

Marbob Energy Corporation /

P. O. Box 227, Artesia, NM 88210-0227

Operator

Address

AAO Federal 2

Lot 3-1-18S-27E

Eddy County

Lease

Well No.

Unit Letter-Section-Township-Range

County

OGRID No. 014049 Property Code 29793 API No. 30-015-32308 Lease Type: ☒ Federal ☐ State ☐ Fee

| DATA ELEMENT | UPPER ZONE | INTERMEDIATE ZONE | LOWER ZONE |
|--|--------------------------------|-----------------------------|---|
| Pool Name | Red Lake Q-GB-SA | | Red Lake Glorietta Yeso NE |
| Pool Code | 51300 | | 96836 |
| Top and Bottom of Pay Section (Perforated or Open-Hole Interval) | 1967-3115' perforated | | 3373-3699' perforated |
| Method of Production (Flowing or Artificial Lift) | Artificial Lift | | Artificial Lift |
| Bottomhole Pressure (Note: Pressure data will not be required if the bottom perforation in the lower zone is within 150% of the depth of the top perforation in the upper zone) | Est. 50 psi producing BHP | | Est. 100 psi producing BHP |
| Oil Gravity or Gas BTU (Degree API or Gas BTU) | 38.5° | | 41.8° |
| Producing, Shut-In or New Zone | New zone | | Producing |
| Date and Oil/Gas/Water Rates of Last Production. (Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data.) | Date: N/A Rates: | Date: Rates: | Date: 1/15/03 Rates: 33 bopd 56 mcfpd |
| Fixed Allocation Percentage (Note: If allocation is based upon something other than current or past production, supporting data or explanation will be required.) | Oil Gas 71 % 68 % | Oil Gas % % | Oil Gas 29 % 32 % |

ADDITIONAL DATA

Are all working, royalty and overriding royalty interests identical in all commingled zones?

Yes ☒ No ☐

If not, have all working, royalty and overriding royalty interest owners been notified by certified mail?

Yes ☐ No ☐

Are all produced fluids from all commingled zones compatible with each other?

Yes ☒ No ☐

Will commingling decrease the value of production?

Yes ☐ No ☒

If this well is on, or communitized with, state or federal lands, has either the Commissioner of Public Lands or the United States Bureau of Land Management been notified in writing of this application?

Yes ☒ No ☐

NMOCD Reference Case No. applicable to this well: R-11363 Pre-approved Pool

Attachments:

C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
Production curve for each zone for at least one year. (If not available, attach explanation.)
For zones with no production history, estimated production rates and supporting data.
Data to support allocation method or formula.
Notification list of working, royalty and overriding royalty interests for uncommon interest cases.
Any additional statements, data or documents required to support commingling.

PRE-APPROVED POOLS

If application is to establish Pre-Approved Pools, the following additional information will be required:

List of other orders approving downhole commingling within the proposed Pre-Approved Pools

List of all operators within the proposed Pre-Approved Pools

Proof that all operators within the proposed Pre-Approved Pools were provided notice of this application.

Bottomhole pressure data.

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

SIGNATURE *Brian Collins*

TITLE Engineer

DATE 20 Jan 03

TYPE OR PRINT NAME Brian Collins TELEPHONE NO. (505) 748-3303

DISTRICT I

P.O. Box 1980, Hobbs, NM 88241-1980

DISTRICT II

P.O. Drawer DD, Artesia, NM 88211-0719

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV

P.O. BOX 2088, SANTA FE, N.M. 87504-2088

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-102

Revised February 10, 1994

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

| | | |
|----------------------------|--|---|
| API Number 30-015-32308 | Pool Code 96836 | Pool Name RED LAKE; GLORIETA YESO, NORTHEAST |
| Property Code | Property Name AAO FEDERAL | Well Number 2 |
| OGRD No. 14049 | Operator Name MARBOB ENERGY CORPORATION | Elevation 3611' |

Surface Location

| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| 3 | 1 | 18-S | 27-E | | 430 | NORTH | 2310 | WEST | EDDY |

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 |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| | | | | | | | | | |

| Dedicated Acres | Joint or Infill | Consolidation Code | Order No. |
|-----------------|-----------------|--------------------|-----------|
| 40 | | | |

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

| | | | |
|--|----------|----------|----------|
| LOT 4 | LOT 3 | LOT 2 | LOT 1 |
| 39.79 AC | 40.00 AC | 40.20 AC | 40.41 AC |
| | | | |
| <p>OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><i>Diana J. Cannon</i> Signature DIANA J. CANNON Printed Name PRODUCTION ANALYST Title APRIL 11, 2002 Date</p> | | | |
| <p>SURVEYOR CERTIFICATION</p> <p>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.</p> <p>MARCH 13, 2002 Date Surveyed Signature & Seal of Professional Surveyor <i>Gary E. Eidsen</i> 02-11-0198 Certificate No. RONALD J. EIDSON 3239 GARY EIDSON 12641</p> | | | |

Engineering Summary
Form C-107A
Application for Downhole Commingling

Marbob Energy Corporation
TDF State No. 1 (Unit F, Sec. 2-T18S-R27E)
AAO Federal No. 1 (Lot 4, Sec. 1-T18S-R27E)
AAO Federal No. 2 (Lot 3, Sec. 1-T18S-R27E)

Marbob Energy proposes to downhole commingle the San Andres (Red Lake Q-GB-SA 51300) and the Yeso (Red Lake Glorieta Yeso, NE 96836) in the captioned wells. This proposal is identical to the downhole comminglings that Devon Energy has done offsetting the captioned wells (Orders R-11363, DHC-2390, DHC-2685, DHC-2701).

No crossflow will occur because these wells will be rod pumped in a pumped down condition. The MJ State No. 1 is currently completed in the Yeso and will be used as a "typical" Yeso well. The MJ State No. 2 is currently completed in the San Andres and will be used as a "typical" San Andres well. The proposed zonal allocation is described below.

Yeso: Production declines exponentially at 84%/yr. for one year, followed by 35%/yr. for oil and 32%/yr. for gas. (Best engineering estimate using the production history of nearby Devon wells.)

| | | |
|------|------------|-----------|
| Qi | = 90 bopd | d=84%/yr. |
| Q1yr | = 14 bopd | d=35%/yr. |
| Qel | = 1.5 bopd | assumed |

$$EUR = \frac{-365 (90-14)}{\ln (1-.84)} + \frac{-365 (14-1.5)}{\ln(1-.35)} = 25.7 \text{ MBO}$$

| | | |
|------|-------------|-----------|
| Qi | = 140 mcf/d | d=84%/yr. |
| Q1yr | = 22 mcf/d | d=32%/yr. |
| Qel | = 5 mcf/d | assumed |

$$EUR = \frac{-365 (140-22)}{\ln (1-.84)} + \frac{-365 (22-5)}{\ln (1-.32)} = 39.6 \text{ MMCF}$$

San Andres: Production declines exponentially at 80%/yr. for one year, followed by 24%/yr. for oil and 20%/yr. for gas. (Best engineering estimate using the production history of nearby Devon wells.)

$$\begin{aligned} Q_i &= 145 \text{ bopd} & d &= 80\%/yr. \\ Q_{1yr} &= 29 \text{ bopd} & d &= 24\%/yr. \\ Q_{el} &= 1.5 \text{ bopd} & & \text{assumed} \end{aligned}$$

$$EUR = \frac{-365 (145-29)}{\ln (1-.80)} + \frac{-365 (29-1.5)}{\ln (1-.24)} = 62.9 \text{ MBO}$$

$$\begin{aligned} Q_i &= 180 \text{ mcf/d} & d &= 80\%/yr. \\ Q_{1yr} &= 36 \text{ mcf/d} & d &= 20\%/yr. \\ Q_{el} &= 5 \text{ mcf/d} & & \text{assumed} \end{aligned}$$

$$EUR = \frac{-365 (180-36)}{\ln (1-.80)} + \frac{-365 (36-5)}{\ln (1-.20)} = 83.4 \text{ MMCF}$$

$$\text{Yeso Oil} = \frac{25.7 \text{ MBO}}{25.7 + 62.9} = .29 = 29\%$$

$$\text{San Andres Oil} = 1-.29 = .71 = 71\%$$

$$\text{Yeso Gas} = \frac{39.6 \text{ MMCF}}{39.6 + 83.4} = .32 = 32\%$$

$$\text{San Andres Gas} = 1-.32 = .68 = 68\%$$

KE'S LEASES

June 2002)

MONTH:

June 2002

| ARCO 26 A | | | MJ STATE | | | | | | | |
|-----------|----------|-----|----------|------|-------------|------------|-------|-----|-----|----|
| WTR | ELK HORN | GPM | TP | LP | Gas PREV | Gas EST | TOTAL | OIL | WTR | |
| 302 | | 124 | — | 24.9 | 94 | 92 | 17474 | 30 | — | 1 |
| 170 | | 130 | — | 24.5 | 96 | 90 | 17570 | 30 | — | 2 |
| 220 | | 126 | — | 24.7 | 95 | 90 | 17666 | 32 | — | 3 |
| 213 | | 130 | — | 24.7 | 96 | 103 | 17771 | 32 | — | 4 |
| 357 | | 130 | — | 23.1 | 95 | 94 | 17862 | 28 | — | 5 |
| 205 | | 126 | — | 25 | 94 | 93 | 17952 | 28 | — | 6 |
| 193 | | 126 | — | 25 | 94 | 92 | 18043 | 26 | — | 7 |
| 200 | | 126 | | 25.3 | 95 | 93 | 18150 | 32 | — | 8 |
| 220 | | 124 | | 24.2 | 151 | 115 | 18302 | 85 | — | 9 |
| 115 | | 124 | | 25.1 | 189 | 203 | 18443 | 106 | — | 10 |
| 267 | | 124 | | 25.2 | 220 | 229 | 18114 | 140 | — | 11 |
| 178 | | 120 | | 25.9 | 233 | 234 | 18051 | 110 | — | 12 |
| 169 | | 140 | | 25.5 | 236 | 240 | 19193 | 98 | — | 13 |
| 217 | | 124 | | 27.5 | 238 | 249 | 19422 | 118 | — | 14 |
| 165 | | 128 | | 25.7 | 258 | 351 | 19681 | 127 | — | 15 |
| 309 | | 130 | | 24.9 | 266 | 264 | 19948 | 172 | — | 16 |
| 201 | | 135 | | 25.1 | 265 | 274 | 20224 | 182 | — | 17 |
| 235 | | 135 | | 26.0 | 264 | 265 | 20418 | 175 | — | 18 |
| 204 | | 135 | | 25.3 | 263 | 255 | 20752 | 177 | — | 19 |
| 199 | | 135 | | 27.0 | 257 | 229 | 20999 | 161 | — | 20 |
| 215 | | 126 | | 25.0 | 247 | 222 | 21236 | 174 | — | 21 |
| 300 | | 135 | | 25.5 | 250 | 241 | 21493 | 175 | — | 22 |
| 176 | | 130 | | 26.0 | 276 | 273 | 21781 | 174 | 540 | 23 |
| 173 | | 130 | | 26.0 | 282 | 272 | 22053 | 173 | — | 24 |
| | | | | | | | | | | 25 |
| | | | | | | | | | | 26 |
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| | | | | | | | | | | 31 |

MJ St. #2 San Andres IP $\approx 175 - 30 = 145$ BOPD
 $\approx 275 - 95 = 180$ MCFD

MJ St. #1 Yesso IP ≈ 90 BOPD
 ≈ 140 MCFD (January 2002)

Yesso Only (MJ St. #1)
 Yesso (MJ-1) + S. Andres (MJ St. #2)