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STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION



BRUCE KING  
GOVERNOR

ANITA LOCKWOOD  
CABINET SECRETARY

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

**ADMINISTRATIVE ORDER DHC-1030**

Meridian Oil Company  
P.O. Box 4289  
Farmington, NM 87499-4289

**RECEIVED**  
SEP - 2 1994

Attention: Travis D. Stice

**OIL CON. DIV.**  
**DIST. 3**

*Reid Well No. 13  
Unit 1, Section 18, Township 28 North, Range 9 West, NMPM,  
San Juan County, New Mexico.  
Basin-Fruitland Coal and Aztec-Pictured Cliffs Pools*

Dear Mr. Stice:

Reference is made to your recent application for an exception to Rule 303-A of the Division Rules and Regulations to permit the subject well to commingle production from both pools in the wellbore.

It appearing that the subject well qualifies for approval for such exception pursuant to the provisions of Rule 303-C, and that reservoir damage or waste will not result from such downhole commingling, and correlative rights will not be violated thereby, you are hereby authorized to commingle the production as described above and any Division Order which authorized the dual completion and required separation of the two zones is hereby placed in abeyance.

In accordance with the provisions of Rule 303-C-4., total commingled oil production from the subject well shall not exceed 20 barrels per day, and total water production shall not exceed 40 barrels per day. The maximum amount of gas which may be produced daily from the well shall be determined by Division Rules and Regulations or by the gas allowable for each respective prorated pool as printed in the Division's San Juan Basin Gas Proration Schedule.

Assignment of allowable to the well and allocation of production from the well shall be in accordance with the allocation formula shown on Exhibit "A", attached hereto and made a part hereof. Any condensate production will be allocated entirely to the Aztec-Pictured Cliffs interval.

*Administrative Order DHC-1030*  
*Meridian Oil Company*  
*August 30, 1994*  
*Page 2*

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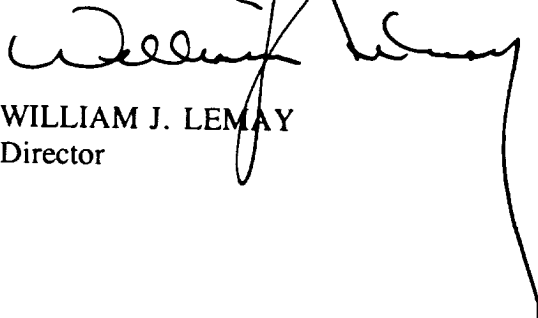
The operator is responsible for reporting the monthly gas production from the subject well to the Division utilizing the allocation formula adopted herein. An annual report shall be submitted by the operator to both the Aztec and Santa Fe offices of the Division showing the complete computations for the previous twelve-month period.

FURTHER: The operator shall notify the Aztec District Office of the Division upon implementation of the commingling process.

Pursuant to Rule 303-C-5, the commingling authority granted by the order may be rescinded by the Division Director if, in his opinion, conservation is not being best served by such commingling.

Approved at Santa Fe, New Mexico on this 30th day of August, 1994.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION



WILLIAM J. LEMAY  
Director

S E A L

WJL/DRC/amg

cc: Oil Conservation Division - Aztec  
U.S. Bureau of Land Management - Farmington

# **Reid #13**

## **MONTHLY GAS PRODUCTION ALLOCATION FORMULA**

### **GENERAL EQUATION**

$$\mathbf{Q_t = Q_{ftc} + Q_{pc}}$$

WHERE:  $Q_t$  = TOTAL MONTHLY PRODUCTION (MCF/MONTH)  
 $Q_{ftc}$  = FRUITLAND COAL (ftc) MONTHLY PRODUCTION  
 $Q_{pc}$  = PICTURED CLIFFS (pc) MONTHLY PRODUCTION (MCF/MONTH)

REARRANGING THE EQUATION TO SOLVE FOR  $Q_{ftc}$ :

$$\mathbf{Q_{ftc} = Q_t - Q_{pc}}$$

ANY PRODUCTION RATE OVER WHAT IS CALCULATED FOR THE PICTURED CLIFFS (PC) USING THE APPLIED FORMULA IS FRUITLAND COAL (FTC) PRODUCTION.

PICTURED CLIFFS (PC) FORMATION PRODUCTION FORMULA IS:

$$\mathbf{Q_{pc} = Q_{pci} \times e^{\{-(D_{pc}) \times (t)\}}}$$

WHERE:  $Q_{pci}$  = INITIAL PC MONTHLY FLOW RATE (DETERMINED FROM LAST MONTH OF PC ONLY PRODUCTION, PRIOR TO RECOMPLETION & COMMINGLE)

$D_{pc}$  = PICTURED CLIFFS MONTHLY DECLINE RATE CALCULATED FROM DECLINE CURVE AND MATERIAL BALANCE ANALYSIS:

$$\mathbf{D_{pc} = (0.00330/M)}$$

THUS:  $Q_{ftc} = Q_t - Q_{pci} \times e^{\{-(0.00330) \times (t)\}}$

WHERE: (t) IS IN MONTHS

REFERENCE: Thompson, R. S., and Wright, J. D., "Oil Property Evaluation", pages 5-2, 5-3, 5-4.

# MERIDIAN OIL

July 7, 1994

New Mexico Oil Conservation Division  
Attn: Mr. Bill LeMay  
P.O. Box 2088  
310 Old Santa Fe Trail  
Santa Fe, New Mexico

**RECEIVED**  
JUL 11 1994

RE: **Reid #13**  
**Unit I, Section 18, T28N, R09W**  
**San Juan, New Mexico**  
**Downhole Commingling Request**

**OIL CON. DIV.**  
**DIST. 3**

Dear Mr. LeMay:

Meridian Oil, operator for the Southland Royalty Company, respectfully requests administrative approval to downhole commingle the Aztec Pictured Cliffs and Basin Fruitland Coal pools in the referenced well. Ownership for the zones to be commingled is common. All offset interest owners shown on the attached plat and the Bureau of Land Management will receive notice of this commingling application.

Precedent for commingling the referenced zones in this area has been established in the Reid #8 (Unit L, Section 19, T28N, R09W) per NMOCD Administrative Order #DHC-856, dated September 3, 1992. This well is producing with no adverse effects from commingling.

The Reid #13 was completed in the Pictured Cliffs in 1959. Currently the well is shut in due to a suspected casing failure, which was isolated in December 1992 with a packer. The well has cumulative production of 998 MMCF. Meridian plans to repair the failed casing in the existing wellbore, complete Fruitland Coal interval, and commingle the Fruitland Coal with the Pictured Cliffs production. A post workover deliverability of 60 MCFD is predicted from the Pictured Cliffs interval.

Based on Fruitland Coal completions in this area, ultimate reserves of 851 MMCF and an initial deliverability of 150 MCFD are estimated for the Fruitland Coal zone in the Reid #13. Currently, the Pictured Cliffs is marginally economic, therefore, the addition of the Fruitland Coal will ensure continued Pictured Cliffs production and prevent resources from being wasted.

The fluids in the two reservoirs are compatible and no precipitates will be formed which could potentially damage either reservoir. The reservoir parameters of each zone are such that underground waste will not be caused by the proposed commingling. Shut-in pressures for the Pictured Cliffs and Fruitland Coal are estimated to be 350 psi and 320 psi, respectively.

The allocation of the commingled production will be calculated using flow tests from the Pictured Cliffs and Fruitland Coal zones during completion operations. Meridian will consult with the district supervisor of the Aztec NMOCD office for approval of the allocation.

New Mexico Oil Conservation Division  
Mr. Bill LeMay  
Reid #13  
Downhole Commingling Request  
Page Two

Approval of this commingling application will prevent resources from being wasted and protect correlative rights. Included with this letter are plats showing ownership of offsetting leases for both formations, copies of letters to offset operators and the Bureau of Land Management, and a detailed report of fluid compatibility.

If you have any questions concerning this matter please contact Ms. Lori Lantz at (505) 599-4024. Your attention to this matter is greatly appreciated.

Sincerely,

A handwritten signature in black ink, appearing to read "Travis D. Stice".

Travis D. Stice  
Regional Engineer

LLL:III

Attachments

cc: Frank T. Chavez - NMOCD/Aztec  
Peggy Bradfield  
Well File

# **Reid #13**

## **MONTHLY GAS PRODUCTION ALLOCATION FORMULA**

### **GENERAL EQUATION**

$$\mathbf{Q_t = Q_{ftc} + Q_{pc}}$$

WHERE:  $Q_t$  = TOTAL MONTHLY PRODUCTION (MCF/MONTH)  
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$D_{pc}$  = PICTURED CLIFFS MONTHLY DECLINE RATE CALCULATED FROM DECLINE CURVE AND MATERIAL BALANCE ANALYSIS:

$$\mathbf{D_{pc} = (0.00330/M)}$$

THUS:  $Q_{ftc} = Q_t - Q_{pci} \times e^{\{-(0.00330) \times (t)\}}$

WHERE:  $(t)$  IS IN MONTHS

REFERENCE: Thompson, R. S., and Wright, J. D., "Oil Property Evaluation", pages 5-2, 5-3, 5-4.

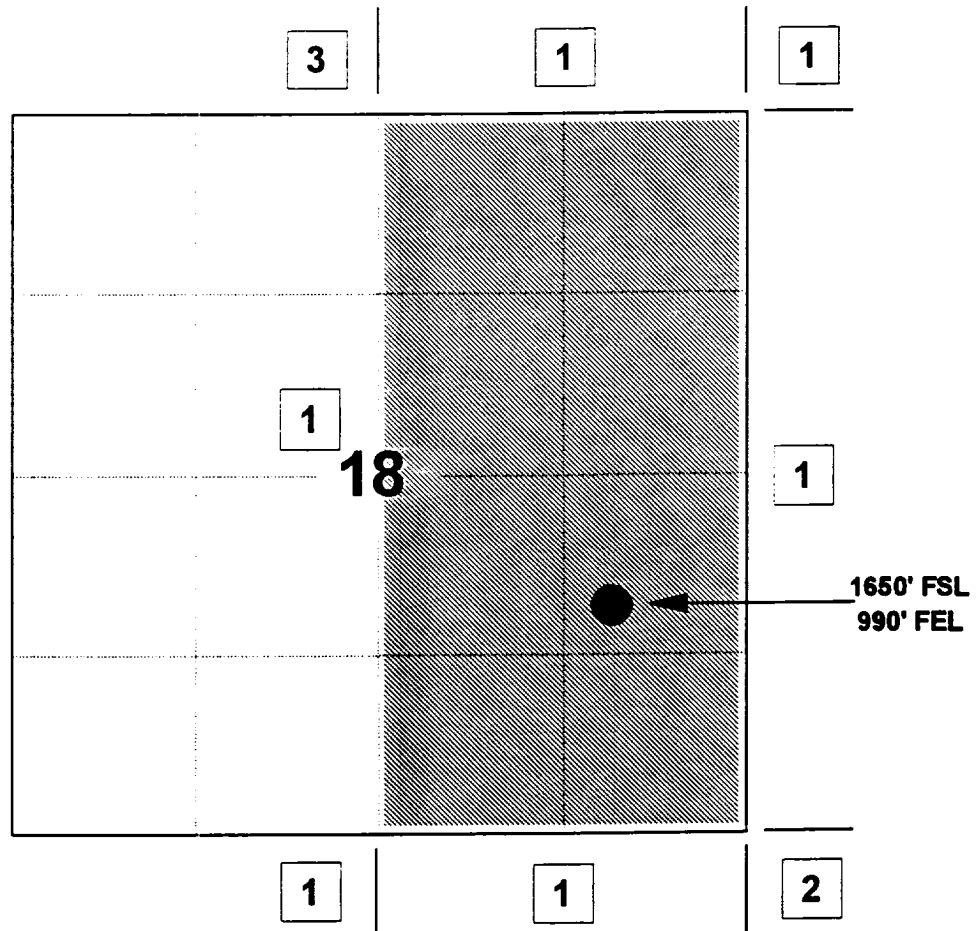
# MERIDIAN OIL INC

## REID #13

### OFFSET OPERATOR \ OWNER PLAT

Unorthodox Fruitland Coal Well Location

Township 28 North, Range 9 West



1) Southland Royalty Company

2) Amoco Production Company

PO Box 800, Denver, CO 80201 &

Conoco, Inc.

10 Desta Dr., Suite 100W, Midland, Tx 79705-4500

3) Southland Royalty Company

&

Conoco, Inc.

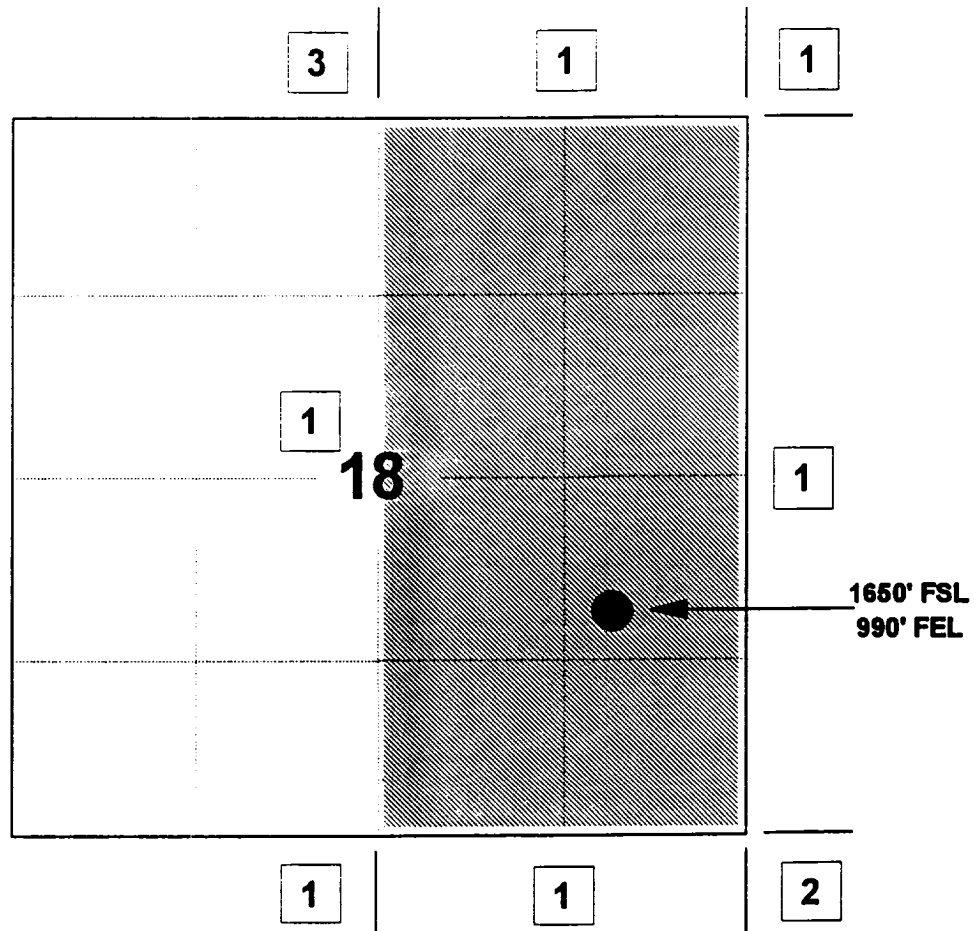
# MERIDIAN OIL INC

## REID #13

### OFFSET OPERATOR \ OWNER PLAT

Fruitland Coal / Pictured Cliffs Commingle Well

Township 28 North, Range 9 West



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PO Box 800, Denver, CO 80201 &

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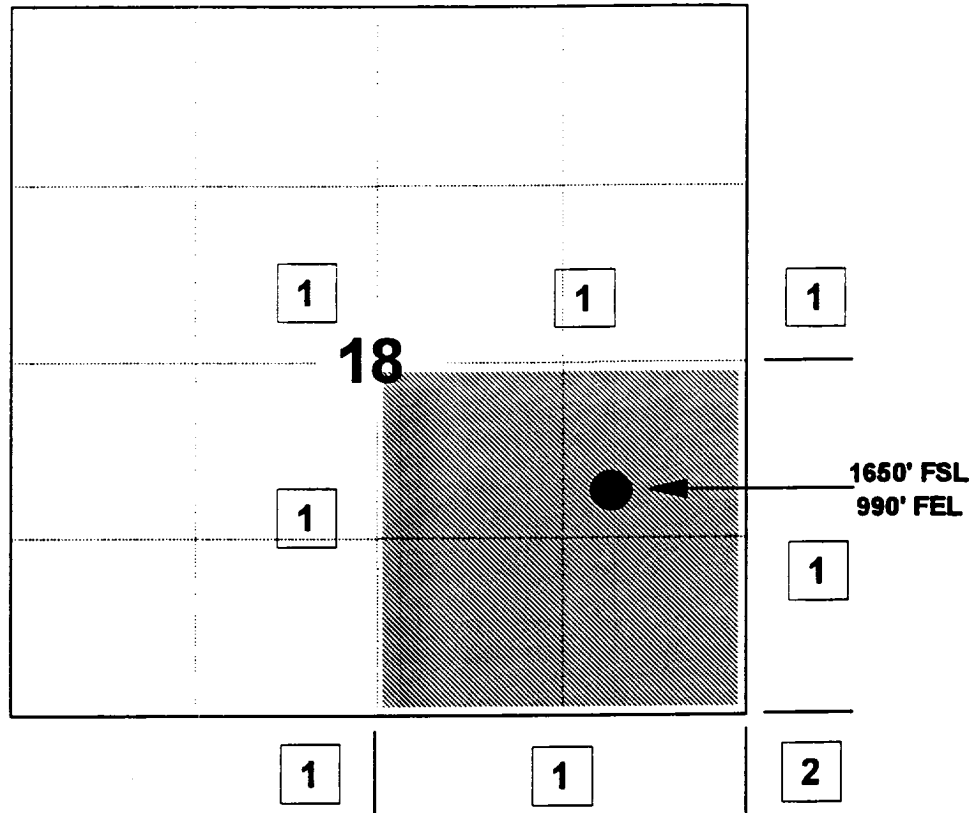
# MERIDIAN OIL INC

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1) Southland Royalty Company

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PO Box 800, Denver, CO 80201 &

Conoco, Inc.

10 Desta Dr., Suite 100W, Midland, Tx 79705-4500

Pictured Cliffs

# MERIDIAN OIL

July 6, 1994

Bureau of Land Management  
1235 La Plata Highway  
Farmington, New Mexico 87401

RE:    **Reid #13**  
          **Unit I, Section 18, T28N, R09W**  
          **San Juan, New Mexico**  
          **Downhole Commingling Request**

Gentlemen:

Meridian Oil Inc. is in the process of applying for a downhole commingling order from the New Mexico Oil Conservation Division (NMOCD) for the referenced well located in San Juan County, New Mexico. The approved application will commingle the Pictured Cliffs and the Fruitland Coal pools.

The purpose of this letter is to notify you of Meridian's application. If you have no objections to the proposed NMOCD commingling order, we would appreciate your signing this letter and returning it to this office.

Your prompt attention to this matter would be appreciated.

Sincerely,



Travis D. Stice  
Regional Engineer

LLL:III

Wavier approval.

\_\_\_\_\_  
Date: \_\_\_\_\_

# MERIDIAN OIL

July 7, 1994

New Mexico Oil Conservation Division  
Attn: Mr. Bill LeMay  
P.O. Box 2088  
310 Old Santa Fe Trail  
Santa Fe, New Mexico

RECEIVED  
JUL 11 1994

RE: Reid #14  
Unit O, Section 7, T28N, R09W  
San Juan, New Mexico  
Downhole Commingling Request

OIL CON. DIV.  
DIST. 3

Dear Mr. LeMay:

Meridian Oil, as operator for the Southland Royalty Company, respectfully requests administrative approval to downhole commingle the Aztec Pictured Cliffs and Basin Fruitland Coal pools in the referenced well. Ownership for the zones to be commingled is common. All offset interest owners shown on the attached plat and the Bureau of Land Management will receive notice of this commingling application.

Precedent for commingling the referenced zones in this area has been established in the Reid #8 (Unit L, Section 19, T28N, R09W) per NMOCD Administrative Order #DHC-856, dated September 3, 1992. This well is producing with no adverse effects from commingling.

The Reid #14 was completed in the Pictured Cliffs in 1959. The well has cumulative production of 308 MMCF. Meridian plans to complete the Fruitland Coal interval and commingle it with the Pictured Cliffs production. A post workover deliverability of 20 MCFD is predicted from the Pictured Cliffs interval.

Based on Fruitland Coal completions in this area, ultimate reserves of 851 MMCF and an initial deliverability of 150 MCFD are estimated for the Fruitland Coal zone in the Reid #14. Currently, the Pictured Cliffs is marginally economic, therefore, the addition of the Fruitland Coal will ensure continued Pictured Cliffs production and prevent resources from being wasted.

The fluids in the two reservoirs are compatible and no precipitates will be formed which could potentially damage either reservoir. The reservoir parameters of each zone are such that underground waste will not be caused by the proposed commingling. Shut-in pressures for the Pictured Cliffs and Fruitland Coal are estimated to be 260 psi and 320 psi, respectively.

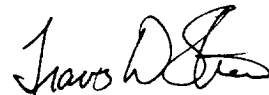
The allocation of the commingled production will be calculated using flow tests from the Pictured Cliffs and Fruitland Coal zones during completion operations. Meridian will consult with the district supervisor of the Aztec NMOCD office for approval of the allocation.

**New Mexico Oil Conservation Division  
Mr. Bill LeMay  
Reid #14  
Downhole Commingling Request  
Page Two**

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Regional Engineer

LLL:III

**Attachments**

cc: Frank T. Chavez - NMOCD/Aztec  
Peggy Bradfield  
Well File

# Reid #14

## MONTHLY GAS PRODUCTION ALLOCATION FORMULA

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$$D_{pc} = (0.00354/M)$$

THUS:  $Q_{ftc} = Q_t - Q_{pci} \times e^{\{-(0.00354) \times (t)\}}$

WHERE: (t) IS IN MONTHS

REFERENCE: Thompson, R. S., and Wright, J. D., "Oil Property Evaluation", pages 5-2, 5-3, 5-4.

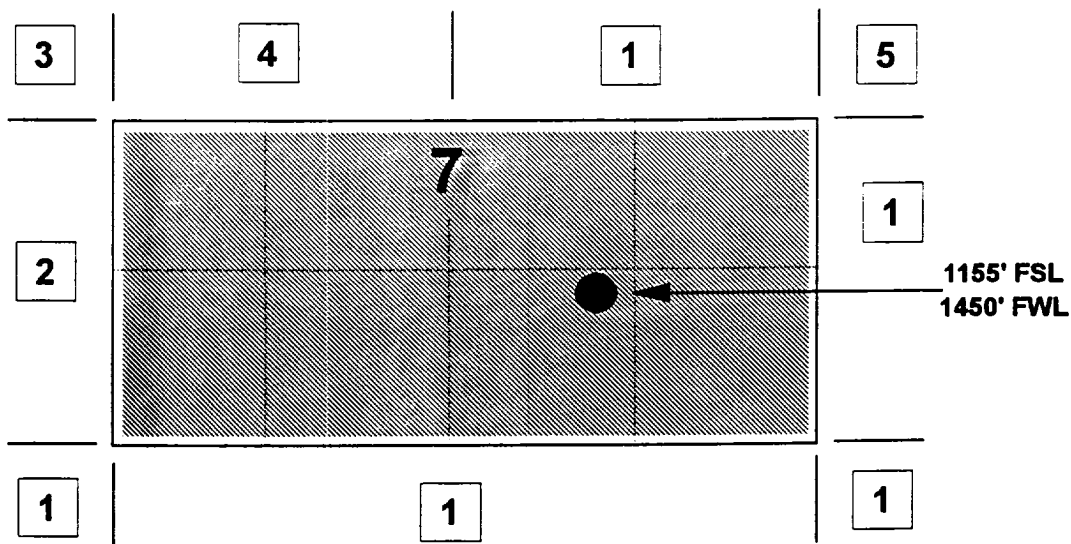
# MERIDIAN OIL INC

REID #14

OFFSET OPERATOR \ OWNER PLAT

Fruitland Coal / Pictured Cliffs Commingle Well

Township 28 North, Range 9 West



1) Southland Royalty Company

2) Southland Royalty Company & Meridian Oil Inc.

3) Meridian Oil Inc. & Conoco, Inc.

4) Conoco, Inc. 10 Desta Dr., Suite 100W, Midland, Tx 79705-4500

5) Southland Royalty Company &

Incline Reserves Inc. 1603 SW 37th St., Topeka, KS 66611

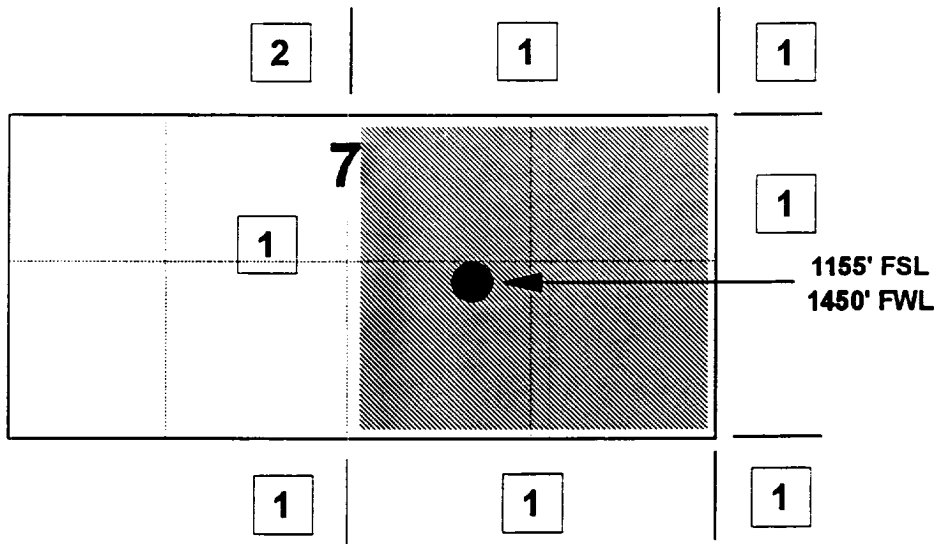
# MERIDIAN OIL INC

## REID #14

### OFFSET OPERATOR \ OWNER PLAT

Fruitland Coal / Pictured Cliffs Formation Commingle Well

Township 28 North, Range 9 West



1) Southland Royalty Company

2) Conoco, Inc.

10 Desta Dr., Suite 100W, Midland, Tx 79705-4500

Pictured Cliffs Formation

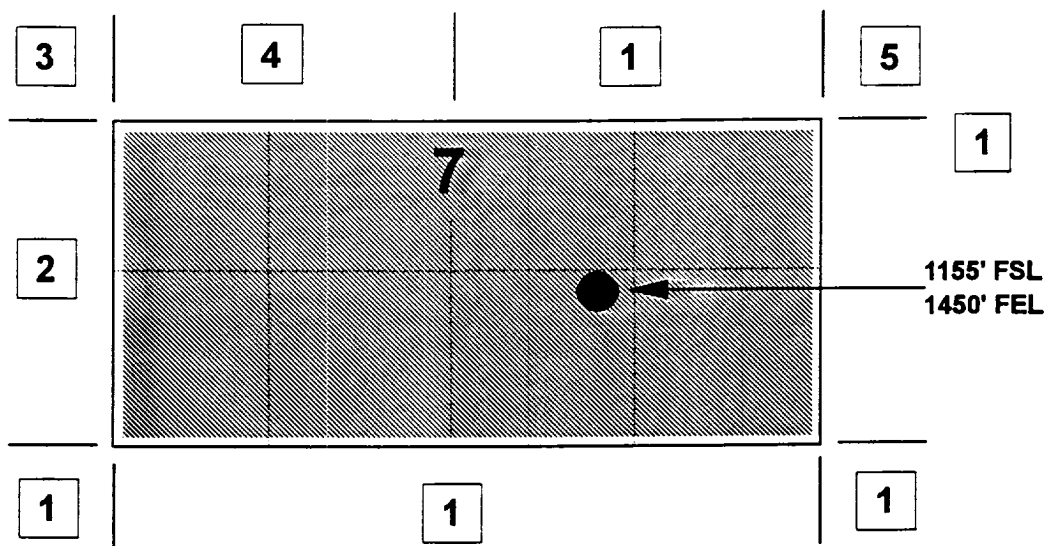
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REID #14

OFFSET OPERATOR \ OWNER PLAT

Unorthodox Fruitland Coal Well Location

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1603 SW 37th St., Topeka, KS 66611



# MERIDIAN OIL

July 6, 1994

Bureau of Land Management  
1235 La Plata Highway  
Farmington, New Mexico 87401

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Regional Engineer

LLL:lll

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\_\_\_\_\_  
Date: \_\_\_\_\_



