANSION TO PARTICIPATING AREA: 240.00 Acres  
PERCENTAGE OF FRUITLAND COAL  
FORMATION PRODUCTION ALLOCATED  
TO THIS TRACT: 9.35049%

**Tract No. 7 (Unit Tract No. 22)**  
(Acreage in Unit Tract : 160.00 ac.)

LESSOR: State of New Mexico  
SERIAL NO.: E-289-29  
ACREAGE DESCRIPTION: Township 27 North, Range 7 West  
Section 36: SW/4  
WORKING INTEREST OWNER(S): Union Oil Company of California - 83.33%  
Meridian Oil, Inc. - 16.67%  
ACREAGE INCLUDED IN FIRST  
EXPANSION TO PARTICIPATING AREA: 160.00 Acres  
PERCENTAGE OF FRUITLAND COAL  
FORMATION PRODUCTION ALLOCATED  
TO THIS TRACT: 6.23366%

**Tract No. 8 (Unit Tract No. 25)**  
(Acreage in Unit Tract : 520.00 ac.)

LESSOR: State of New Mexico  
SERIAL NO.: E-290-28  
ACREAGE DESCRIPTION: Township 27 North, Range 7 West  
Section 36: W/2 SE/4  
WORKING INTEREST OWNER(S): Union Oil Company of California - 83.33%  
Meridian Oil, Inc. - 16.67%  
ACREAGE INCLUDED IN FIRST  
EXPANSION TO PARTICIPATING AREA: 80 Acres  
PERCENTAGE OF FRUITLAND COAL  
FORMATION PRODUCTION ALLOCATED  
TO THIS TRACT: 3.11683%

**Tract No. 9 (Unit Tract No. 24)**  
(Acreage in Unit Tract : 200.00 ac.)

LESSOR: State of New Mexico  
SERIAL NO.: E-290-28  
ACREAGE DESCRIPTION: Township 27 North, Range 7 West  
Section 36: E/2 SE/4  
WORKING INTEREST OWNER(S): Union Oil Company of California - 83.33%  
Meridian Oil, Inc. - 16.67%  
ACREAGE INCLUDED IN FIRST  
EXPANSION TO PARTICIPATING AREA: 80 Acres  
PERCENTAGE OF FRUITLAND COAL  
FORMATION PRODUCTION ALLOCATED  
TO THIS TRACT: 3.11683%

**Tract No. 10 (Unit Tract No. 3)**  
(Acreage in Unit Tract : 336.22 ac.)

LESSOR: U.S.A.  
SERIAL NO.: SF-079298  
ACREAGE DESCRIPTION: Township 27 North, Range 7 West  
Section 13: Lot 1 thru 8 (S/2)  
WORKING INTEREST OWNER(S): Union Oil Company of California - 83.33%  
Meridian Oil, Inc. - 16.67%  
ACREAGE INCLUDED IN FIRST  
EXPANSION TO PARTICIPATING AREA: 336.22 Acres  
PERCENTAGE OF FRUITLAND COAL  
FORMATION PRODUCTION ALLOCATED  
TO THIS TRACT: 13.09926%

**Tract No. 11 (Unit Tract No. 19)**  
(Acreage in Unit Tract : 2645.09 ac.)

LESSOR: U.S.A.  
SERIAL NO.: SF-080385  
ACREAGE DESCRIPTION: Township 27 North, Range 7 West  
Section 27: S/2  
WORKING INTEREST OWNER(S): Union Oil Company of California - 83.33%  
Meridian Oil, Inc. - 16.67%  
ACREAGE INCLUDED IN FIRST  
EXPANSION TO PARTICIPATING AREA: 320.00 Acres  
PERCENTAGE OF FRUITLAND COAL  
FORMATION PRODUCTION ALLOCATED  
TO THIS TRACT: 12.46732%

**Tract No. 12 (Unit Tract No. 4)**  
(Acreage in Unit Tract : 160.00 ac.)

LESSOR: U.S.A.  
SERIAL NO.: SF-079298-A  
ACREAGE DESCRIPTION: Township 27 North, Range 7 West  
Section 14: NW/4  
WORKING INTEREST OWNER(S): El Paso Natural Gas Company - 100%  
ACREAGE INCLUDED IN FIRST  
EXPANSION TO PARTICIPATING AREA: 160.00 Acres  
PERCENTAGE OF FRUITLAND COAL  
FORMATION PRODUCTION ALLOCATED  
TO THIS TRACT: 6.23366%

**Tract No. 13 (Unit Tract No. 20)**  
(Acreage in Unit Tract : 337.63 ac.)

LESSOR: U.S.A.  
SERIAL NO.: NM-012209  
ACREAGE DESCRIPTION: Township 27 North, Range 7 West  
Section 14: Lots 1 thru 4 (NE/4)  
WORKING INTEREST OWNER(S): Amoco Production Company - 50%  
Conoco, Inc. - 50%  
ACREAGE INCLUDED IN FIRST  
EXPANSION TO PARTICIPATING AREA: 152.73 Acres  
PERCENTAGE OF FRUITLAND COAL  
FORMATION PRODUCTION ALLOCATED  
TO THIS TRACT: 5.95043%

**Summary Of Lands Included In  
The First Expansion To  
The Fruitland Coal Participating Area**

<u>Lease</u>	<u>Unit Tract No.</u>	<u>Acreage</u>	<u>Percentage</u>
U.S.A. SF-079052	1	240.00	9.35049%
U.S.A. SF-079404-A	17	157.76	6.14639%
U.S.A. SF-079366	15	160.00	6.23366%
U.S.A. SF-079366	15A	160.00	6.23366%
U.S.A. SF-079365	14	320.00	12.46732%
U.S.A. NM-013654	21	240.00	9.35049%
State of New Mexico E-289-29	22	160.00	6.23366%
State of New Mexico E-290-28	25	80.00	3.11683%
State of New Mexico E-290-28	24	80.00	3.11683%
U.S.A. SF-079298	3	336.22	13.09926%
U.S.A. SF-080385	19	320.00	12.46732%
U.S.A. SF-079298-A	4	160.00	6.23366%
U.S.A. NM-012209	20	152.73	5.95043%
		2,566.71	100.00000%

**Summary of Working Interest Ownership  
In First Expansion To  
Basin Fruitland Coal Participating Area**

<u>Working Interest Owner</u>	<u>Working Interest Percentage</u>
Union Oil Company of California	76.82091%
Wiser Oil Company	2.54378%
H. R. Stasney & Sons Company	1.30259%
Meridian Oil, Inc., As Agent	10.59527%
Meridian Oil, Inc., Individually	1.55217%
Jones Company	1.30259%
Conoco, Inc.	2.29005%
Amoco Production Company	2.29004%
Beryl B. McMahan	.65130%
Beryl B. McMahan, Trustee of the Thomas V. McMahan Trust	.32565%
Beryl B. McMahan, Trustee of the Gwin M. Lewis Trust	<u>.32565%</u>
	100.00000%

APPLICATION TO EXPAND THE BASIN FRUITLAND COAL GAS PARTICIPATING AREA  
- RINCON UNIT - RIO ARRIBA COUNTY, NEW MEXICO

Duane Spencer  
Chief of Reservoir Management  
Bureau of Land Management - Minerals Division  
1235 La Plata Highway  
Farmington, New Mexico 87401

Union Oil Company of California, as unit operator of the Rincon Unit, respectfully submits for your approval the following described lands to constitute expansion to the participating area for the Basin Fruitland Coal Gas producing formation, to wit:

TOWNSHIP 27 NORTH, RANGE 7 WEST, N.M.P.M.

Section 36: South/2

Containing 320 acres, more or less

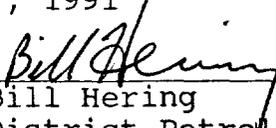
In support of this application, and in addition to the geologic and engineering reports, the following are attached:

- 1) Structure Top - Basin Fruitland Coal Gas Formation
- 2) Basin Fruitland Coal Gas Formation Gross Isopach
- 3) Type Log
- 4) Land Map - Rincon Unit
- 5) Rincon Unit #273 Fruitland Coal Gas Production Decline Curve
- 6) Rincon Unit #273 Fruitland Coal Gas Economics
- 7) Schedule of Lands and Working Interest Ownership in the expansion to the Basin Fruitland Coal Gas Participating Area (Participation Allocation Formula)
- 8) Applicant's Statement and Affidavit

This application is predicated on six months of actual production history from the Rincon Unit #273 well which first delivered on August 24, 1990.

Applicant respectfully requests your approval of the hereinabove selection of lands to constitute expansion to the Basin Fruitland Coal Gas Formation participating area, to be effective August 24, 1990.

Dated this 31st day of May, 1991

  
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Bill Hering  
District Petroleum Engineer  
Union Oil Company of California

### Well Summary

Well Name: Rincon Unit #273  
Location: 1550'FSL, 2105'FWL, Sec 36, T27N, R7W  
Elevation: 6540' GL  
Total Depth: 2936'  
Lease Number: E-289-29  
Pool/Formation: Basin Fruitland Coal Gas  
Spud Date: 6-24-90  
Completion Date: 7-24-90  
1st Delivery Date: 8-24-90  
Perf'd Interval: 2766-2769,2798-2809,2849-2863,2867-2882.

### Geologic Summary

The Fruitland Formation was deposited in a coastal plain environment landward of the Pictured Cliffs strandline. It consists of shales, siltstones, sandstones and coal. The coals were deposited in low-lying areas such as lagoons, swamps and bayous behind the barrier islands, bars, and beaches of the Pictured Cliffs sandstone. The coal is best developed in the basal Fruitland, and extends aerially over the entire basin with the exception of a small region on the eastern margin. Net coal varies from 20 to 80 feet thick with the thickest sections being in the north-central part of the basin. The Rincon Unit coals range in thickness from 30 to 70 feet and in some areas of the unit are split into an upper and a basal coal zone. The coal itself is considered High Volatile C Bituminous in rank. Regional dip is 1 to 2 degrees to the northeast, and structure does not appear to be a factor in natural gas entrapment anywhere in the area of the unit.

### Engineering Summary

The Rincon Unit #273 was drilled and completed by Union Oil Company of California as a Basin Fruitland Coal Gas producer in 1990. Surface pipe measuring 8-5/8" was set at 360 feet and cemented with 300 sacks to surface. Production casing measuring 4-1/2" was then set at 2936 feet and cemented in two stages to surface with 750 sacks cement. After drilling out to PBTD of 2930' the upper and lower coal zones were perforated from 2766'-2882' with 4 shots per foot and fracture stimulated with 240,000# 20/40 sand, 1.02 MMSCF N2 and 23,962 gallons cross-linked gel water. The recorded initial potential and 24 hour shut-in pressure were 249 MCFD and 563 psi, respectively. The well was first delivered to the El Paso Natural Gas pipeline system on August 24, 1990. The current deliverability for the well against a 150# line pressure is 143 MCFD.

Volumetrics calculated on the below-listed parameters yields a recoverable gas volume of 0.42 Bcf.

Net Pay: 47 ft  
Drainage area: 160 acres  
Gas Content: 169 SCF/ton  
Tonnage Factor: 1955 tons/acre-feet (from density log)  
Recovery Factor: 17 %

Economics

Completion Cost: \$239,000  
Royalty Burden: 19.00%  
Gas Price: \$1.20/MMBTU  
Operating Cost: \$300/month  
Tax Credit: \$0.84/MMBTU constant  
Production Rate: Maximum - 355 MCFD, Current - 143 MCFD  
No associated water production

Economics based on the above are attached. Given the investment cost to complete this well payout should occur in 3.3 years. Compared with net total revenue this Basin Fruitland Coal Gas well produces in economic quantities above operating costs.

STATE OF NEW MEXICO

COUNTY OF SAN JUAN

APPLICANT'S STATEMENT AND AFFIDAVIT

BEFORE ME, the undersigned authority on this day personally appeared Bill Hering, District Petroleum Engineer, known to me to be the person whose name is subscribed to this instrument, who, having been by me first duly sworn, upon oath states as follows:

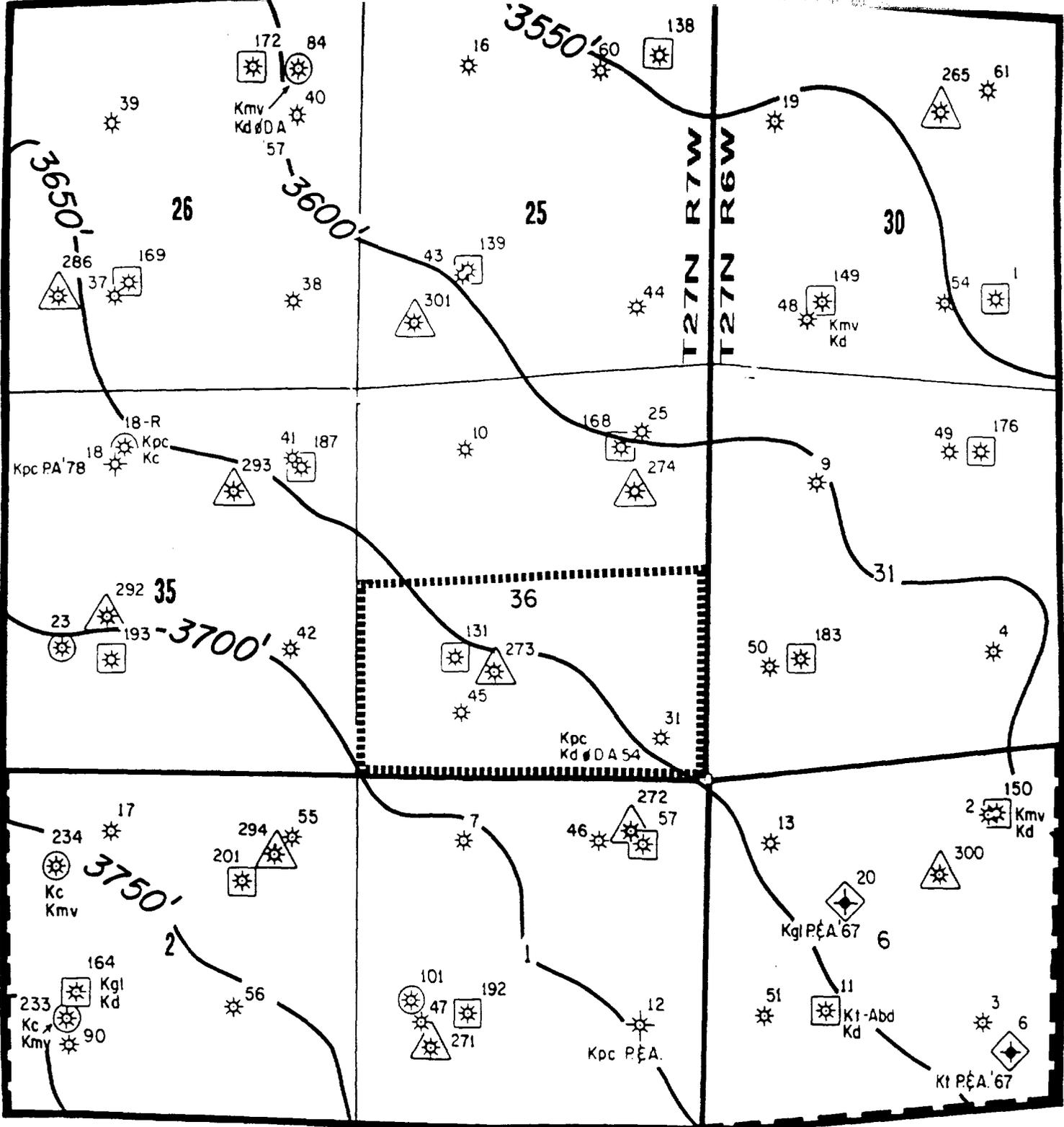
- 1) That this Statement and Affidavit is made concerning this application for expansion to the Basin Fruitland Coal Gas participating area in the Rincon Unit, in the S/2 Section 36, T27N- R7W, comprising 320 acres.
- 2) That to the best of his information, knowledge and belief, the information supplied is true.
- 3) That notice of this application has been mailed or delivered to the Rincon Unit working interest owners in accordance with the unit agreement and the unit operating agreement.
- 4) That he certifies that the information and data contained in the application are true and correct and that all copies of records or summaries of such records relied upon in the application are true, correct and authentic copies of documents on file in the offices of Union Oil Company of California.
- 5) That he is of lawful age, that he is a responsible official of Union, that he is duly authorized to make this Statement and Affidavit on behalf of Union, that he has knowledge of the facts contained herein, that this Statement and Affidavit is true and correct, and that he adopts the allegations herein as his sworn statement.

\_\_\_\_\_  
SUBSCRIBED AND SWORN TO before me, this undersigned authority, on this day of May 31, 1991.

Arden K. Lease  
Notary Public in and for  
San Juan County, New Mexico

My Commission Expires:

6/12/94



**PRODUCING INTERVAL**

- |   |                 |     |  |
|---|-----------------|-----|--|
| ☉ | FARMINGTON      | Kfm |  |
| ☉ | KIRTLAND        | Kk  |  |
| ☉ | FRUITLAND       | Kf  |  |
| ☉ | PICTURED CLIFFS | Kpc |  |
| ☉ | CHACRA          | Kc  |  |
| ☉ | LA VENTANA      | Klv |  |
| ☉ | MESAVERDE       | Kmv | { Kch CLIFFHOUSE<br>Km MENEFE<br>Kpl POINT LOOKOUT       } |
| ☉ | GALLUP          | Kgl |  |
| ☉ | DAKOTA          | Kd  |  |

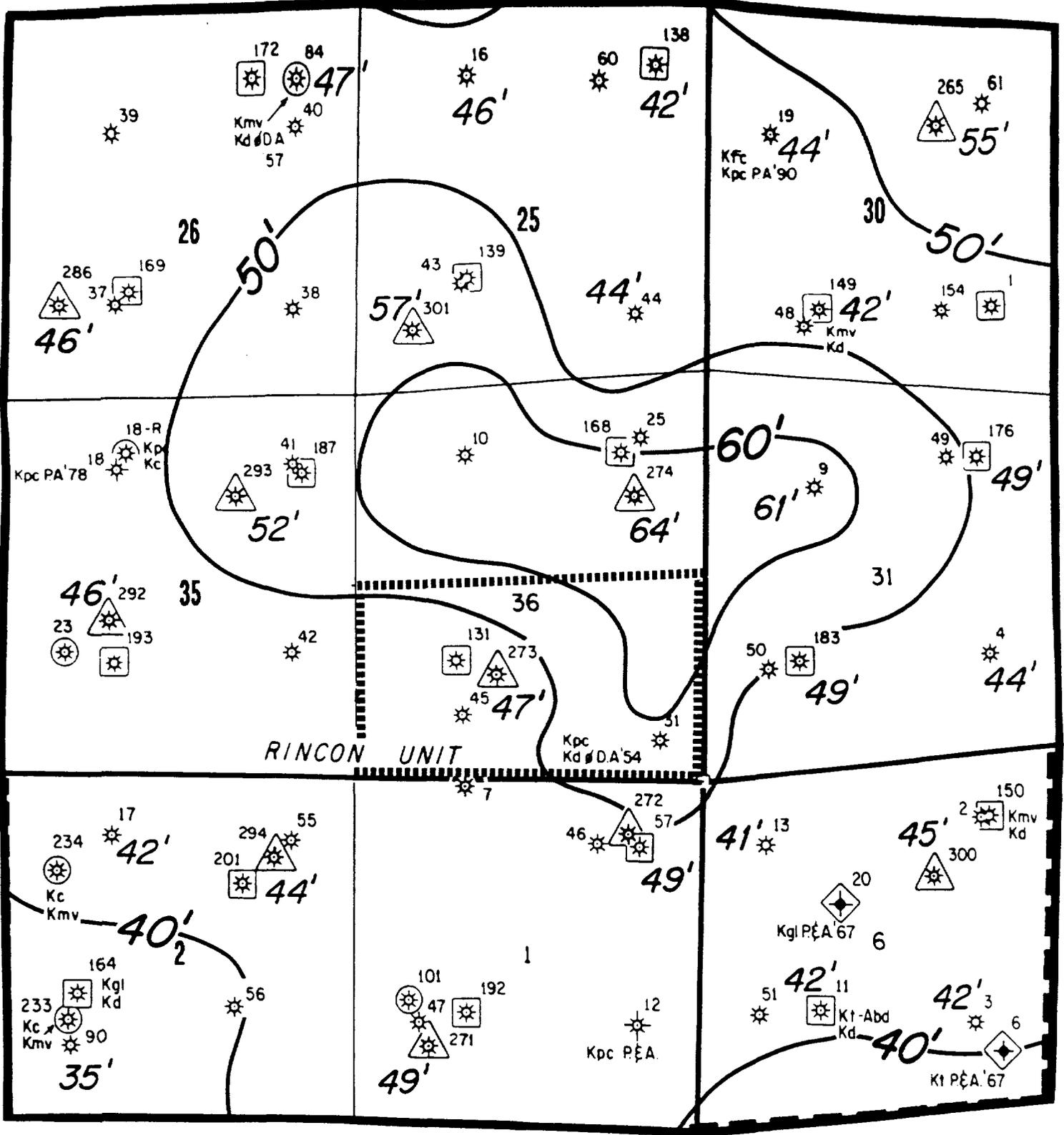
**UNOCAL**

NORTH AMERICAN OIL & GAS DIVISION  
SOUTHWESTERN REGION

**RINCON UNIT**  
RIO ARRIBA COUNTY, NEW MEXICO  
**STRUCTURE**  
BASE OF FRUITLAND COAL  
RINCON UNIT # 273  
S½ SEC. 36 -T27N R7W

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INTEND BY: D.V.H.      SCALE 2½" = 1 Mi.      C.I. 50'  
DRAFT BY:      DATE: 5-25-90      I.R. NO. 14184



PRODUCING INTERVAL

☉	FARMINGTON	Kfm	
☉	KIRTLAND	Kk	
☉	FRUITLAND	Kf	
☉	PICTURED CLIFFS	Kpc	
☉	CHACRA	Kc	
☉	LA VENTANA	Klv	
☉	MESAVERDE	Kmv	{ Kcm CLIFFHOUSE Kcn MENESEE Kcl POINT LOOKOUT       }
☉	JALLUP	Kjl	
☉	OKOTA	Kd	{ Kt TOCITO Kgh GREENHORN       }

# UNOCAL 76

NORTH AMERICAN OIL & GAS DIVISION  
SOUTHWESTERN REGION

## RINCON UNIT

RIO ARRIBA COUNTY, NEW MEXICO

### ISOPACH

### FRUITLAND COAL

### RINCON UNIT # 273

### S 1/2 SEC. 36 -T27N R7W

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INTERP BY D.V.H.      SCALE 2 1/2" = 1 Mi. CI 10'

DRAFT BY      DATE 9-26-90      LINE NO. 10134