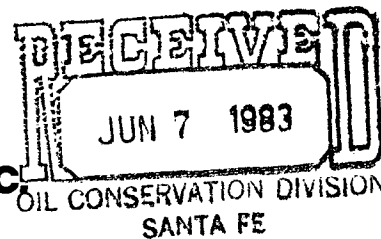


# Mobil Producing Texas & New Mexico Inc



May 27, 1983

NINE GREENWAY PLAZA—SUITE 2700  
HOUSTON, TEXAS 77046

State of New Mexico  
Energy and Minerals Department  
Oil Conservation Division  
P.O. Box 2088  
Santa Fe, New Mexico 87501

Attention Mr. Joe D. Ramey

7.01  
MOBIL PRODUCING TX. & N.M. INC.  
DOWN-HOLE COMMINGLE  
MAUDE RICKMAN COM. WELL #1  
CARLSBAD (ATOKA/MORROW), SOUTH  
EDDY COUNTY, NEW MEXICO

Gentlemen:

Mobil Producing TX. & N.M. Inc. (MPTM) requests authorization to down-hole commingle the Atoka (11,243'-11,424') and Morrow (11,658'-12,040') gas zones in this wellbore. We fulfill the requirements outlined by NMOCD Rule 303 and deem it necessary to commingle these zones to preclude waste. We will show these characteristics of the two gas zones in this letter. 1. There is a small difference between the bottom hole pressures; thus, no crossflow should occur. 2. The produced fluids are compatible with each other. 3. The ownership of the two zones is common. For accounting purposes on the gas proration schedule, we will account for the commingled gas production in the Morrow gas zone.

We will submit the following information in support of this application.

1. Plat of area
2. Productivity tests on Division Form C-116
3. Production decline curve for both zones
4. Measured bottom hole pressure of each zone
5. Description of the fluid characteristics of each zone
6. Computation showing value of commingled zones

**Mobil**

NMOCD

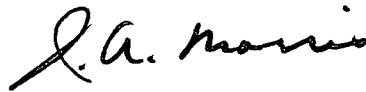
May 27, 1983

Page 2

7. Formula for the allocation of production
8. Wellbore sketch
9. List of offset operators
10. Affidavit stating common ownership of these zones

Should you have any questions concerning this permit, please contact us at 713/871-5351.

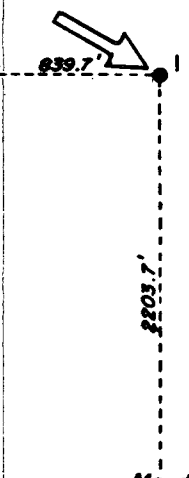
Yours truly,

A handwritten signature in cursive script, appearing to read "J.A. Morris".

J.A. Morris  
Regulatory Engineering Supervisor

SDMarino/ec  
Attachments

cc: District 2, Director

|              |                                                                                    |             |                                 |               |
|--------------|------------------------------------------------------------------------------------|-------------|---------------------------------|---------------|
| Not Leased   | Read & Stevens                                                                     | Retamco     | Read & Stevens                  | El Paso Expl. |
| M. Lopez     | Lovlace                                                                            | I.V. Croley | W.A. Weems et al                | G.C. O'Conner |
| Mobil        | R 27 E<br>Mobil                                                                    |             | Alpha Twenty-One Production Co. | Not Leased    |
| T<br>23<br>S |  |             | I.V. Croley                     | M.L. Tidwell  |
|              |                                                                                    |             | Not Leased                      |               |
|              |                                                                                    |             | Missouri & N.W. Land Com.       |               |
| Mobil        |                                                                                    |             | Anschutz, et al                 |               |
|              |                                                                                    |             | I.V. Croley                     | L.I. Lewis    |
| Binder Com.  | Maude Rickman Com.                                                                 |             | Mobil                           | D.A. Blenden  |
|              |                                                                                    |             | Husky Oil                       |               |
| Mesa         | Alpha Twenty-One Production Co.                                                    |             | M.L. Tidwell                    |               |
|              | Miller Com.                                                                        |             |                                 |               |



Reserve \_\_\_\_\_ Permit depth \_\_\_\_\_

Special Instructions \_\_\_\_\_ Acreage dedicated to well \_\_\_\_\_

Date work is commenced \_\_\_\_\_ 19 \_\_\_\_\_ Supt. \_\_\_\_\_

Location approved by \_\_\_\_\_ Plat by \_\_\_\_\_ Surveyed by \_\_\_\_\_

THE STATE OF TEXAS  
COUNTY OF HARRIS

I hereby certify that this plat truly represents conditions as they actually exist on this lease; that said plat which is drawn to the scale indicated hereon, is to the best of my knowledge true and correct; that it accurately shows said lease with all wells on same; that number and locations of said wells are as indicated hereon; and that this plat correctly reflects all pertinent and required data.

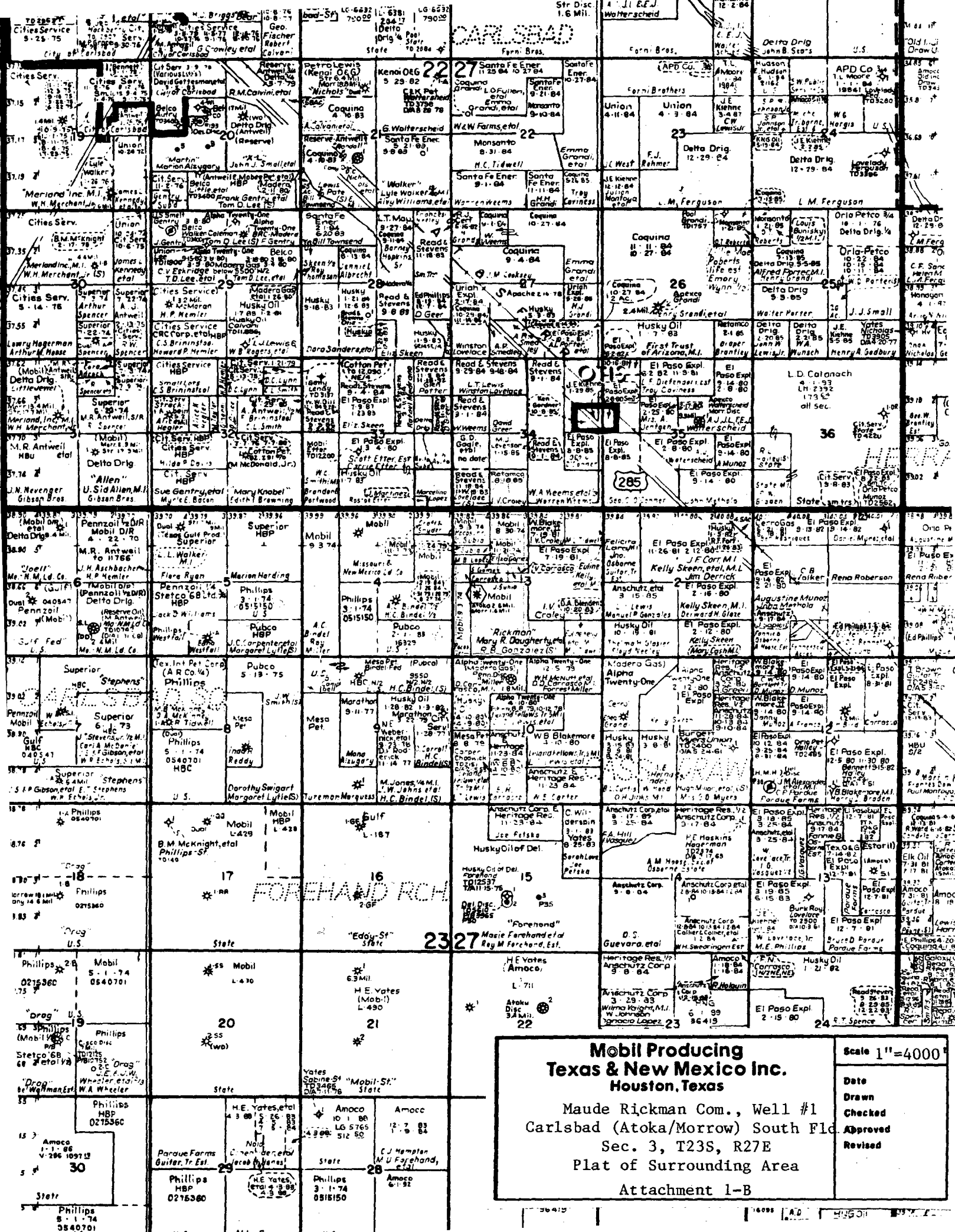
*Ad Bond*

## Mobil Producing Texas & New Mexico Inc. Houston, Texas

LEASE Maude Rickman Com.  
WELL NO. 1 DATE May 27, 19 83  
DIVISION \_\_\_\_\_ LEASE NO. \_\_\_\_\_  
TOTAL ACRES IN LEASE 314.80 ACRES COVERED BY PLAT 314.80  
DESCRIPTION West 1/2 Sec. 3 Less 5.2 Ac.  
T 23 S R 27 E

EDDY COUNTY, NEW MEXICO

|                  |              |                      |
|------------------|--------------|----------------------|
| DRAWN RAS        | DATE 5-26-83 | FIELD SOUTH CARLSBAD |
| SCALE 1" = 1000' | FILE NO. 87  |                      |



GAS-OIL RATIO TESTS

| Operator         |          | MOBIL PRODUCING TX. & N. M. INC                     |   |     |     | Pool               |            | South Carlsbad                     |                  |                                     |                   | County                                      |            | Eddy                        |  |
|------------------|----------|-----------------------------------------------------|---|-----|-----|--------------------|------------|------------------------------------|------------------|-------------------------------------|-------------------|---------------------------------------------|------------|-----------------------------|--|
| Address          |          | 9 GREENWAY PLAZA SUITE 2700<br>HOUSTON, TEXAS 77046 |   |     |     | Type of Test - (X) |            | Scheduled <input type="checkbox"/> |                  | Completion <input type="checkbox"/> |                   | Special <input checked="" 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 BBLs.       | CRAV. OIL BBLs.                             | GAS M.C.F. |                             |  |
| Made Rickman Com | 1-4      | 2                                                   | 3 | 235 | 27E | 3-19-83            | 1"         | 410                                | GAS well         | 24                                  | 0                 | 0                                           | 71         |                             |  |

Attachment 2-A

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.

Well 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.

*(Signature)*

Production Supervisor IV

3-29-83

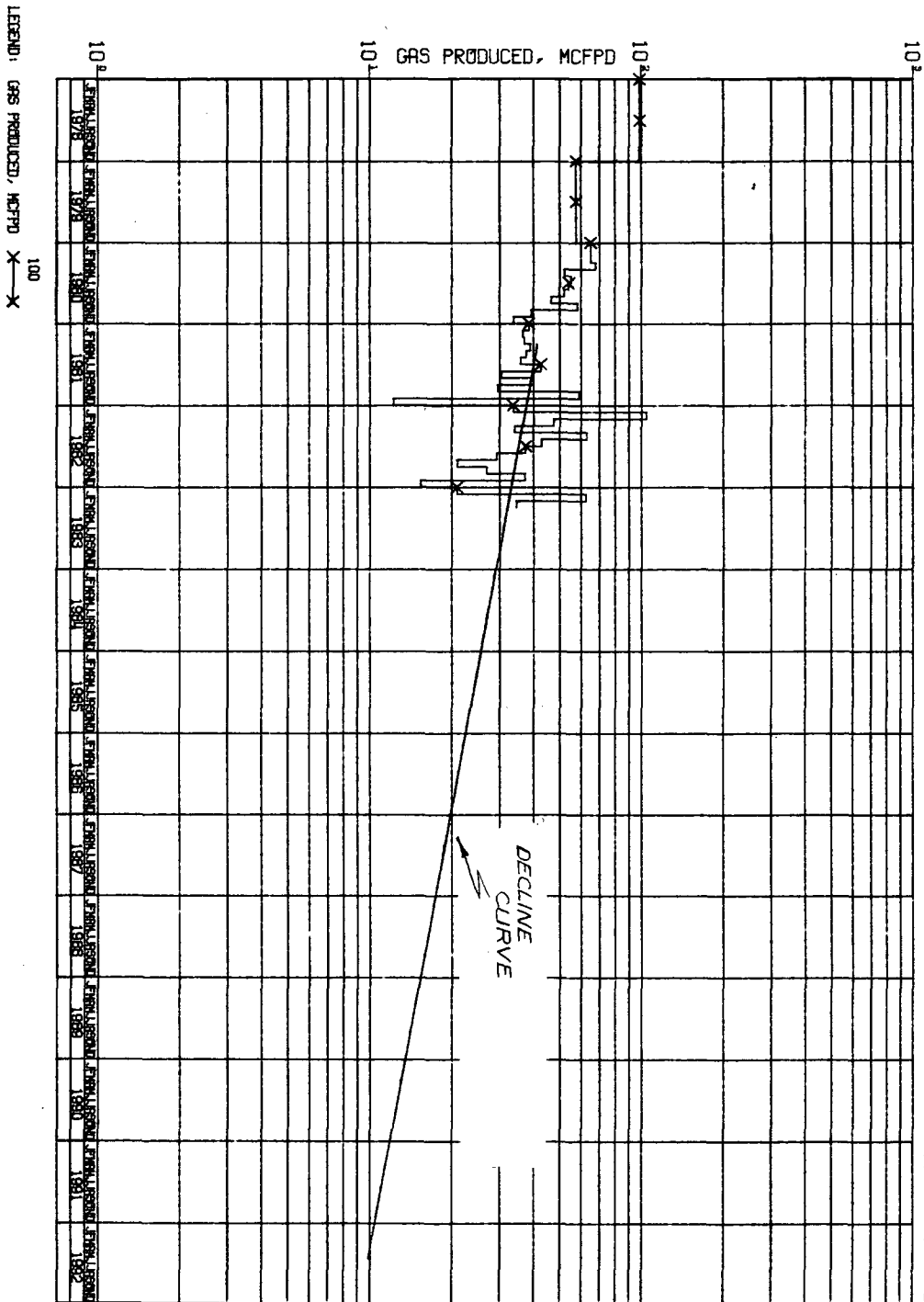
(Title)



MIDLAND PRODUCING AREA  
 PROJECT NO. 100 PREPARED BY JIM  
 EFFECTIVE DATE MARCH 1983  
 DATE PLOTTED 13 MAY 83

# PRODUCTION CURVES MAUDE RICKMAN RTOKA

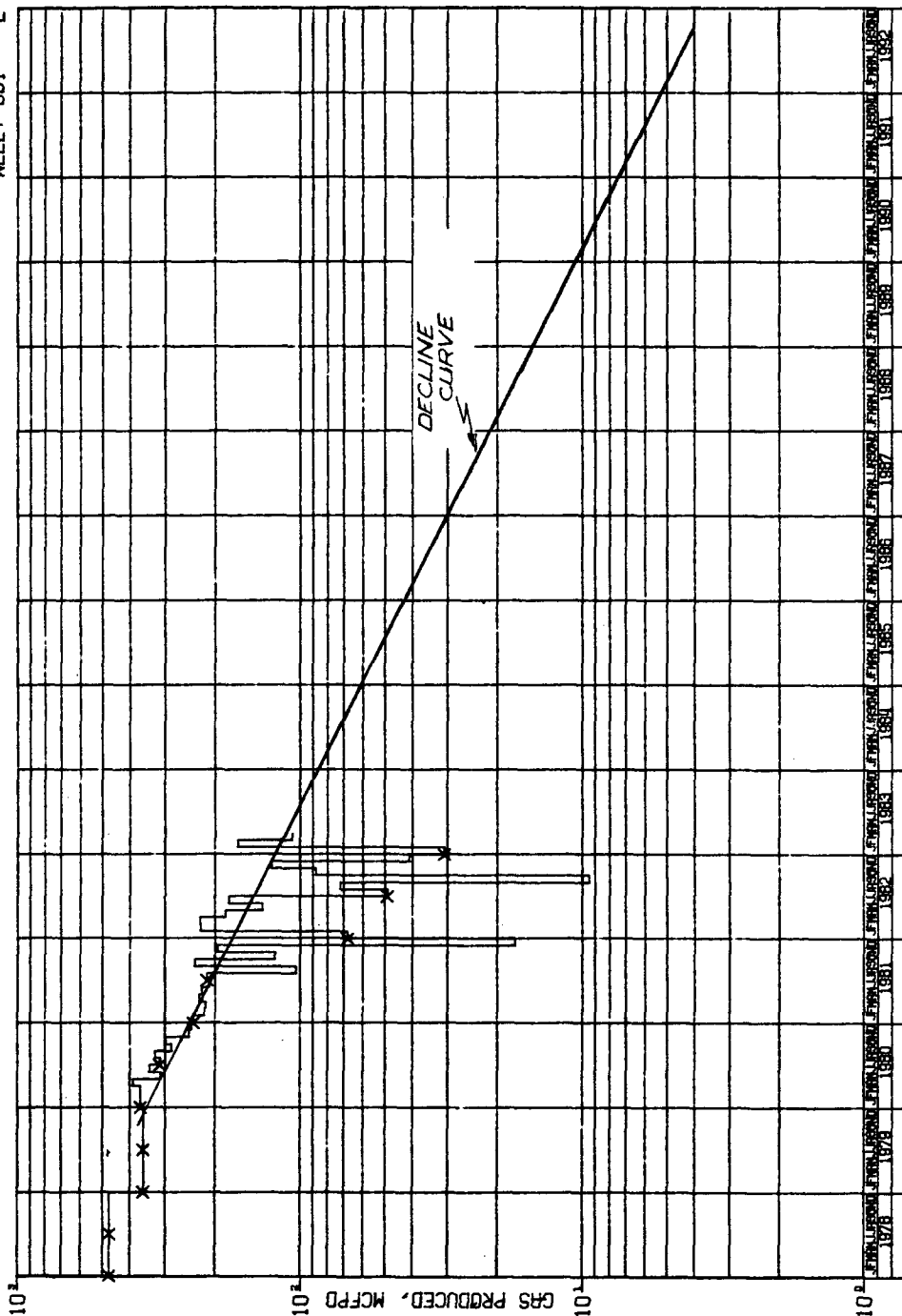
FIELD/ZONE: SOUTH CARLSBAD RTOKA  
 FIELD: 3110  
 ZONE: 300  
 LEASE: 56360 MAUDE RICKMAN COM  
 SUB: 0  
 WELL: 001 U



FIELD/ZONE: SOUTH CARLSBAD MORROW  
 FIELD: 3110  
 ZONE: 400  
 LEASE: 56360 MAUDE RICKMAN COM  
 SUB: 0  
 WELL: 001 L

# PRODUCTION CURVES MAUDE RICKMAN MORROW

MIDLAND PRODUCING AREA  
 PROJECT NO. 200 PREPARED BY JIM  
 EFFECTIVE DATE MARCH 1983  
 DATE PLOTTED 13 MAY 83



LEGEND: GAS PRODUCED, MCFPD X—X



# JARREL SERVICES, INC.

POST OFFICE BOX 1654

PHONES 505 393-5396 — 393-8274

HOBBS, NEW MEXICO 88240

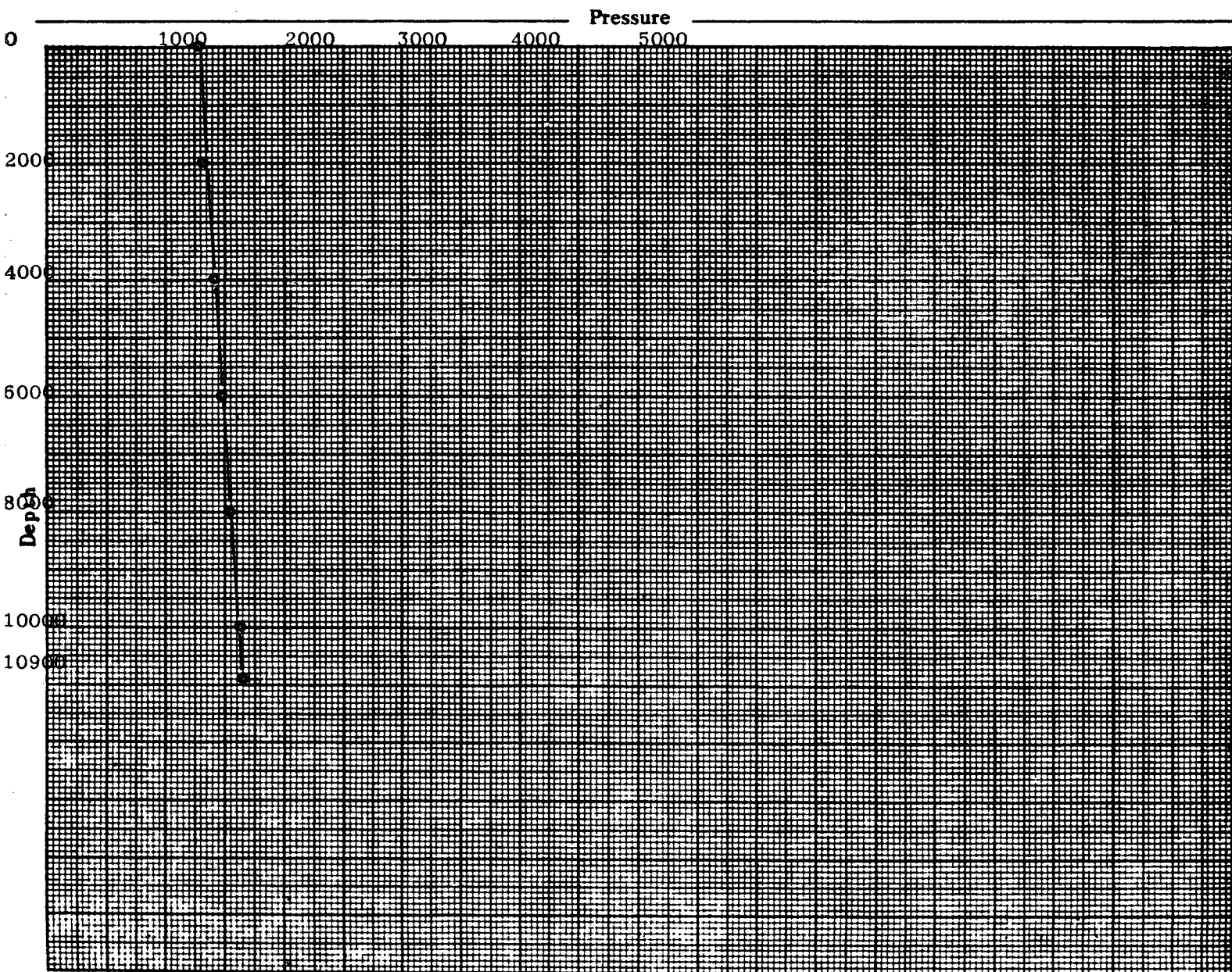
OPERATOR Mobil Producing Texas & New Mexico Inc. BOTTOM HOLE PRESSURE RECORD

FIELD South Carlsbad  
 FORMATION Atoka  
 LEASE Maude Rickman Comm WELL #1  
 COUNTY Eddy STATE New Mexico  
 DATE 3/17/83 TIME 1:30 PM  
 Status Shut in  
 Test Depth 10900'  
 Time S. I. 24.0 hrs. Last test date -  
 Tub Pres. - BHP last test -  
 Cas. Pres. Dual BHP change -  
 Elev. 3113'GL Fluid top None  
 Datum (-8221)\*\* Water top None  
 Temp. @ 176 F Run by JSI #13  
 Cal. No. A24513N Chart No. 2

| Depth         | Pressure  | Gradient |
|---------------|-----------|----------|
| 0             | 1296      | -        |
| 2000          | 1338      | .021     |
| 4000          | 1402      | .032     |
| 6000          | 1470      | .034     |
| 8000          | 1540      | .035     |
| 10000         | 1612      | .036     |
| 10900         | 1645      | .037     |
| 11334 (-8221) | 1661 * ** | (.037)   |

\* EXTRAPLOATED PRESSURE

\*\* MIDPOINT OF CASING PERFORATIONS



OIL CONSERVATION DIVISION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

RESERVOIR PRESSURE REPORT

|                                                     |                     |                           |             |                         |                   |
|-----------------------------------------------------|---------------------|---------------------------|-------------|-------------------------|-------------------|
| Operator<br>Mobil Producing Texas & New Mexico Inc. |                     | County<br>South Carlsbad  |             | Date<br>March 18, 1983  |                   |
| Address<br>P.O. Box 1800<br>Hobbs, New Mexico 88240 |                     | Oil Gradient<br>— psi/ft. |             | Datum Plane<br>(-8736)* |                   |
| WELL NO.                                            | LOCATION<br>U S T N | ELEV.<br>OR<br>GAS (c)    | DATE TESTED | BORE TEST DATA          |                   |
|                                                     |                     |                           |             | TEST DEPTH              | OB. SERVED PRESS. |
| 1                                                   | L 3 23 37 S W GL    | 3113'                     | G 3/17/83   | 24                      | 1271              |
|                                                     |                     |                           |             |                         |                   |
| 1672                                                | :038                |                           |             |                         |                   |
|                                                     |                     |                           |             |                         |                   |

All depths plus or minus sea level; all pressures psi; Bomb shall be calibrated frequently enough against a dead weight tester to ensure an accuracy of one per cent; gas gravity shall be determined by analysis; liquid level shall be feet above datum plane. SEE RULE 302.

\* Well shall be produced at least 24 hours prior to shutting in for sonic test.

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

JARREL SERVICES INC.

*Joe A. Chana*  
(Signature)

Agent

(Title)

March 18, 1983

(Date)

# JARREL SERVICES, INC.

POST OFFICE BOX 1654

PHONES 505 393-5396 — 393-8274

HOBBS, NEW MEXICO 88240

OPERATOR Mobil Producing Texas & New Mexico Inc.

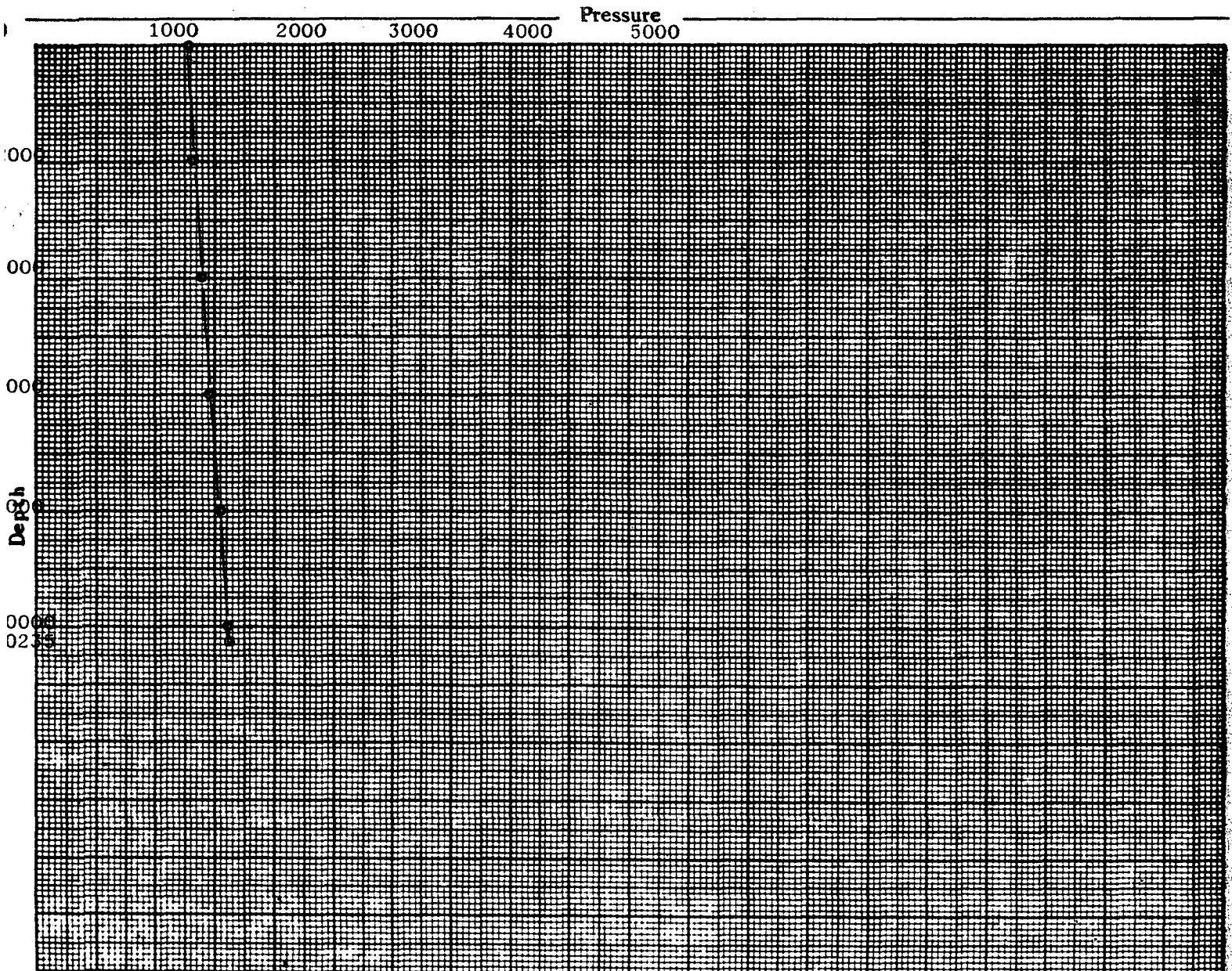
## BOTTOM HOLE PRESSURE RECORD

FIELD South Carlsbad  
 FORMATION Morrow  
 LEASE Maude Rickman Comm WELL #1  
 COUNTY Eddy STATE New Mexico  
 DATE 3/17/83 TIME 11:30 AM  
 Status Shut in  
 Test Depth 10235'  
 Time S. I. 24.0 hrs. Last test date -  
 Tub Pres. 1271 BHP last test -  
 Cas. Pres. Dual BHP change -  
 Elev. 3113' GL Fluid top None  
 Datum (-8736)\*\* Water top None  
 Temp. @ 188 F Run by JSI #13  
 Cal. No. A24513N Chart No. 1

| Depth         | Pressure  | Gradient |
|---------------|-----------|----------|
| 0             | 1271      | -        |
| 2000          | 1317      | .023     |
| 4000          | 1386      | .034     |
| 6000          | 1456      | .035     |
| 8000          | 1528      | .036     |
| 10000         | 1602      | .037     |
| 10235         | 1611      | .038     |
| 11849 (-8736) | 1672 * ** | (.038)   |

\* EXTRAPOLATED PRESSURE

\*\* MIDPOINT OF CASING PERFORATIONS



Mobil Producing TX. & N.M. Inc.  
Maude Rickman Com., Well #1  
Carlsbad (Atoka/Morrow) South Pool  
Sec. 3, T23S, R27E

The attached water analysis indicates there is an insignificant difference between the production water of these two zones. Therefore, the production water from these zones are compatible and could be commingled down-hole without the result of precipitating or damaging the formation.

UNICHEM INTERNATIONAL

601 NORTH LEECH

P.O. BOX 1499

HOBBS, NEW MEXICO 88240

COMPANY : MOBIL PRODUCING TEXAS AND NEW MEXICO  
DATE : 3-16-83  
FIELD LEASESWELL : ATOKA ZONE MAUDE RICKMON #1  
SAMPLING POINT :  
DATE SAMPLED : 3-15-83

SPECIFIC GRAVITY = 1.049  
TOTAL DISSOLVED SOLIDS = 72930  
PH = 6.31

|                  |            | ME/L    | MG/L   |
|------------------|------------|---------|--------|
| CATIONS          |            |         |        |
| CALCIUM          | (CA)+2     | 246.    | 4943.  |
| MAGNESIUM        | (MG)+2     | 103.    | 1256.  |
| SODIUM           | (NA).CALC. | 926.    | 21308. |
| ANIONS           |            |         |        |
| BICARBONATE      | (HCO3)-1   | 4.2     | 256.   |
| CARBONATE        | (CO3)-2    | 0       | 0      |
| HYDROXIDE        | (OH)-1     | 0       | 0      |
| SULFATE          | (SO4)-2    | 3.6     | 176.   |
| CHLORIDES        | (CL)-1     | 1269    | 44989. |
| DISSOLVED GASES  |            |         |        |
| CARBON DIOXIDE   | (CO2)      | NOT RUN |        |
| HYDROGEN SULFIDE | (H2S)      | NOT RUN |        |
| OXYGEN           | (O2)       | NOT RUN |        |
| IRON(TOTAL)      | (FE)       |         | 7580   |
| BARIUM           | (BA)+2     | 10      | 7.1    |
| MANGANESE        | (MN)       | NOT RUN |        |

| SCALING INDEX             | TEMP     |
|---------------------------|----------|
|                           | 30C      |
|                           | 86F      |
| CARBONATE INDEX           | -28      |
| CALCIUM CARBONATE SCALING | UNLIKELY |
| SULFATE INDEX             | -30      |
| CALCIUM SULFATE SCALING   | UNLIKELY |

## API WATER ANALYSIS REPORT FORM

|                                                           |  |                           |  |                                 |  |
|-----------------------------------------------------------|--|---------------------------|--|---------------------------------|--|
| Company<br><b>MPTM</b>                                    |  | Sample No.                |  | Date Sampled<br><b>3-15-83</b>  |  |
| Field<br><b>CARLSEAD (ATOKA), SOUTH</b>                   |  | Legal Description         |  | County or Parish<br><b>EDDY</b> |  |
| Lease or Unit<br><b>Maude Rickman</b>                     |  | Well<br><b>1</b>          |  | Depth                           |  |
| Type of Water (Produced, Supply, etc.)<br><b>Produced</b> |  | Formation<br><b>ATOKA</b> |  | Water, B/D                      |  |
| Sampling Point                                            |  | Sampled By                |  |                                 |  |

## DISSOLVED SOLIDS

| CATIONS            | mg/l          | me/l        |
|--------------------|---------------|-------------|
| Sodium, Na (calc.) | <u>21,308</u> | <u>92.6</u> |
| Calcium, Ca        | <u>494.3</u>  | <u>24.6</u> |
| Magnesium, Mg      | <u>12.56</u>  | <u>10.3</u> |
| Barium, Ba         | <u>7.1</u>    | <u>0.1</u>  |
|                    |               |             |
|                    |               |             |

## ANIONS

|                               |               |              |
|-------------------------------|---------------|--------------|
| Chloride, Cl                  | <u>44,989</u> | <u>126.9</u> |
| Sulfate, SO <sub>4</sub>      | <u>176</u>    | <u>3.6</u>   |
| Carbonate, CO <sub>3</sub>    |               |              |
| Bicarbonate, HCO <sub>3</sub> | <u>256</u>    | <u>4.2</u>   |
|                               |               |              |
|                               |               |              |

Total Dissolved Solids (calc.)

72,930

Iron, Fe (total)

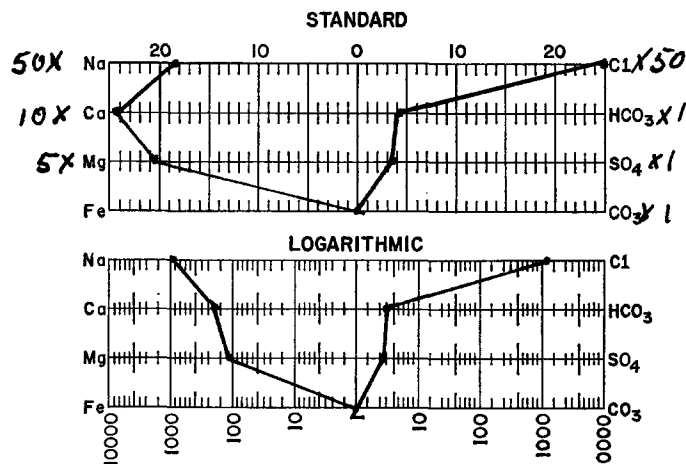
7580(?)Sulfide, as H<sub>2</sub>S

REMARKS &amp; RECOMMENDATIONS:

## OTHER PROPERTIES

|                                   |              |
|-----------------------------------|--------------|
| pH                                | <u>6.3</u>   |
| Specific Gravity, 60/60 F.        | <u>1.049</u> |
| Resistivity (ohm-meters) _____ F. |              |
|                                   |              |
|                                   |              |

## WATER PATTERNS — me/l



UNICHEM INTERNATIONAL

601 NORTH LEECH

P.O. BOX 1499

HOBBES, NEW MEXICO 88240

COMPANY : MOBIL PRODUCING TEXAS AND NEW MEXICO  
DATE : 3-17-83  
FIELD LEASE & WELL : Morrow ZONE MAUDE RICKMON #1  
SAMPLING POINT :  
DATE SAMPLED : 3-15-83

SPECIFIC GRAVITY = 1.047  
TOTAL DISSOLVED SOLIDS = 69432  
PH = 5.65

|                  |            | ME/L    | MG/L   |
|------------------|------------|---------|--------|
| CATIONS          |            |         |        |
| CALCIUM          | (CA)+2     | 266.    | 5344   |
| MAGNESIUM        | (MG)+2     | 103.    | 1256.  |
| SODIUM           | (NA) CALC. | 848.    | 19512. |
| ANIONS           |            |         |        |
| BICARBONATE      | (HCO3)-1   | 2.6     | 158.   |
| CARBONATE        | (CO3)-2    | 0       | 0      |
| HYDROXIDE        | (OH)-1     | 0       | 0      |
| SULFATE          | (SO4)-2    | 3.5     | 170.   |
| CHLORIDES        | (CL)-1     | 1212.   | 42990. |
| DISSOLVED GASES  |            |         |        |
| CARBON DIOXIDE   | (CO2)      | NOT RUN |        |
| HYDROGEN SULFIDE | (H2S)      | NOT RUN |        |
| OXYGEN           | (O2)       | NOT RUN |        |
| IRON(TOTAL)      | (FE)       |         | 202    |
| BARIUM           | (BA)+2     | .07     | 4.9    |
| MANGANESE        | (MN)       | NOT RUN |        |

| SCALING INDEX             | TEMP     |
|---------------------------|----------|
|                           | 30C      |
|                           | 86F      |
| CARBONATE INDEX           | -1.1     |
| CALCIUM CARBONATE SCALING | UNLIKELY |
| SULFATE INDEX             | -27.     |
| CALCIUM SULFATE SCALING   | UNLIKELY |

## API WATER ANALYSIS REPORT FORM

|                                                           |  |                   |  |                                 |  |
|-----------------------------------------------------------|--|-------------------|--|---------------------------------|--|
| Company<br><b>MPTM</b>                                    |  | Sample No.        |  | Date Sampled<br><b>3-15-83</b>  |  |
| Field<br><b>CARLSBAD (MORROW) SOUTH</b>                   |  | Legal Description |  | County or Parish<br><b>EDDY</b> |  |
| Lease or Unit<br><b>Maude Rickmon</b>                     |  | Well<br><b>1</b>  |  | Depth                           |  |
| Type of Water (Produced, Supply, etc.)<br><b>Produced</b> |  | Sampling Point    |  | Formation<br><b>MORROW</b>      |  |
|                                                           |  |                   |  | Water, B/D                      |  |
|                                                           |  |                   |  | Sampled By                      |  |

## DISSOLVED SOLIDS

## CATIONS

|                    | mg/l         | me/l        |
|--------------------|--------------|-------------|
| Sodium, Na (calc.) | <u>19512</u> | <u>848</u>  |
| Calcium, Ca        | <u>5344</u>  | <u>266</u>  |
| Magnesium, Mg      | <u>1256</u>  | <u>103</u>  |
| Barium, Ba         | <u>4.9</u>   | <u>0.07</u> |
|                    |              |             |
|                    |              |             |

## ANIONS

|                               |              |             |
|-------------------------------|--------------|-------------|
| Chloride, Cl                  | <u>42990</u> | <u>1212</u> |
| Sulfate, SO <sub>4</sub>      | <u>170</u>   | <u>3.5</u>  |
| Carbonate, CO <sub>3</sub>    |              |             |
| Bicarbonate, HCO <sub>3</sub> | <u>158</u>   | <u>2.6</u>  |
|                               |              |             |
|                               |              |             |

Total Dissolved Solids (calc.)

69,432

Iron, Fe (total)

202 (?)Sulfide, as H<sub>2</sub>S

## OTHER PROPERTIES

pH

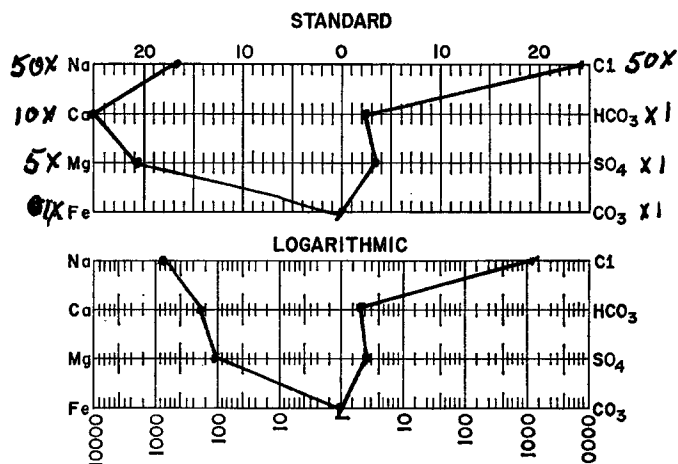
5.65

Specific Gravity, 60/60 F.

1.047

Resistivity (ohm-meters) \_\_\_\_\_ F.

## WATER PATTERNS — me/l



REMARKS &amp; RECOMMENDATIONS:

Mobil Producing TX. & N.M. Inc.  
Maude Rickman Com., Well #1  
Carlsbad (Atoka/Morrow) South Pool  
Sec. 3, T23S, R37E

These computations show that the value of the commingled production will not be less than the sum of the values of the Atoka and Morrow gas zones.

I. Value of Individual Gas Zones

|                               | <u>Atoka</u>  | <u>Morrow</u> |
|-------------------------------|---------------|---------------|
| BTU CORRECTION FACTOR         | 1.012 BTU/MCF | 1.023 BTU/MCF |
| VALUE OF GAS                  | \$3.407 MCF   | \$3.444 MCF   |
| TEST QUANTITY OF GAS PRODUCED | 71 MCF/DAY    | 195 MCF/DAY   |
| VALUE OF GAS PRODUCED         | \$241.90 DAY  | \$671.67 DAY  |
| SUM OF GAS ZONES/DAY          | 266 MCF/DAY   |               |
| SUM VALUE OF GAS ZONES/DAY    | \$954. DAY    |               |

II. Value of Commingled Gas

|                                                             |               |
|-------------------------------------------------------------|---------------|
| BASE PRICE OF GAS                                           | \$3.367 MCF   |
| WEIGHTED AVERAGE BTU CORRECTION FACTOR<br>OF COMMINGLED GAS |               |
| PERCENT ATOKA GAS PRODUCTION                                | 35%           |
| PERCENT MORROW GAS PRODUCTION                               | 65%           |
| ATOKA 35% x 1.012 BTU/MCF =                                 | .354          |
| MORROW 65% x 1.023 BTU/MCF =                                | .665          |
|                                                             | 1.019 BTU/MCF |
| VALUE OF COMMINGLED GAS                                     | \$3.432 MCF   |
| MINIMUM EXPECTED COMMINGLED GAS PRODUCED                    | 300 MCF/DAY   |
| VALUE OF COMMINGLED GAS PRODUCED                            | \$1030 DAY    |

From these calculations, the value of the commingled gas is greater than the sum of the individual gas zones.

|                         |            |
|-------------------------|------------|
| VALUE OF COMMINGLED GAS | \$1030 DAY |
| VALUE OF INDIVIDUAL GAS | \$954 DAY  |

# GAS COMPANY OF NEW MEXICO

311 Moore Drive  
Carlsbad, New Mexico 88220

## GAS CHROMATOGRAPHIC ANALYSIS

Analysis No. \_\_\_\_\_ Cylinder No. \_\_\_\_\_ Date 3/25/83  
 Sample Taken From (Be Specific) Mobil MAUDE  
Rickman Atoka  
 Station No. 3202 - B8

### CHROMATOGRAPHIC ANALYSIS DATA

| Components                     | Chart Reading | Chromatograph Factors | Mole %        | Calculations @ 14.73 psia, 60°F., Dry |
|--------------------------------|---------------|-----------------------|---------------|---------------------------------------|
| C <sub>1</sub> Methane         |               |                       | <u>95.39</u>  |                                       |
| C <sub>2</sub> Ethane          | <u>9.0</u>    | X .20                 | = <u>1.80</u> |                                       |
| CO <sub>2</sub> Carbon Dioxide | <u>27.0</u>   | X .04                 | = <u>1.08</u> |                                       |
| N <sub>2</sub> Nitrogen        | <u>16.0</u>   | X .08                 | = <u>1.28</u> | Calculated S. G. <u>.584</u>          |
| C <sub>5</sub> N-Pentane       | <u>0</u>      | X .01                 | = <u>0</u>    |                                       |
| C <sub>5</sub> Iso-Pentane     | <u>2.0</u>    | X .01                 | = <u>.02</u>  | Calculated B. T. U. <u>1012</u>       |
| C <sub>4</sub> N-Butane        | <u>2.0</u>    | X .02                 | = <u>.04</u>  |                                       |
| C <sub>4</sub> Iso-Butane      | <u>5.0</u>    | X .01                 | = <u>.05</u>  |                                       |
| C <sub>3</sub> Propane         | <u>5.0</u>    | X .05                 | = <u>.25</u>  |                                       |
| C <sub>6</sub> + Hexanes       | <u>9.0</u>    | X .01                 | = <u>.09</u>  |                                       |
| TOTAL                          |               |                       | <u>100</u>    |                                       |

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Tested By: Sam Tyson

gpc

# GAS COMPANY OF NEW MEXICO

311 Moore Drive  
Carlsbad, New Mexico 88220

## GAS CHROMATOGRAPHIC ANALYSIS

Analysis No. \_\_\_\_\_ Cylinder No. \_\_\_\_\_ Date 3/25/83  
 Sample Taken From (Be Specific) Mobil Mable  
Rickman (Morrow)  
 Station No. 3203-B3

### CHROMATOGRAPHIC ANALYSIS DATA

| Components                     | Chart Reading | Chromatograph Factors | Mole %        | Calculations @ 14.73 psia, 60°F., Dry |
|--------------------------------|---------------|-----------------------|---------------|---------------------------------------|
| C <sub>1</sub> Methane         |               |                       | <u>96.00</u>  |                                       |
| C <sub>2</sub> Ethane          | <u>10.0</u>   | X <u>.20</u>          | = <u>2.00</u> |                                       |
| CO <sub>2</sub> Carbon Dioxide | <u>30.0</u>   | X <u>.04</u>          | = <u>1.20</u> |                                       |
| N <sub>2</sub> Nitrogen        | <u>4.0</u>    | X <u>.08</u>          | = <u>.32</u>  | Calculated S. G. <u>.583</u>          |
| C <sub>5</sub> N-Pentane       | <u>0</u>      | X <u>.01</u>          | = <u>0</u>    |                                       |
| C <sub>5</sub> Iso-Pentane     | <u>2.0</u>    | X <u>.01</u>          | = <u>.02</u>  | Calculated B. T. U. <u>1023</u>       |
| C <sub>4</sub> N-Butane        | <u>2.0</u>    | X <u>.02</u>          | = <u>.04</u>  |                                       |
| C <sub>4</sub> Iso-Butane      | <u>5.0</u>    | X <u>.01</u>          | = <u>.05</u>  |                                       |
| C <sub>3</sub> Propane         | <u>5.0</u>    | X <u>.05</u>          | = <u>.25</u>  |                                       |
| C <sub>6</sub> + Hexanes       | <u>12.0</u>   | X <u>.01</u>          | = <u>.12</u>  |                                       |
| TOTAL                          |               |                       | <u>100</u>    |                                       |

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Tested By: Sam Tyson

*gpc*

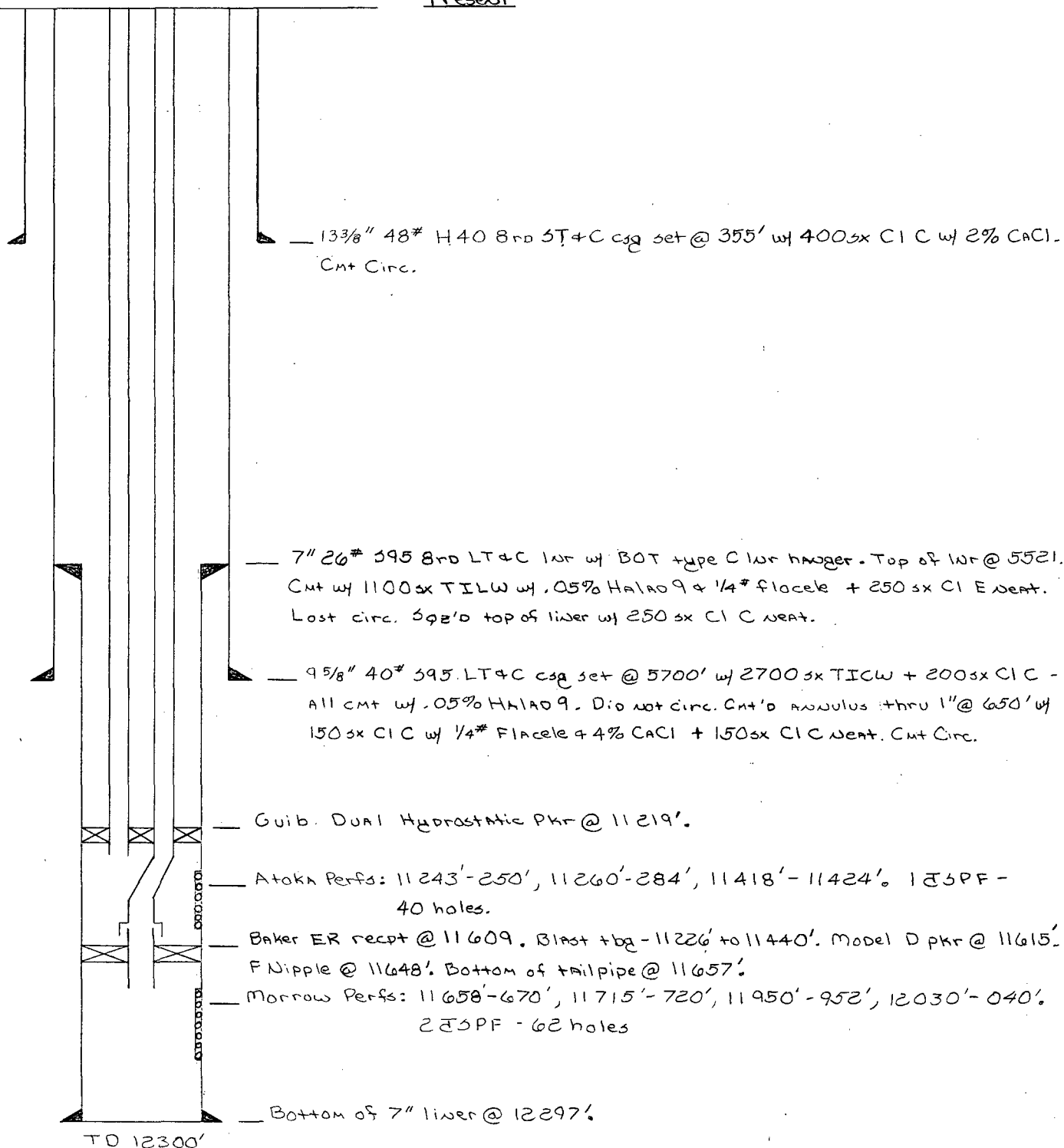
DATE 3-4-83 WELL NO. 1 LEASE Maupe Rickman Com. FIELD South Carlsbad Atoka/Morrow

LOCATION Sec 3 T23S R27E  
2204' FSL 840' FWL  
Eddy Co., New Mexico

SIGNED M.W. DEER

G.L. 3113  
D.F. N/A  
K.B. 3134  
ZERO 21' AGL

Present



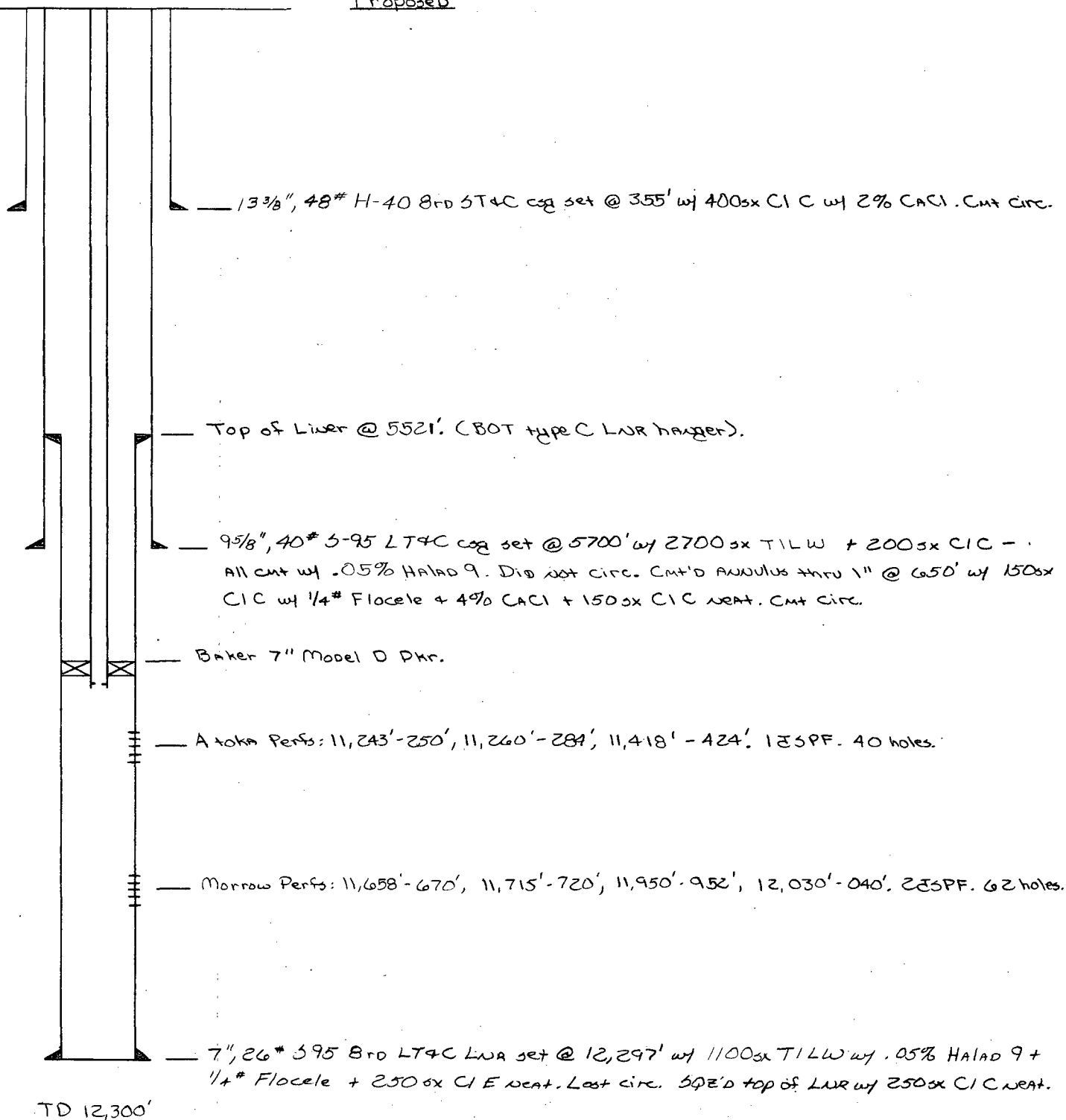
DATE 3-29-83 WELL NO. 1 LEASE Maudie Richmond Com. FIELD So. Carlisle Atoka / Morrow

LOCATION 1-3-235-27E  
2204' FSL AND 840' FWL  
Eddy County, New Mexico

SIGNED M.W. DERR

G.L. 3113  
D.F.         
K.B. 3134  
ZERO 21' AGL

Proposed



Mobil Producing TX. & N.M. Inc.  
Maude Rickman Com., Well #1  
Carlsbad (Atoka/Morrow) South Pool  
Sec. 3, T23S, R37E

The formula for the allocation of production to each of the commingled zones should assign 35% of production to the Atoka zone and 65% to the Morrow zone. These percentages are based upon the decline curves shown by attachments 3-A & 3-B and the current well tests.

Mobil Producing TX. & N.M. Inc.  
Maude Rickman Com., Well #1  
Carlsbad (Atoka/Morrow) South Pool  
Sec. 3, T23S, R37E

Offset Operators

Alpha Twenty-One Production Company  
2100 First National Bank Building  
Midland, TX 79701

Mesa  
Vaughn Building, Suite 1000  
400 W. Texas Avenue  
Midland, TX 79701

Read & Stevens, Inc.  
P.O. Box 1518  
Roswell, NM 88201

Retamco  
We are unable to locate address of this company. This acreage has no wells  
on lease.

This application was sent by certified mail to each known offset operator.



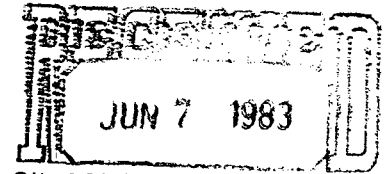
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J. A. Morris  
Regulatory Engineering Supervisor

# Mobil Producing Texas & New Mexico Inc.

May 26, 2983

NINE GREENWAY PLAZA—SUITE 2700  
HOUSTON, TEXAS 77046



Maude Rickman Com.  
W/2 Sec. 3 T23S-R27E  
Eddy County, New Mexico

Mobil Producing Texas and New Mexico Inc. owns an interest in the subject land by virtue of oil and gas leases on same. Ownership of each lease is for all depths, with ownership in all zones being common.

*James T. Kenyon*  
James T. Kenyon  
Contracts Coordinator