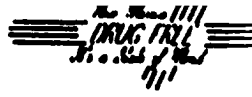




STATE OF NEW MEXICO
 ENERGY, MINERALS and NATURAL RESOURCES DIVISION
 OIL CONSERVATION DIVISION
 AZTEC DISTRICT OFFICE



BRUCE KING
 GOVERNOR

ANITA LOCKWOOD
 CABINET SECRETARY

1000 RIO BRAZOS ROAD
 AZTEC, NEW MEXICO 87410
 (505) 334-6170

Date: 9/21/95

Oil Conservation Division
 P.O. Box 2088
 Santa Fe, NM 87504-2088

RE: Proposed MC _____ Proposed DHC x _____
 Proposed NSL _____ Proposed SWD _____
 Proposed WFX _____ Proposed PMX _____
 Proposed NSP _____ Proposed DD _____

Gentlemen:

I have examined the application received on 9/15/95
 for the Meridian Shays #5
 OPERATOR LEASE & WELL NO.

N-18-28N-8W and my recommendations are as follows:
 UL-S-T-R

Approve

Yours truly,
[Signature]

MERIDIAN OIL

August 14, 1995

New Mexico Oil Conservation Division
Attn: Mr. William LeMay
P. O. Box 2088
310 Old Santa Fe Trail
Santa Fe, New Mexico 87501

RECEIVED
SEP 15 1995
OIL CON. DIV.
DIST. 3

RE: Sharp #5
Unit N, Section 18, T28N, R08W
San Juan County, New Mexico
Downhole Commingling Request

Dear Mr. LeMay:

Meridian Oil Inc. is applying for an administrative downhole commingling order for the referenced well in the Aztec Pictured Cliffs and the Basin Fruitland Coal fields. The ownership of the zones to be commingled is common. The offset operators to this well are Alladin Petroleum Corporation, W. H. Gilmore, West Largo Corporation, Amoco Production Company, S G Interest and Conoco, Inc. The Bureau of Land Management and the above mentioned operators have received notification of this downhole commingle.

The proposed project will recomplete the Fruitland Coal formation in the existing Pictured Cliffs wellbore. Fruitland Coal production will then be commingled with established Pictured Cliffs production. The estimated reserves associated with the Fruitland Coal in this drill block do not economically justify a new drill at this location. The only way to recover Fruitland Coal reserves in this drill block is to downhole commingle Fruitland Coal production with Pictured Cliff production.

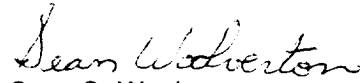
It is proposed to set a bridge plug above the Pictured Cliffs, perforate and stimulate the Fruitland Coal, and test its production. The bridge plug will then be removed, and both zones produced through a single string of tubing. The reservoir characteristics of each of the subject zones are such that underground waste will not be caused by the proposed commingling. Neither producing interval makes oil, and only minimal amounts of similar water are produced in the offset wells. The shut-in pressures for the Pictured Cliffs and Fruitland Coal are **225** and **400** psi, respectively.

The allocation of the commingled production will be calculated using the attached allocation formula. This formula is based on historical production performance of the Sharp #5, and uses accepted Reservoir Engineering methods to allocate the Pictured Cliffs reserves. This addresses the Fruitland Coal producing characteristics of early life inclining production rates.

New Mexico Oil Conservation Division
Mr. William LeMay
Sharp #5
Downhole Commingling Request
Page Two

Approval of this commingling application will allow for the prevention of wasted resources and protection of correlative rights. Precedent for commingling the referenced intervals in this area has been established in the Hardie D #3 (Unit M, Section 14, T28N, R08W) per NMOCD Administrative Order #DHC-827, dated October 28, 1991. Included with this letter are plats showing ownership of offsetting leases for both the Pictured Cliffs and Fruitland Coal, a copy of letters to the BLM and offset operators, an allocation formula, and Production History Curve for the Sharp #5 (PC).

Sincerely,


Sean C. Woolverton
Production Engineer

SCW:tdj

Attachments

cc: Frank T. Chavez - NMOCD/Aztec
Bureau of Land Management - Farmington
MOI Regulatory Agent/P. Bradfield
Well File
FTC Team File

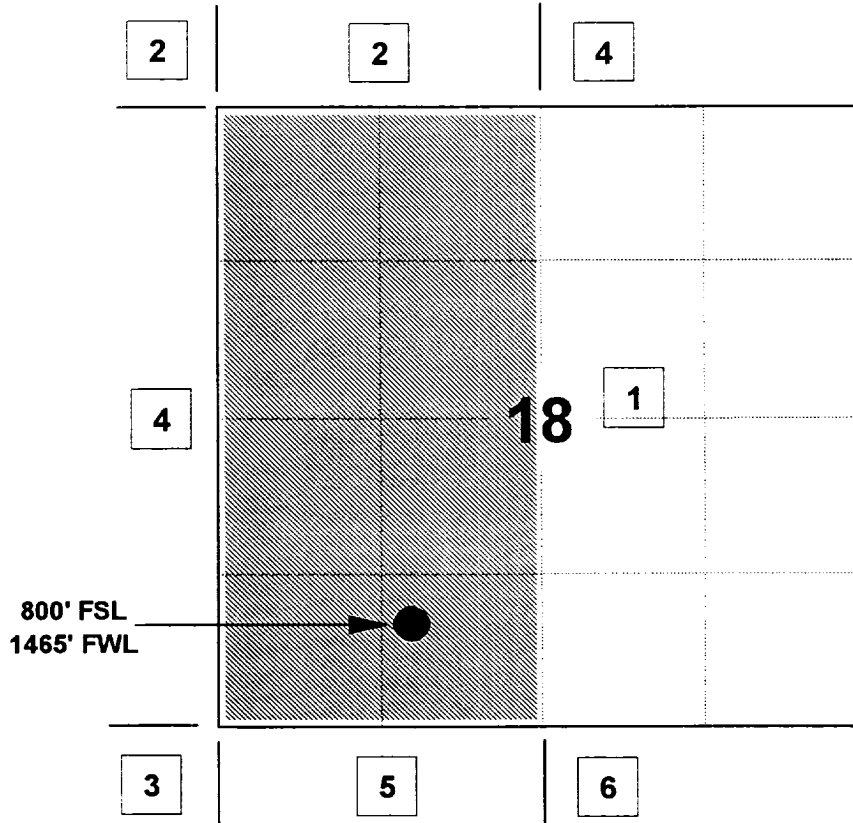
MERIDIAN OIL INC

SHARP #5

OFFSET OPERATOR \ OWNER PLAT

Fruitland Coal / Pictured Cliffs Formations Commingle Well

Township 28 North, Range 8 West



1) Meridian Oil Inc

2) Meridian Oil Inc., Southland Royalty Company &

Alladin Petroleum Corp.

809 Petroleum Building, Wichita, KS 67202

W H Gilmore

403 North Marienfield St, Midland, TX 79701

West Largo Corp

6638 W Ottawa Ave, Suite 100, Littleton, CO 80123

3) Amoco Production Company

PO Box 800, Denver, CO 80201

4) West Largo Corp

5) S G Interest

811 Dallas, Suite 1505, Houston, TX 77002

6) Amoco Production Company &

Conoco, Inc.

10 Desta Drive, Suite 100W, Midland, TX 79705

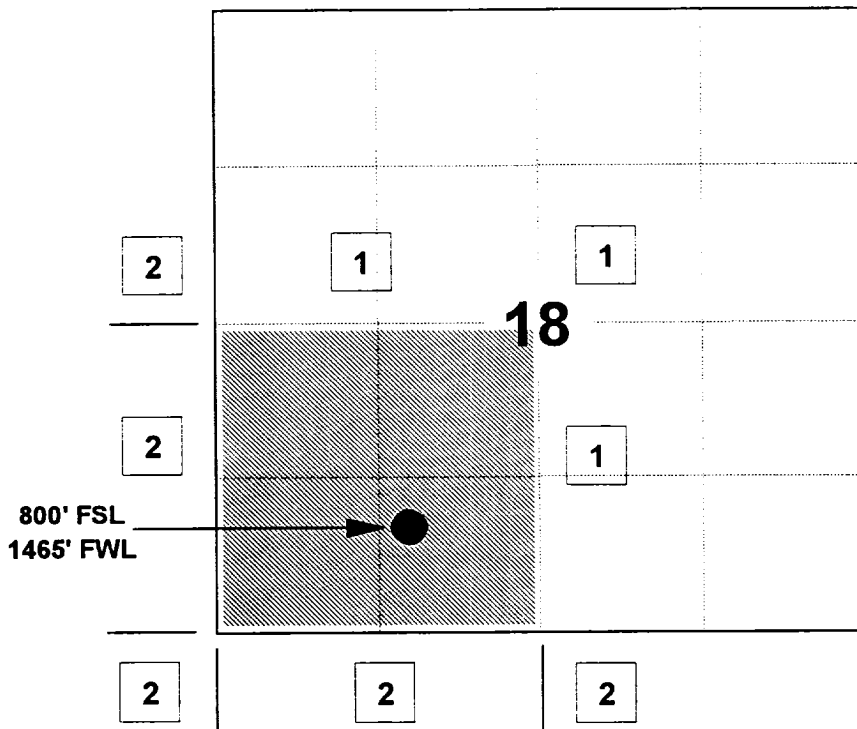
MERIDIAN OIL INC

SHARP #5

OFFSET OPERATOR \ OWNER PLAT

Fruitland Coal / Pictured Cliffs Formations Commingle Well

Township 28 North, Range 8 West



1) Meridian Oil Inc

2) Amoco Production Company

PO Box 800, Denver, CO 80201

MERIDIAN OIL

August 14, 1995

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

RE: Sharp #5
Unit N, Section 18, T28N, R08W
San Juan County, 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 Aztec Pictured Cliffs and the Basin Fruitland Coal fields.

The purpose of this letter is to notify you of Meridian's application. If you have no objections to the NMOCD issuing a commingling order, we would appreciate your signing this letter and returning the original to Mr. LeMay at the following address with a copy to this office:

New Mexico Oil Conservation Division
Mr. William LeMay
P.O. Box 2088
Santa Fe, New Mexico 87501

Your prompt attention to this matter would be appreciated.

Sincerely,



Sean C. Woolverton
Production Engineer

SCW/tdj

**The undersigned hereby waives objection to the referenced
Downhole Commingling Request.**

Company/Owner: _____

Title: _____

Date: _____

MERIDIAN OIL

August 14, 1995

Alladin Petroleum Corporation
809 Petroleum Building
Wichita, Kansas 67202

RE: Sharp #5
Unit N, Section 18, T28N, R08W
San Juan County, New Mexico
Downhole Commingling Request

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Santa Fe, New Mexico 87501

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Sincerely,



Sean C. Woolverton
Production Engineer

SCW/tdj

**The undersigned hereby waives objection to the referenced
Downhole Commingling Request.**

Company/Owner: _____

Title: _____

Date: _____

MERIDIAN OIL

August 14, 1995

W. H. Gilmore
403 North Marienfield Street
Midland, Texas 79701

RE: Sharp #5
Unit N, Section 18, T28N, R08W
San Juan County, New Mexico
Downhole Commingling Request

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Santa Fe, New Mexico 87501

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Sincerely,


Sean C. Woolverton
Production Engineer

SCW/tdj

**The undersigned hereby waives objection to the referenced
Downhole Commingling Request.**

Company/Owner: _____

Title: _____

Date: _____

MERIDIAN OIL

August 14, 1995

West Largo Corporation
6638 W Ottawa Avenue
Suite 100
Littleton, Colorado 80123

RE: Sharp #5
Unit N, Section 18, T28N, R08W
San Juan County, New Mexico
Downhole Commingling Request

Gentlemen:

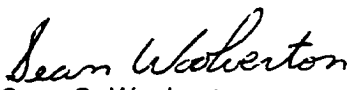
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Mr. William LeMay
P.O. Box 2088
Santa Fe, New Mexico 87501

Your prompt attention to this matter would be appreciated.

Sincerely,


Sean C. Woolverton
Production Engineer

SCW/tdj

**The undersigned hereby waives objection to the referenced
Downhole Commingling Request.**

Company/Owner: _____

Title: _____

Date: _____

MERIDIAN OIL

August 14, 1995

Amoco Production Company
P.O. Box 800
Denver, Colorado 80201

RE: Sharp #5
Unit N, Section 18, T28N, R08W
San Juan County, 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 Aztec Pictured Cliffs and the Basin Fruitland Coal fields.

The purpose of this letter is to notify you of Meridian's application. If you have no objections to the NMOCD issuing a commingling order, we would appreciate your signing this letter and returning the original to Mr. LeMay at the following address with a copy to this office:

New Mexico Oil Conservation Division
Mr. William LeMay
P.O. Box 2088
Santa Fe, New Mexico 87501

Your prompt attention to this matter would be appreciated.

Sincerely,



Sean C. Woolverton
Production Engineer

SCW/tdj

**The undersigned hereby waives objection to the referenced
Downhole Commingling Request.**

Company/Owner: _____

Title: _____

Date: _____

MERIDIAN OIL

August 14, 1995

S G Interest
811 Dallas
Suite 1505
Houston, Texas 77002

RE: Sharp #5
Unit N, Section 18, T28N, R08W
San Juan County, New Mexico
Downhole Commingling Request

Gentlemen:


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Mr. William LeMay
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Santa Fe, New Mexico 87501

Your prompt attention to this matter would be appreciated.

Sincerely,


Sean C. Woolverton
Production Engineer

SCW/tdj

**The undersigned hereby waives objection to the referenced
Downhole Commingling Request.**

Company/Owner: _____

Title: _____

Date: _____

MERIDIAN OIL

August 14, 1995

Conoco, Inc.
10 Desta Drive
Suite 100W
Midland, Texas 79705

RE: Sharp #5
Unit N, Section 18, T28N, R08W
San Juan County, 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 Aztec Pictured Cliffs and the Basin Fruitland Coal fields.

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Mr. William LeMay
P.O. Box 2088
Santa Fe, New Mexico 87501

Your prompt attention to this matter would be appreciated.

Sincerely,


Sean C. Woolverton
Production Engineer

SCW/tdj

**The undersigned hereby waives objection to the referenced
Downhole Commingling Request.**

Company/Owner: _____

Title: _____

Date: _____

SHARP #5
MONTHLY GAS PRODUCTION ALLOCATION FORMULA

GENERAL EQUATION

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

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} :

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

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:

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

WHERE: Q_{pci} = INITIAL PC MONTHLY FLOW RATE (OBTAINED FROM SHARP #5 PRODUCTION HISTORY)
 D_{pc} = PICTURED CLIFFS MONTHLY DECLINE RATE CALCULATED FROM:
 $D_{pc} = (Q_{pci} - Q_{pcabd}) / N_{p(pc)}$
See Determination of Q_{pci} and PC Estimated Ultimate Recovery ($N_{p(pc)}$)
 $Q_{pci} = 4075$ MCF/M; $Q_{pcabd} = 300$ MCF/M; $N_{p(pc)} = 1336$ MMCF

WHERE: $N_{p(pc)}$ = PICTURED CLIFFS ESTIMATED REMAINING RESERVES (EUR)
 $N_{p(pc)}$ = DETERMINED FROM PRODUCTION PERFORMANCE (DECLINE CURVE ANALYSIS) (REMAINING RESERVES = 1336 MMCF).

FRUITLAND COAL (FTC) FORMATION PRODUCTION FORMULA IS:

$$: \quad Q_{ftc} = Q_t - Q_{pci} \times e^{-\{D_{pc} \times (t)\}}$$

WHERE: (t) IS IN MONTHS

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

SHARP #5

DETERMINATION OF:

(a) Q_{pci}
(b) D_{pc}

INITIAL PC MONTHLY FLOW RATE
PC MONTHLY DECLINE RATE

(a) DETERMINATION OF Q_{pci}

ATTACHED IS A COPY OF THE PICTURED CLIFFS PRODUCTION HISTORY FOR THE SHARP #5. THE EXPECTED INITIAL PRODUCTION FOR THE PICTURED CLIFFS ESTIMATED FROM THIS PLOT IS 3650 MCF/M.

$$\underline{Q_{pci} = 4,075 \text{ MCF/M}}$$

(b) DETERMINATION OF D_{pc}

$$D_{pc} = (Q_{pci} - Q_{pcabd})/N_p(pc)$$

$$Q_{pcabd} = 300 \text{ MCF/M}$$
$$N_p(pc) = 1335.9 \text{ MMCF}$$

$$D_{pc} = (4,075 \text{ MCF/M} - 300 \text{ MCF/M}) / (1,335,900 \text{ MCF})$$

$$\underline{D_{pc} = 0.0028/M}$$

$$\underline{\text{THUS: } Q_{ftc} = Q_t(\text{MCF/M}) - 4,075(\text{MCF/M}) \times e^{-\{-(0.0028(1/M)) \times t(M)\}}$$

