

District I
1625 N. French Drive, Hobbs, NM 88240

District II
1301 W. Grand Avenue, Artesia, NM 88210

District III
1000 Rio Brazos Road, Aztec, NM 87410

District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-107A
Revised June 10, 2003

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

APPLICATION TYPE
☒ Single Well
☐ Establish Pre-Approved Pools
EXISTING WELLBORE
☒ Yes ☐ No

APPLICATION FOR DOWNHOLE COMMINGLING

MARBOB ENERGY CORPORATION P O BOX 227 ARTESIA, NM 88211-0027
Operator Address
MOORE STATE #4 H-34-17S-28E EDDY COUNTY, NEW MEXICO
Lease Well No. Unit Letter-Section-Township-Range County
OGRID No. 14049 Property Code 6526 API No. 30-015-34367 Lease Type: ☐ Federal ☒ State ☐ Fee

DATA ELEMENT	UPPER ZONE	INTERMEDIATE ZONE	LOWER ZONE
Pool Name	ARTESIA Q-GB-SA		ARTESIA GLORIETA YESO
Pool Code	3230		96830
Top and Bottom of Pay Section (Perforated or Open-Hole Interval)	2393-2859' PERFORATED		3740-3987' 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: FEBRUARY 10, 2006 20 BOPD Rates: 150 MCFD 200 BHPD
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 69 % 50 %	Oil Gas % %	Oil Gas 31 % 50 %

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 ☐
NMOC Reference Case No. applicable to this well: _____

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 02/16/06
TYPE OR PRINT NAME BRIAN COLLINS TELEPHONE NO. (505) 748-3303
E-MAIL ADDRESS engineering@marbob.com

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
- Engineering Bureau -
1220 South St. Francis Drive, Santa Fe, NM 87505



ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] **TYPE OF APPLICATION - Check Those Which Apply for [A]**

[A] Location - Spacing Unit - Simultaneous Dedication
☐ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement
☒ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

[D] Other: Specify _____

[2] **NOTIFICATION REQUIRED TO: - Check Those Which Apply, or ☐ Does Not Apply**

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners

[B] ☐ Offset Operators, Leaseholders or Surface Owner

[C] ☐ Application is One Which Requires Published Legal Notice

[D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐ Waivers are Attached

[3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is accurate and complete to the best of my knowledge. I also understand that no action will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Print or Type Name

Signature

Title

Date

e-mail Address

Engineering Summary
Form C-107A
Application for Downhole Commingling

Marbob Energy Corporation
Moore State #4 (Unit H, Sec. 34-T17S-R28E)

Marbob Energy proposes to downhole commingle the San Andres (Artesia Q-GB-SA 3230) and the Yeso (Artesia Glorieta Yeso 96830) in the captioned well.

No crossflow will occur because this well will be rod pumped in a pumped down condition. The proposed zonal allocation is described below. A nearby San Andres well, the Moore State #3 (attached), will be used as an analog for decline behavior over time. The best engineering estimate is that the Yeso decline behavior over time will approximate the San Andres decline behavior

Yeso: As shown on the attached production plot for the nearby Moore State #3, the best engineering estimate is that the oil will decline 45%/yr for 2 years, 20%/yr for 4 years, followed by 8%/yr thereafter. The gas will decline 70%/yr for first year, 15%/yr for 6 years, followed by 7%/yr thereafter.

Q_{oil} = 20 bopd.
Q_{2yr} = 6 bopd
Q_{6yr} = 2.5 bopd
Q_{el} = 1 bopd

$$\begin{aligned} \text{EUR} &= \frac{-365 (20-6)}{\ln (1-.45)} + \frac{-365 (6-2.5)}{\ln (1-.2)} + \frac{-365 (2.5-1)}{\ln (1-.08)} \\ &= 8547 + 5725 + 6566 \text{ BO} \\ &= 20838 \text{ BO} \end{aligned}$$

Q_{gas} = 150 mcf/d
Q_{1yr} = 45 mcf/d
Q_{6yr} = 17 mcf/d
Q_{el} = 3 mcf/d

$$\begin{aligned} \text{EUR gas} &= \frac{-365 (150-45)}{\ln (1-.70)} + \frac{-365 (45-17)}{\ln (1-.15)} + \frac{-365 (17-3)}{\ln (1-.07)} \\ &= 31832 + 62885 + 70414 \\ &= 165131 \text{ MCF} \end{aligned}$$

San Andres: Best engineering estimate is that San Andres will start out at 40 bopd/150 mcf/d and will decline as described previously.

Q_{oil} = 40 bopd
Q_{2yr} = 12 bopd
Q_{6yr} = 5 bopd
Q_{el} = 1 bopd

$$\begin{aligned} \text{EUR} &= \frac{-365 (40-12)}{\ln (1-.45)} + \frac{-365 (12-5)}{\ln (1-.2)} + \frac{-365 (5-1)}{\ln (1-.08)} \\ &= 17094 + 11450 + 17510 \\ &= 46054 \text{ BO} \end{aligned}$$

Q_i = 150 mcf/d
Q_{1yr} = 45 mcf/d
Q_{7yr} = 17 mcf/d
Q_{el} = 3 mcf/d

EUR = See Yeso calculations
= 165131 MCF

Zonal Allocation

$$\text{Yeso Oil} = \frac{20838 \text{ BO}}{20838 + 46054 \text{ BO}} = 31.15\% \text{ Say } 31\%$$

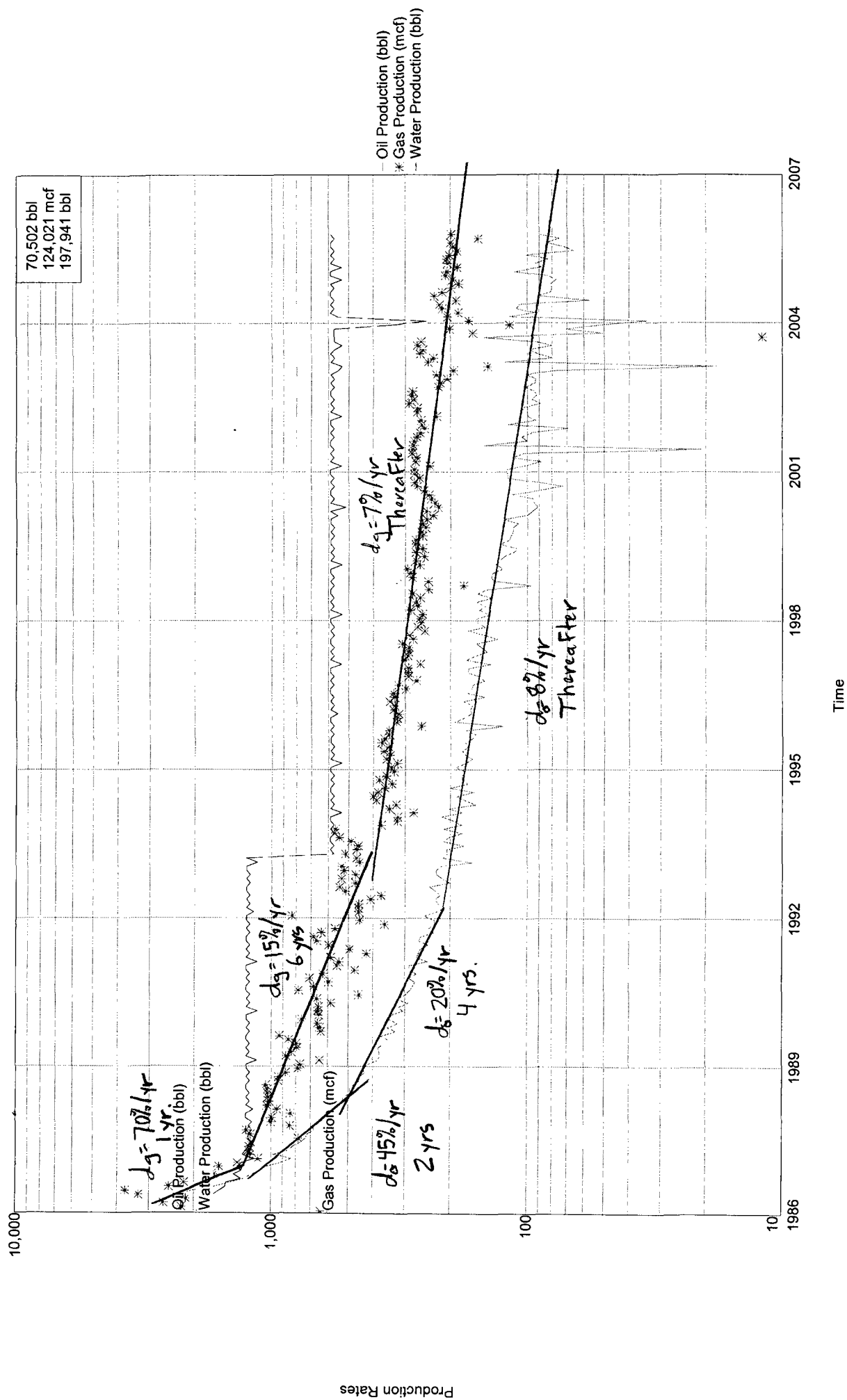
Yeso Gas = San Andres Gas = 50%

San Andres Oil = 100 - 31% = 69%

San Andres Gas = 50%

Lease Name: MOORE STATE
 County, State: EDDY, NM
 Operator: MARBOB ENERGY CORPORATION
 Field: ARTESIA
 Reservoir: QUEEN-GRAYBURG-SAN A
 Location: 34 17S 28E SE NE

MOORE STATE 3



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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form C-102
Permit 16257

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-34367	Pool Name ARTESIA;QUEEN-GRAYBURG-SAN ANDRES	Pool Code 3230
Property Code 6526	Property Name MOORE STATE	Well No. 004
OGRID No. 14049	Operator Name MARBOB ENERGY CORP	Elevation 3672

Surface And Bottom Hole Location

UL or Lot H	Section 34	Township 17S	Range 28E	Lot Idn H	Feet From 1650	N/S Line N	Feet From 990	E/W Line E	County Eddy
Dedicated Acres 40		Joint or Infill		Consolidation Code		Order No.			

			■

OPERATOR CERTIFICATION

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

Electronically Signed By: Diana Briggs

Title: Production Analyst

Date: 09/29/2005

SURVEYOR CERTIFICATION

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.

Surveyed By: Gary Eidson

Date of Survey: 09/07/2005

Certificate Number: 12641

Submit 3 Copies To Appropriate District
Office
District I
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District II
1301 W. Grand Ave., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM
87505

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
May 27, 2004

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

WELL API NO. 30-015-34367
5. Indicate Type of Lease STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No.
7. Lease Name or Unit Agreement Name MOORE STATE
8. Well Number 4
9. OGRID Number 14049
10. Pool name or Wildcat ARTESIA GLORIETA YESO

11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3672' GR
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Pit or Below-grade Tank Application <input type="checkbox"/> or Closure <input type="checkbox"/>
Pit type _____ Depth to Groundwater _____ Distance from nearest fresh water well _____ Distance from nearest surface water _____
Pit Liner Thickness: _____ mil Below-Grade Tank: Volume _____ bbls; Construction Material _____

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well: Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/>
2. Name of Operator MARBOB ENERGY CORPORATION
3. Address of Operator P O BOX 227 ARTESIA NM 88211-0227
4. Well Location Unit Letter <u>H</u> : <u>1650</u> feet from the <u>NORTH</u> line and <u>990</u> feet from the <u>EAST</u> line Section <u>34</u> Township <u>17S</u> Range <u>28E</u> NMPM EDDY County <u>NM</u>

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO: PERFORM REMEDIAL WORK <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> TEMPORARILY ABANDON <input type="checkbox"/> CHANGE PLANS <input type="checkbox"/> PULL OR ALTER CASING <input type="checkbox"/> MULTIPLE COMPL <input type="checkbox"/> OTHER: <u>DOWNHOLE COMMINGLING</u> <input checked="" type="checkbox"/>	SUBSEQUENT REPORT OF: REMEDIAL WORK <input type="checkbox"/> ALTERING CASING <input type="checkbox"/> COMMENCE DRILLING OPNS. <input type="checkbox"/> P AND A <input type="checkbox"/> CASING/CEMENT JOB <input type="checkbox"/> OTHER: <input type="checkbox"/>
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13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

SEE ATTACHED C-107A APPLICATION FOR DOWNHOLE COMMINGLING.

THE PROPOSED ALLOCATION IS: ARTESIA Q-GB-SA 3230 - OIL 69% - GAS 50%
ARTESIA GLORIETA YESO 96830 - OIL 31% - GAS 50%

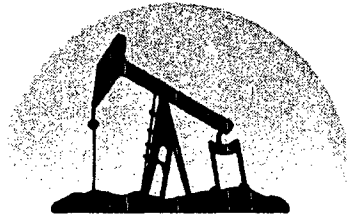
NEW ALLOCATIONS WILL BE SUBMITTED IF ACTUAL WELL PRODUCTION IS SIGNIFICANLY DIFFERENT THAN THAT ABOVE.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☐, a general permit ☐ or an (attached) alternative OCD-approved plan ☐.

SIGNATURE Brian Collins TITLE ENGINEER DATE 02/16/06

Type or print name BRIAN COLLINS E-mail address: engineering@marbob.com Telephone No. 505-748-3303
For State Use Only

APPROVED BY: _____ TITLE _____ DATE _____
Conditions of Approval (if any): _____



marbob
energy corporation

February 15, 2006

New Mexico State Land Office
Oil, Gas & Minerals Division
P. O. Box 1148
Santa Fe, NM 87504-1148

Attn: Ms. Jamie Bailey

Re: C-107A Downhole Commingling Application
Moore State #4
Township 17 South, Range 28 East, NMPM
Section 34: Unit H
Eddy County, New Mexico

Dear Ms. Bailey:

Enclosed is the \$30.00 application fee and copy of Form C-107A Application for Downhole Commingling that we submitted to the NMOCD for the Moore State #4 well located in Eddy County.

We are seeking approval to downhole commingle the Yeso and San Andres zones to extend the economic life of the well and maximize the financial benefit to the State of New Mexico.

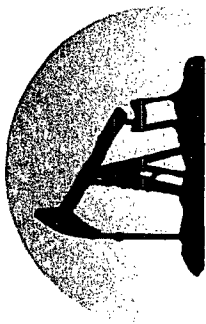
If you have any questions, please call me at 505-748-3303.

Sincerely,

Brian Collins
Petroleum Engineer

BC/dlw
enclosures

INVOICE DATE	INVOICE NO.	DESCRIPTION	INVOICE TOTAL	ADJUSTMENTS	DISCOUNT	NET AMOUNT
02/16/06		MOORE STATE #4 - COMINGLING APPLICATION	\$30.00			\$30.00



MARBOb ENERGY CORPORATION

2208 W. MAIN
P.O. BOX 227
ARTESIA, NEW MEXICO 88211-0227
(505) 748-3303

038947

PLEASE DETACH BEFORE DEPOSITING. RETAIN TOP PORTION FOR YOUR RECORDS.

038947



2208 W. MAIN
P.O. BOX 227
ARTESIA, NEW MEXICO 88211-0227
(505) 748-3303

95-43/1122

FIRST NATIONAL BANK
P.O. DRAWER AA
ARTESIA, NM 88210

***** THIRTY DOLLARS & 00/100 *****

PAY TO THE ORDER OF
NEW MEXICO STATE LAND OFFICE
OIL, GAS & MINERALS DIVISION
PO BOX 1148
SANTA FE, NEW MEXICO 87504-1148

DATE	CHECK AMOUNT
02/16/06	\$30.00
MARBOb ENERGY CORPORATION	

⑈038947⑈ ⑈112200439⑈ ⑈46512710⑈