

Unocal Oil & Gas Division  
Unocal Corporation  
3300 North Butler Avenue  
Suite 200  
Farmington, New Mexico 87401  
Telephone (505) 326-7600  
Fax: (505) 326-6145

**UNOCAL 76**

May 21, 1993

**CERTIFIED RETURN RECEIPT REQUESTED**

Farmington District

New Mexico Oil Conservation Division  
Attn: Mr. William J. LeMay  
P.O. Box 2088  
Santa Fe, New Mexico 87504-2088

New Mexico Oil Conservation Division  
Attn: Mr. Frank Chavez  
1000 Rio Brazos Road  
Aztec, New Mexico 87410

**RECEIVED**  
MAY 24 1993  
**OIL CON. DIV**  
**DIST. 3**

Dear Sirs:

Union Oil Company of California (UNOCAL) requests permission to downhole commingle production from the Blanco Mesaverde and Basin Dakota formations in the following well:

Rincon Unit No. 129M  
1035' FSL, 805' FEL  
Section 29, T27N, R6W  
Rio Arriba County, New Mexico

As provided by Order No. R-9893, administrative approval may be granted without notice and hearing.

As required for an exception to rule 303-A, the following information is attached:

1. An acreage dedication plat showing offset lease ownership.
2. A Form C-116 showing current productivity from each zone.
3. A wellbore diagram with completion detail.
4. A measured bottomhole pressure from each zone and a calculated adjustment to a common datum.
5. Gas analyses from each zone.
6. An allocation formula for commingled production.
7. A copy of the notification letter sent to all offset operators and the Bureau of Land Management.

The Blanco Mesaverde formation is uneconomic to drill as a stand alone well. To develop these reserves, a dual or commingled completion is required. We estimate an ultimate recovery of approximately 750 MMCF from the Mesaverde horizon, which would otherwise remain undeveloped.

UNOCAL wishes to commingle the production from the Blanco Mesaverde and Basin Dakota formations in order to more effectively lift condensate production and justify installation of compression facilities. This will result in incremental reserves for both formations.

Both zones produce essentially dry gas. Therefore, the respective formation fluids are compatible. Also, no crossflow will occur between the commingled zones.

If you have any questions, please contact Dana Delventhal at (505)326-7600. Thank you for your consideration in this matter.

Sincerely,

Union Oil Company of California  
dba UNOCAL

A handwritten signature in black ink, appearing to read "Glen O. Papp", with a stylized flourish at the end.

Glen O. Papp  
Field Superintendent

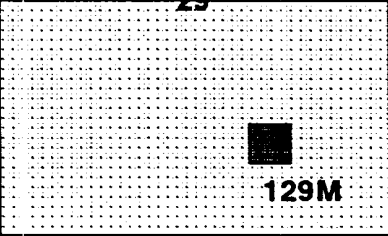
Attachments

GOP/DLD/df

**OFFSET LEASE OWNERSHIP**

**R 6 W**

**T  
27  
N**

|           |                                                                                                                |                                                     |
|-----------|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| <b>19</b> | <b>20</b>                                                                                                      | <b>21</b><br><br><b>RINCON UNIT</b>                 |
| <b>30</b> | <b>29</b><br><br><b>129M</b> | <b>28</b>                                           |
| <b>31</b> | <b>32</b>                                                                                                      | <b>Caulkins Prod etal<br/>3547</b><br><br><b>33</b> |

Submit 2 copies to Appropriate  
District Office.  
DISTRICT I  
P.O. Box 1980, Hobbs, NM 88240  
DISTRICT II  
P.O. Drawer DD, Artesia, NM 88210  
DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico  
Energy, Minerals and Natural Resources Department

## OIL CONSERVATION DIVISION

P.O. Box 2088  
Santa Fe, New Mexico 87504-2088

Form C-116  
Revised 1/1/89

### GAS - OIL RATIO TEST

|                                                            |          |                                         |    |                                                                                 |              |            |             |                   |                      |                   |              |           |                            |            |          |
|------------------------------------------------------------|----------|-----------------------------------------|----|---------------------------------------------------------------------------------|--------------|------------|-------------|-------------------|----------------------|-------------------|--------------|-----------|----------------------------|------------|----------|
| Operator<br>Union Oil Company of California                |          | Pool<br>Blanco Mesaverde / Basin Dakota |    | County<br>Rio Arriba                                                            |              |            |             |                   |                      |                   |              |           |                            |            |          |
| Address<br>3300 N. Butler, Suite 200, Farmington, NM 87401 |          | TYPE OF TEST - (X)                      |    | Completion <input checked="" type="checkbox"/> Special <input type="checkbox"/> |              |            |             |                   |                      |                   |              |           |                            |            |          |
| LEASE NAME                                                 | WELL NO. | LOCATION                                |    |                                                                                 | DATE OF TEST | CHOKE SIZE | TBG. PRESS. | DAILY ALLOW. ABLE | LENGTH OF TEST HOURS | PROD. DURING TEST |              |           | GAS - OIL RATIO CU FT/BBL. |            |          |
|                                                            |          | U                                       | S  | T                                                                               |              |            |             |                   |                      | R                 | WATER BBL'S. | GRAV. OIL |                            | OIL BBL'S. | GAS MCF. |
| Rincon Unit<br><br>Blanco Mesa verde<br><br>Basin Dakota   | 129M     | P                                       | 29 | 27N                                                                             | 6W           | 10/19/92   | F 11/64"    | 100               |                      | 24                | 6            | 55        | 2                          | 110        | 55,000   |
|                                                            |          |                                         |    |                                                                                 |              | 10/10/92   | F 17/64"    | 260               |                      | 24                | 8            |           | 0                          | 290        | -----    |

#### Instructions:

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.

(See Rule 301, Rule 1116 & appropriate pool rules.)

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

*W.L. Irwin*

Signature

W.L. Irwin District Petroleum Engineer

Printed name and title

11/19/92

Date

505/326-7600

Telephone No.

**RINCON UNIT NO. 129-M**  
1035' FSL, 805' FEL, SEC 29, T27N-R6W  
RIO ARRIBA COUNTY, NM

KB Datum 10' Above GL

**12-1/4" HOLE**

**8-5/8" 24# J-55 @ 385'**  
CMT W/ 240 SX - CIRC TO SURF

241 jts, 2-3/8", 4.7# EUE J-55 tbg.  
(FHD @ 7549')

DV TOOL @ 3453'

**UPPER MESAVERDE**

4942-60 & 4990-5002 W/ 4 SPF  
Frac w/: 32,540 gal 30# XL gel, 118,300# 20/40  
sand @ 30 BPM

**LOWER MESAVERDE**

5174-82, 5258-84, 5444-78,  
5550-58 W/ 4 SPF  
Frac w/: 64,140 gal 30# XL gel, 222,400# 20/40  
sand @ 30 BPM

Sliding Sleeve  
@ 5583'

Guiberson Uni VI  
pkr @ 5592'

DV TOOL @ 5727'

**DAKOTA**

7426-60, 7556-80, 7612-54 W/ 4 SPF  
Frac w/: 67,900 gal 35# XL gel, 249,400# 20/40  
sand @ 30 BPM

**7-7/8" HOLE**

**5-1/2", 17# N-80 & K-55 @ 7754'**  
CMT'D IN THREE STAGES: 1st stg w/ 369 sx (5727'-TD),  
2nd stg w/ 314 sx (3453'-5727'), 3rd stg w/ 670 sx  
(Surf-3453')

PBTD = 7706'  
TD = 7755'

# B & R SERVICE, INC.

P. O. Box 1048  
Farmington, New Mexico 87499  
(505) 325-2393

Company UNOCAL CORPORATION Lease RINCON Well 129 M (M.V.)  
County RIO ARriba State N. MEX. Date 10/24/92  
Shut-In \_\_\_\_\_ Zero Point G.L. Tbg. Pressure 429  
Casing Pressure \_\_\_\_\_ Tbg. Depth \_\_\_\_\_ Casing Perf. \_\_\_\_\_  
Max. Temp. \_\_\_\_\_ Fluid Level 4300'

| <u>DEPTH</u> | <u>PSIG</u> | <u>GRADIENT</u> |
|--------------|-------------|-----------------|
| 0            | 429         | ----            |
| 1000         | 442         | .013            |
| 2000         | 456         | .014            |
| 3000         | 468         | .012            |
| 4000         | 482         | .014            |
| 5000         | 792         | .310            |
| 5500         | 1010        | .436            |
| 5596         | 1053        | .430            |

\*\*\*\*\*  
 \* B & R SERVICE, INC. \*  
 \* FARMINGTON, NM 87401 \*  
 \* (505) 325-2393 \*  
 \*\*\*\*\*

COMPANY NAME... UNOCAL CORPORATION

DATE ..... 10/31/92

WELL I.D. .... RINCON 129M (DAK)

FIELD I.D. .... DAKOTA

RUN # ..... 1

ENGINEER .....

ZERO REFERENCE: G.L.

START DATE ... 10/10/92

START TIME ... 09:59:00

WELL STATUS... SHUT-IN

GAUGE INFO:

I.D. .... KPG-3 PRESSURE 175F

SERIAL #.... 23973

RANGE..... 7075 PSIA @ 175F

COMMENTS ..... BHP RECORDED @ 7533' G.L.

FILE # ..... 19

| NO. | TIME      |        | PRESSURE  |        |
|-----|-----------|--------|-----------|--------|
|     | DEFL (IN) | HRS    | DEFL (IN) | PSI    |
| 1   | 0.0000    | 0.000  | 0.2529    | 887.37 |
| 2   | 0.0095    | 0.985  | 0.2573    | 902.81 |
| 3   | 0.0192    | 1.990  | 0.2586    | 907.37 |
| 4   | 0.0290    | 3.006  | 0.2608    | 915.09 |
| 5   | 0.0384    | 3.981  | 0.2632    | 923.51 |
| 6   | 0.0482    | 4.997  | 0.2651    | 930.18 |
| 7   | 0.0582    | 6.033  | 0.2663    | 934.39 |
| 8   | 0.0678    | 7.029  | 0.2672    | 937.54 |
| 9   | 0.0772    | 8.003  | 0.2683    | 941.40 |
| 10  | 0.0872    | 9.040  | 0.2693    | 944.91 |
| 11  | 0.0966    | 10.014 | 0.2699    | 947.02 |
| 12  | 0.1060    | 10.989 | 0.2701    | 947.72 |
| 13  | 0.1156    | 11.984 | 0.2710    | 950.88 |
| 14  | 0.1255    | 13.010 | 0.2720    | 954.39 |
| 15  | 0.1354    | 14.036 | 0.2727    | 956.84 |
| 16  | 0.1450    | 15.032 | 0.2733    | 958.95 |
| 17  | 0.1544    | 16.006 | 0.2737    | 960.35 |
| 18  | 0.1639    | 16.991 | 0.2742    | 962.11 |
| 19  | 0.1739    | 18.028 | 0.2745    | 963.16 |
| 20  | 0.1834    | 19.012 | 0.2750    | 964.91 |
| 21  | 0.1931    | 20.018 | 0.2752    | 965.61 |
| 22  | 0.2027    | 21.013 | 0.2756    | 967.02 |
| 23  | 0.2124    | 22.019 | 0.2759    | 968.07 |
| 24  | 0.2222    | 23.035 | 0.2762    | 969.12 |
| 25  | 0.2317    | 24.020 | 0.2765    | 970.18 |
| 26  | 0.2909    | 30.157 | 0.2771    | 972.28 |
| 27  | 0.3476    | 36.035 | 0.2779    | 975.09 |
| 28  | 0.4053    | 42.016 | 0.2779    | 975.09 |
| 29  | 0.4652    | 48.226 | 0.2782    | 976.14 |
| 30  | 0.5223    | 54.145 | 0.2785    | 977.19 |
| 31  | 0.5809    | 60.220 | 0.2792    | 979.65 |
| 32  | 0.6384    | 66.181 | 0.2792    | 979.65 |
| 33  | 0.6948    | 72.028 | 0.2795    | 980.70 |

\*\*\*\*\*  
 \* B & R SERVICE, INC. \*  
 \*\*\*\*\*

Company : UNOCAL CORPORATION  
 Well I.D.: RINCON 129M (DAK)  
 Field I.D.: DAKOTA

Date: 10/31/72  
 Run#: 1  
 Page: 2

| NO. | TIME      |         | PRESSURE  |         |
|-----|-----------|---------|-----------|---------|
|     | DEFL (IN) | HRS     | DEFL (IN) | PSI     |
| 34  | 0.7526    | 78.020  | 0.2796    | 981.05  |
| 35  | 0.8118    | 84.157  | 0.2796    | 981.05  |
| 36  | 0.8682    | 90.003  | 0.2798    | 981.75  |
| 37  | 0.9277    | 96.172  | 0.2805    | 984.21  |
| 38  | 0.9849    | 102.101 | 0.2805    | 984.21  |
| 39  | 1.0420    | 108.021 | 0.2812    | 986.67  |
| 40  | 1.1025    | 114.292 | 0.2812    | 986.67  |
| 41  | 1.1576    | 120.005 | 0.2812    | 986.67  |
| 42  | 1.2177    | 126.235 | 0.2815    | 987.72  |
| 43  | 1.2762    | 132.299 | 0.2815    | 987.72  |
| 44  | 1.3310    | 137.980 | 0.2817    | 988.42  |
| 45  | 1.3892    | 144.014 | 0.2823    | 990.53  |
| 46  | 1.4475    | 150.057 | 0.2823    | 990.53  |
| 47  | 1.5051    | 156.029 | 0.2828    | 992.28  |
| 48  | 1.5618    | 161.907 | 0.2828    | 992.28  |
| 49  | 1.6208    | 168.023 | 0.2830    | 992.98  |
| 50  | 1.6794    | 174.098 | 0.2830    | 992.98  |
| 51  | 1.7373    | 180.100 | 0.2832    | 993.68  |
| 52  | 1.7956    | 186.144 | 0.2832    | 993.68  |
| 53  | 1.8519    | 191.980 | 0.2834    | 994.39  |
| 54  | 1.9121    | 198.221 | 0.2834    | 994.39  |
| 55  | 1.9691    | 204.130 | 0.2835    | 994.74  |
| 56  | 2.0275    | 210.184 | 0.2835    | 994.74  |
| 57  | 2.0844    | 216.083 | 0.2838    | 995.79  |
| 58  | 2.1415    | 222.002 | 0.2840    | 996.49  |
| 59  | 2.2016    | 228.233 | 0.2848    | 999.30  |
| 60  | 2.2587    | 234.152 | 0.2850    | 1000.00 |
| 61  | 2.3162    | 240.113 | 0.2850    | 1000.00 |
| 62  | 2.3735    | 246.053 | 0.2850    | 1000.00 |
| 63  | 2.4301    | 251.920 | 0.2850    | 1000.00 |
| 64  | 2.4905    | 258.182 | 0.2850    | 1000.00 |
| 65  | 2.5471    | 264.049 | 0.2850    | 1000.00 |
| 66  | 2.6046    | 270.010 | 0.2855    | 1001.77 |
| 67  | 2.6629    | 276.054 | 0.2855    | 1001.77 |
| 68  | 2.7206    | 282.036 | 0.2858    | 1002.84 |
| 69  | 2.7783    | 288.017 | 0.2858    | 1002.84 |
| 70  | 2.8361    | 294.009 | 0.2862    | 1004.26 |
| 71  | 2.8946    | 300.073 | 0.2862    | 1004.26 |
| 72  | 2.9518    | 306.003 | 0.2865    | 1005.32 |
| 73  | 3.0108    | 312.120 | 0.2865    | 1005.32 |
| 74  | 3.0685    | 318.101 | 0.2867    | 1006.03 |
| 75  | 3.1260    | 324.062 | 0.2869    | 1006.74 |
| 76  | 3.1838    | 330.054 | 0.2871    | 1007.45 |
| 77  | 3.2417    | 336.056 | 0.2871    | 1007.45 |
| 78  | 3.2651    | 338.482 | 0.2874    | 1008.51 |

\*\*\*\*\* end data \*\*\*\*\*



RINCON UNIT NO. 129M

After a 7 day SI period:

$$\text{Mesaverde BHP} = 1053 \text{ psi @ } 5596'$$

$$\text{Dakota BHP} = 993 \text{ psi @ } 7533'$$

$$\text{Gas Gradient} = \frac{(0.01875)(0.65)(1500)}{(0.88)(655)} = 0.03 \text{ psi/ft}$$

Adjusting to a common datum of 5596':

$$\text{Mesaverde BHP} = 1053 \text{ psi}$$

$$\text{Dakota BHP} = 993 - [(0.03)(7533 - 5596)] = 935 \text{ psi}$$

Therefore the reservoir pressures fall within the 50% requirement.

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1115 FARMINGTON AVENUE - FARMINGTON, NM 87401

(505) 325-6622

ANALYSIS NO. UN020025

WELL/LEASE INFORMATION

COMPANY: UNOCAL CORPORATION

WELL NAME: RINCON 129M

LINE PRESSURE: 50 PSIG

LOCATION:

SAMPLE TEMP.: 72 DEG.F

COUNTY: RIO ARRIBA, NM

WELL FLOWING: YES

FORMATION: MESAVERDE

DATE SAMPLED: 10/16/92

SMPL SRC:

SAMPLED BY: KIVA

REMARKS: TAKEN AT TEST UNIT.

ANALYSIS

| COMPONENT                            | MOLE%   | GPM    |
|--------------------------------------|---------|--------|
| NITROGEN                             | 0.520   | 0.0000 |
| CO2                                  | 0.588   | 0.0000 |
| METHANE                              | 78.797  | 0.0000 |
| ETHANE                               | 11.284  | 3.0185 |
| PROPANE                              | 5.585   | 1.5392 |
| I-BUTANE                             | 0.838   | 0.2741 |
| N-BUTANE                             | 1.364   | 0.4301 |
| I-PENTANE                            | 0.423   | 0.1548 |
| N-PENTANE                            | 0.295   | 0.1068 |
| HEXANE+                              | 0.306   | 0.1335 |
| TOTAL                                | 100.000 | 5.6570 |
| COMPRESSIBILITY FACTOR               | (1/Z)   | 1.0036 |
| BTU/CU.FT. (DRY) CORRECTED FOR (1/Z) |         | 1259.6 |
| BTU/CU.FT. (WET) CORRECTED FOR (1/Z) |         | 1237.7 |
| REAL SPECIFIC GRAVITY                |         | 0.7268 |

ANALYSIS RUN AT 14.73 PSIA & 60 DEGREES F

CYLINDER PRESSURE: 48 PSIG

DATE RUN: 10/19/92

ANALYSIS RUN BY: CHELLE DURBIN



1115 FARMINGTON AVENUE - FARMINGTON, NM 87401

(505) 325-6622

ANALYSIS NO. UN020024

WELL/LEASE INFORMATION

COMPANY: UNOCAL CORPORATION

WELL NAME: RINCON 129M

LINE PRESSURE: 249 PSIG

LOCATION:

SAMPLE TEMP.: 68 DEG.F

COUNTY: RINCON/RIO ARRIBA, NM

WELL FLOWING: YES

FORMATION: DAKOTA

DATE SAMPLED: 10/10/92

SMPL SRC:

SAMPLED BY: KIVA

REMARKS:

ANALYSIS

| COMPONENT                            | MOLE%   | GPM    |
|--------------------------------------|---------|--------|
| NITROGEN                             | 0.211   | 0.0000 |
| CO2                                  | 1.310   | 0.0000 |
| METHANE                              | 88.063  | 0.0000 |
| ETHANE                               | 7.576   | 2.0266 |
| PROPANE                              | 1.721   | 0.4743 |
| I-BUTANE                             | 0.328   | 0.1073 |
| N-BUTANE                             | 0.366   | 0.1154 |
| I-PENTANE                            | 0.166   | 0.0607 |
| N-PENTANE                            | 0.103   | 0.0373 |
| HEXANE+                              | 0.156   | 0.0680 |
| TOTAL                                | 100.000 | 2.8897 |
| COMPRESSIBILITY FACTOR               | (1/Z)   | 1.0027 |
| BTU/CU.FT. (DRY) CORRECTED FOR (1/Z) |         | 1113.7 |
| BTU/CU.FT. (WET) CORRECTED FOR (1/Z) |         | 1094.3 |
| REAL SPECIFIC GRAVITY                |         | 0.6417 |

ANALYSIS RUN AT 14.73 PSIA & 60 DEGREES F

CYLINDER PRESSURE: 232 PSIG

DATE RUN: 10/12/92

ANALYSIS RUN BY: CHELLE DURBIN

RINCON UNIT NO. 129M  
ALLOCATION FORMULA  
(BASED ON C-116)

|                        |                |                 |
|------------------------|----------------|-----------------|
| <u>GAS PRODUCTION:</u> | Mesaverde Rate | 110 MCFD        |
|                        | Dakota Rate    | <u>290</u> MCFD |
|                        | Total Rate     | <u>400</u> MCFD |

|            |           |     |
|------------|-----------|-----|
| Therefore, | Mesaverde | 27% |
|            | Dakota    | 73% |

|                        |                |               |
|------------------------|----------------|---------------|
| <u>OIL PRODUCTION:</u> | Mesaverde Rate | 2 BOPD        |
|                        | Dakota Rate    | <u>0</u> BOPD |
|                        | Total Rate     | <u>2</u> BOPD |

|            |           |      |
|------------|-----------|------|
| Therefore, | Mesaverde | 100% |
|            | Dakota    | 0%   |

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Unocal Oil & Gas Division  
Unocal Corporation  
3300 North Butler Avenue  
Suite 200  
Farmington, New Mexico 87401  
Telephone (505) 326-7600  
Fax: (505) 326-6145



November 19, 1992

Farmington District

United States Department of the Interior  
Bureau of Land Management  
1235 La Plata Highway  
Farmington, New Mexico 87401

Dear Sirs:

Union Oil Company of California (UNOCAL) has requested permission from the New Mexico Oil Conservation Division to downhole commingle production from the Blanco Mesaverde and Basin Dakota formations in the following well:

Rincon Unit No. 129M  
1035' FSL, 805' FEL  
Section 29, T27N, R6W  
Rio Arriba County, New Mexico

If you have any objections to this proposal, please notify the NMOCD within twenty (20) days. If you have any questions about this application, please contact Dana Delventhal at (505)326-7600.

Sincerely,

Union Oil Company of California  
dba UNOCAL



William L. Irwin  
District Petroleum Engineer

WLI/DLD/df

Unocal Oil & Gas Division  
Unocal Corporation  
3300 North Butler Avenue  
Suite 200  
Farmington, New Mexico 87401  
Telephone (505) 326-7600  
Fax: (505) 326-6145



November 19, 1992

Farmington District

Caulkins Oil Company  
310 North First  
Bloomfield, New Mexico 87413

Dear Sirs:

Union Oil Company of California (UNOCAL) has requested permission from the New Mexico Oil Conservation Division to downhole commingle production from the Blanco Mesaverde and Basin Dakota formations in the following well:

Rincon Unit No. 129M  
1035' FSL, 805' FEL  
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Rio Arriba County, New Mexico

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Sincerely,

Union Oil Company of California  
dba UNOCAL



William L. Irwin  
District Petroleum Engineer

WLI/DLD/df