

1/23/06 - WVS

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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

RUTHIE FEE #1 M-10-22S-27E EDDY COUNTY, NM
Lease Well No. Unit Letter-Section-Township-Range County

OGRID No. 14049 Property Code 33875 API No. 30-015-33403 Lease Type: ☐ Federal ☐ State ☒ Fee

DATA ELEMENT	UPPER ZONE	INTERMEDIATE ZONE	LOWER ZONE
Pool Name	TANSILL DAM ATOKA <i>Gas</i>		CARLSBAD SOUTH MORROW
Pool Code	85900		73960
Top and Bottom of Pay Section (Perforated or Open-Hole Interval)	10924-11060'		11224-11587'
Method of Production (Flowing or Artificial Lift)	FLOWING		FLOWING
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 500 PSI PRODUCING BHP		EST 500 PSI PRODUCING BHP
Oil Gravity or Gas BTU (Degree API or Gas BTU)	N/A		N/A
Producing, Shut-In or New Zone	PRODUCING		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: JAN 18, 2006 Rates: EST 1400 MCFD	Date: Rates:	Date: JAN 16, 2006 Rates: EST 15 MCFD
Fixed Allocation Percentage (Note: If allocation is based upon something other than current or past production, supporting data or explanation will be required.)	Oil 97 % Gas 97 %	Oil % Gas %	Oil 3 % Gas 3 %

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 01/19/06
TYPE OR PRINT NAME BRIAN COLLINS TELEPHONE NO. (505) 748-3303
E-MAIL ADDRESS engineering@marbob.com

Engineering Summary
Form C-107A
Application for Downhole Commingling
Marbob Energy Corporation
Ruthie Fee No. (M-10-22S-27E)

Marbob Energy proposes to downhole commingle the Morrow and Atoka zones. No crossflow will occur because this well will be produced into a low pressure pipeline at maximum drawdown and because each zone is separated by a composite frac plug, which acts as a check valve by preventing downward flow.

The Morrow and Atoka reserves are calculated as follows:

Morrow: The best engineering estimate is that the Morrow will decline at an exponential decline of 50%/yr.

$$\begin{aligned} Q_i &= 15 \text{ MCFD} \\ Q_{el} &= 5 \text{ MCFD} \\ d &= 50\%/yr. \end{aligned}$$

$$RUR = \frac{-365 (Q_i - Q_{el})}{\ln (1-d)} = \frac{-365 (15-5)}{\ln (1-.5)} = 5266 \text{ MCF}$$

Atoka: The best engineering estimate is that Atoka will decline at 95%/yr the first year and 75%/yr thereafter.

$$\begin{aligned} Q_i &= 1400 \text{ MCFD} \\ Q_{1yr} &= 70 \text{ MCFD} \\ Q_{el} &= 5 \text{ MCFD} \end{aligned}$$

$$\begin{aligned} RUR &= \frac{-365 (1400-70)}{\ln (1-.95)} + \frac{-365 (70-5)}{\ln (1-.75)} = 162,047 \text{ MCF} + 17,114 \text{ MCF} \\ &= 179,161 \text{ MCF} \end{aligned}$$

The proposed allocation follows. These zones don't produce oil/condensate, therefore the allocation for oil will be the same as the gas allocation.

$$\text{Morrow Gas/Oil} \quad \frac{5266 \text{ MMCF}}{5266 + 179161 \text{ MCF}} = 2.86\%, \text{ say } 3\%$$

$$\text{Atoka Gas/Oil} \quad 100-3 = 97\%$$

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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

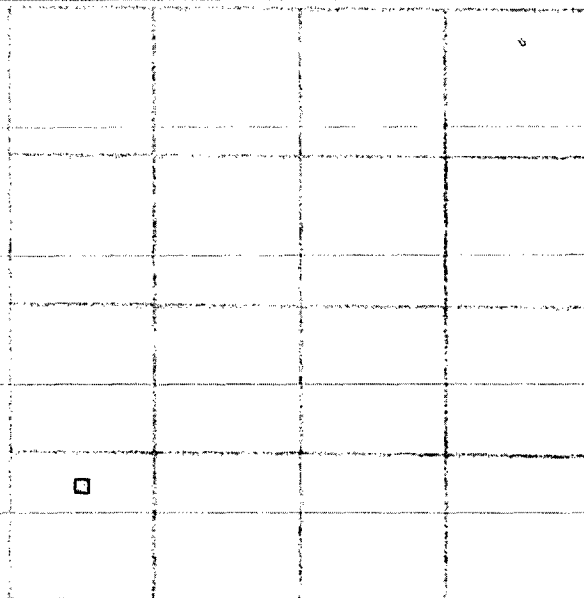
Permit 880

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-33403	Pool Name CARLSBAD;MORROW, SOUTH (PRO GAS)	Pool Code 73960
Property Code 33875	Property Name RUTHIE FEE	Well No. 001
OGRID No. 14049	Operator Name MARBOB ENERGY CORP	Elevation 3080

Surface And Bottom Hole Location

UL. or Lot M	Section 10	Township 22S	Range 27E	Lot Idn M	Feet From 1026	N/S Line S	Feet From 660	E/W Line W	County Eddy
Dedicated Acres 320		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 Cannon

Title: Production Analyst

Date: 04/23/2004

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: 04/14/2004

Certificate Number: 12641

Submit 3 Copies To Appropriate District
Office
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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. 30-015-33403
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input checked="" type="checkbox"/>
6. State Oil & Gas Lease No.
7. Lease Name or Unit Agreement Name RUTHIE FEE
8. Well Number 1
9. OGRID Number 14049
10. Pool name or Wildcat CARLSBAD; MORROW, SOUTH

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 type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other	
2. Name of Operator MARBOB ENERGY CORPORATION	
3. Address of Operator P O BOX 228 ARTESIA, NM 88211-0228	
4. Well Location Unit Letter M : 1026 feet from the SOUTH line and 660 feet from the WEST line Section 10 Township 22S Range 27E NMPM EDDY County NM	
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3080' GR	
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 _____	

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

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	P AND A <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	MULTIPLE COMPL <input type="checkbox"/>	CASING/CEMENT JOB <input type="checkbox"/>	
OTHER: DOWNHOLE COMMINGLING <input checked="" type="checkbox"/>		OTHER: <input type="checkbox"/>	

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: CARLSBAD SOUTH MORROW 73960 - OIL 3% - GAS 3%
TANSILL DAM ATOKA 85900 - OIL 97% - GAS 97%

NEW ALLOCATIONS WILL BE SUBMITTED IF ACTUAL WELL PRODUCTION IS SIGNIFICANTLY 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 01/19/06

Type or print name BRIAN COLLINS
For State Use Only

E-mail address: engineering@marbob.com Telephone No. 505-748-3303

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