RELEASE 9·13·93

MERIDIAN OIL

August 17, 1993

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

RE: Jicarilla 96 #6A
NW/4, Section 2, T26N, R03W
Rio Arriba 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 Gavilan Pictured Cliffs and the Blanco Mesaverde fields. The ownership of 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.

The Jicarilla 96 #6A is currently producing from the Mesaverde interval at an average daily rate of 252 MCFD. The Pictured Cliffs interval is not completed in the well. Six offset wells completed in the Pictured Cliffs produced an average rate of 25 MCFD per well. It is uneconomic to develop the Pictured Cliffs with a new wellbore based on the offset production rates. The only economical way to develop the Pictured Cliffs reserves is by commingling in the existing Mesaverde producer.

It is proposed to set a bridge plug above the Mesaverde, perforate and stimulate the Pictured Cliffs, 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. The fluids in the two reservoirs are compatible and no precipitates will be formed to cause damage to either reservoir (see attached fluid analyses and compatibility tests). The shut-in pressure for the Mesaverde and Pictured Cliffs are **553** and **452** psi, respectively.

The allocation of the commingled production will be calculated using flow tests from the Mesaverde and Pictured Cliffs during workover operations, and the previously established Mesaverde Production history. Meridian will consult with the district supervisor of the Aztec NMOCD office for approval of the allocation.

Approval of this commingling application will allow for the prevention of wasted resources and the protection of correlative rights. The Mesaverde and Pictured Cliffs are commingled in two other wells in this township as per NMOCD Order #'s R-5350 and R-6004, dated January 17, 1977 and May 2, 1979, respectively. Both of these wells are producing with no adverse affects from the commingling. 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.

Sincerely,

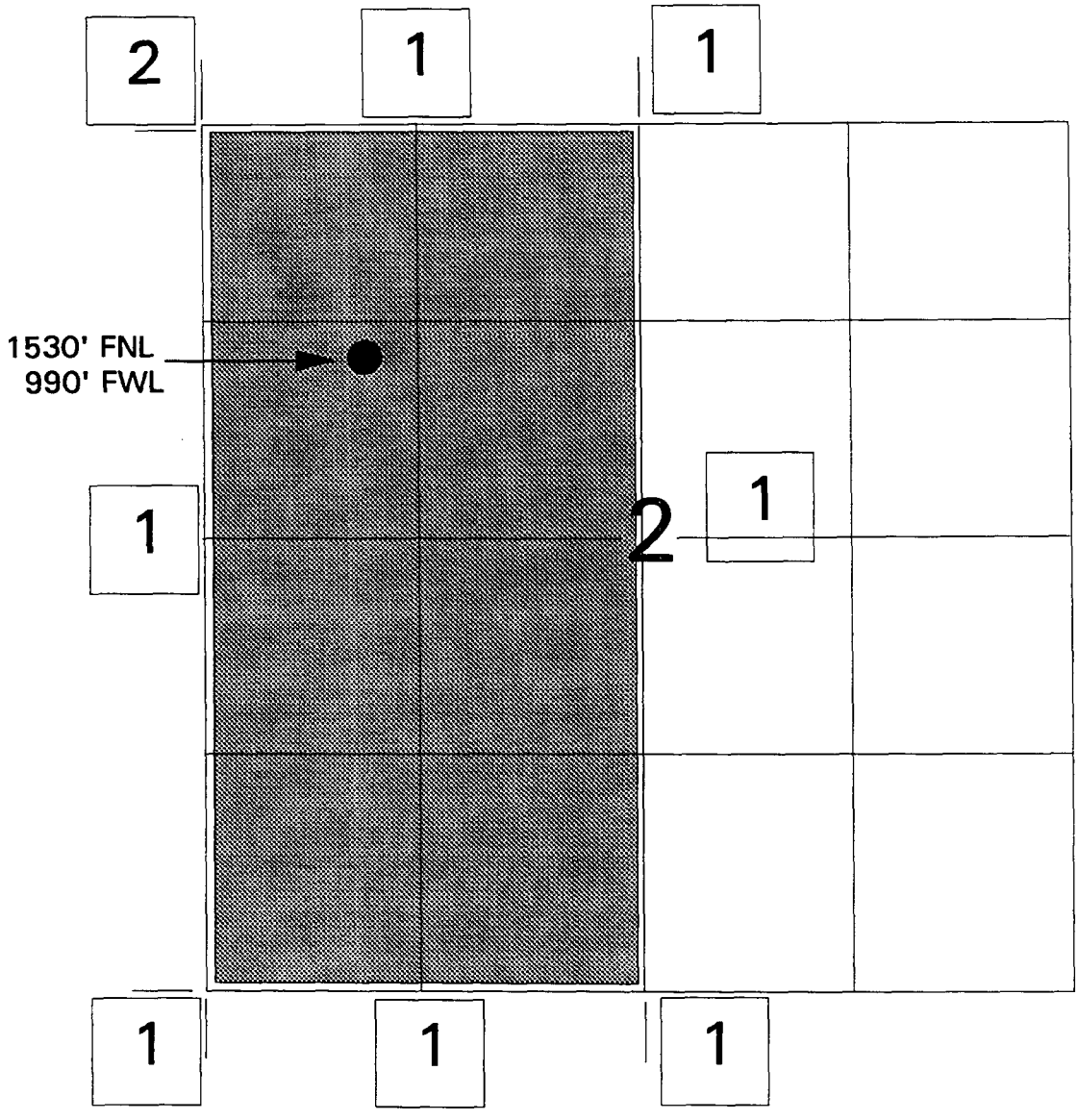
Arden L. Walker, Jr.
Regional Production Engineer

LKS:tg
Attachments

cc: Frank T. Chavez - NMOCD/Aztec

MERIDIAN OIL INC.

OFFSET OPERATOR/OWNER PLAT
Pictured Cliffs (NW/4) /Mesaverde (W/2)
Commingle
JICARILLA 96 #6A
Township 26 North, Range 3 West
Rio Arriba County, New Mexico



Pictured Cliffs/Mesaverde Offset Ownership

1) Meridian Oil Inc., 3535 East 30th St., P.O. Box 4289, Farmington, New Mexico 87499-4289.

2) Northwest Pipeline Corp., P.O. Box 58900, Salt Lake City, Utah 84158-0900

MERIDIAN OIL

August 17, 1993

Northwest Pipeline Corp.
P.O. Box 58900
Salt Lake City, Utah 84158-0900

RE: Jicarilla 96 #6A
NW/4, Section 2, T26N, R03W
Rio Arriba County, New Mexico
Downhole Commingling Request

Gentlemen:

Meridian Oil, Inc. is in the process of applying for a downhole commingling order for the Jicarilla 96 #6A well located in NW/4, Section 2, T26N, R03W, N.M.P.M., Rio Arriba County, New Mexico, in the Blanco Mesaverde and the Gavilan Pictured Cliffs fields.

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

Your prompt attention to this matter would be appreciated.

Yours truly,

Les K. Smith
Reservoir Engineering

LKS/tg

The above downhole commingling request is hereby approved:

_____

Date: _____

MERIDIAN OIL

August 17, 1993

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

RE: Jicarilla 96 #6A
NW/4, Section 2, T26N, R03W
Rio Arriba County, New Mexico
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Les K. Smith
Reservoir Engineering

LKS/tg

The above downhole commingling request is hereby approved:

_____

Date: _____

Meridian Oil Inc., 3535 East 30th St., P.O. Box 4289, Farmington, New Mexico 87499-4289, Telephone 505-326-9700

MERIDIAN OIL

JICARILLA 98 AND 96 LEASE
RIO ARRIBA COUNTY, NM
MESA VERDE/PICTURED CLIFFS FORMATION

The Western Company

LABORATORY INVESTIGATION

PREPARED FOR

LESLEY K. SMITH
SR. RESERVOIR ENGINEER

SERVICE POINT
FARMINGTON, NM
(505) 327-6222

PREPARED BY
LOREN DIEDE / DAVE COLESON

FARMINGTON

MARCH 25, 1993

FM020658

March 25, 1993

Meridian Oil
Jicarilla 96 #2
Jicarilla 95 #5

Three samples from Jicarilla 96 #2 (1 oil, 2 water) and two samples from Jicarilla 98 #5 (2 condensates) were submitted for analysis on March 19, 1993 by Mr. Lesley K. Smith, Senior Reservoir Engineer for Meridian Oil.

These samples were to be analyzed to determine if commingling of each of the well products would have adverse efforts on well production.

Samples submitted were:

1. Jicarilla 96 #2
   a. Mesa Verde oil
   b. Mesa Verde water
   c. Pictured Cliffs water

2. Jicarilla 98 #5
   a. Mesa Verde condensate
   b. Pictured Cliffs condensate

Lab analysis performed:

1. Oil, condensate analysis
   a. API gravity
   b. Pour point
   c. Cloud point

2. Water analysis
   a. API water analysis

3. Observation and analysis of commingled oil, condensate and water as applicable for well.

Meridian Oil
Jicarilla 96 #2

Result of Analysis:
Pictured Cliffs produced water

ph	:	7.12
Resistivity	:	1.65
Sp. Gr.	:	1.00

Cations

Sodium & Potassium	1601	mg/ l (calc.)
Calcium	48	mg/ l
Magnesium	5	mg/ l (calc.)

Anions

Chloride	2061	mg / l
Sulfate	0	mg / l
Bicarbonate	976	mg / l

Total dissolved solids 4691

Mesa Verde produced water

ph	:	6.52
Resistivity	:	3.70
Sp. Gr.	:	1.005

Cations

Sodium & Potassium	922	mg/ l (calc.)
Calcium	40	mg/ l
Magnesium	5	mg/ l (calc.)

Anions

Chloride	1649	mg / l
Sulfate	0	mg / l
Bicarbonate	850	mg / l

Total dissolved solids 3466

Meridian Oil
Jicarilla 96 #2

Mesa Verde produced oil

Appearance	:	Light, amber oil
API gravity @ 60 degrees F	:	58.2
Cloud point	:	0 degrees C
Pour point	:	< -10 degrees C

Pictured Cliffs / Mesa Verde produced water
Combined (using high shear) with Mesa Verde produced oil (50:50 mix of waters and oil).

Appearance	:	Cloudy, amber emulsion
Separation	:	Beginning on cessation of shear
Precipitation	:	None observed
Separation @ time	:	At 1 hour - complete

Summary of results:

No precipitation or other observed adverse reaction from combined waters or from combination of the oil and waters.

Analysis forms follow.

Analysis done by: Dave Coleson
Dave Coleson

Meridian Oil
Jicarilla 98 #5

Results of analysis:
Pictured Cliffs produced condensate:

Appearance	:	Light, clear oil
API gravity @ 60 degrees F	:	61.3 @ 60 degrees F
Cloud point	:	< -8 degree C
Pour point	:	< -8 degrees C

Mesa Verde produced condensate:

Appearance	:	Light, clear liquid
API gravity @ 60 degrees F	:	62.6 @ 60 degrees F
Cloud point	:	< -8 degree C
Pour point	:	< -8 degrees C

Commingled Pictured Cliffs and Mesa Verde condensates:

Appearance	:	Light, clear liquid
API gravity @ 60 degrees F	:	59.6 @ 60 degrees F
Cloud point	:	< -8 degree C
Pour point	:	< -8 degrees C

Summary of results:

The mixture of the two condensates displayed no adverse reaction regarding precipitation of solids.

Analysis forms follow:

Analysis done by: DAVE COLESON
Dave Coleson

ANALYSIS NO. S11393

FIELD RECEIPT NO. _____

3/22/93

API FORM 45-1

API WATER ANALYSIS REPORT FORM

Company MERIDIAN		Sample No.	Date Sampled 3/8/93
Field	Legal Description T26N R10W N, SEC 2	County or Parish SAN JUAN	State NM
Lease or Unit A	Well C 96 #2	Depth	Formation FRUITLAND COAL	Water, B/D
Type of Water (Produced, Supply, etc.) PRODUCED	Sampling Point		Sampled By

DISSOLVED SOLIDS

CATIONS	mg/l	me/l
Sodium, Na (calc.)	1601	69.6
Calcium, Ca	48	2.4
Magnesium, Mg	5	0.4
Barium, Ba		

ANIONS		
Chloride, Cl	2061	58
Sulfate, SO_4	—	—
Carbonate, CO_3	—	—
Bicarbonate, HCO_3	176	1.6

Total Dissolved Solids (calc.) 4691

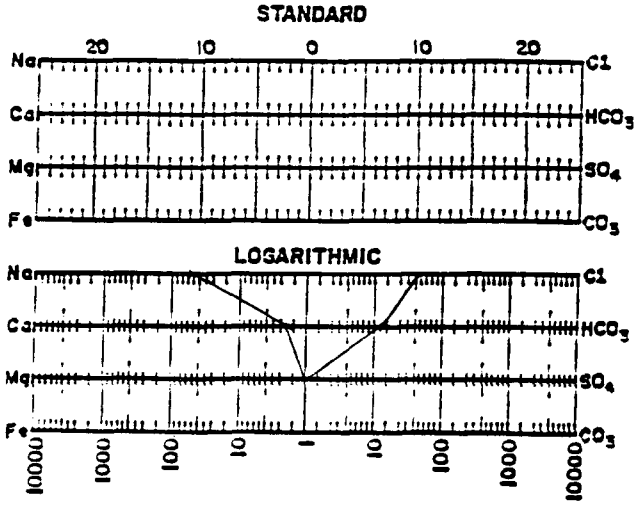
Iron, Fe (total) —

Sulfide, as H_2S —

OTHER PROPERTIES

pH	7.12
Specific Gravity, 60/60 F.	1.00
Resistivity (ohm-meters) 75° F.	1.65
TOTAL HARDNESS	140

WATER PATTERNS — me/l



REMARKS & RECOMMENDATIONS:

ANALYST: DC

PLEASE REFER ANY QUESTIONS TO:

THE WESTERN CO. OF NORTH AMERICA
FARMINGTON, N.M.
LOREN L. DIEDE
(505) 327-6222

ANALYSIS NO. 511493

FIELD RECEIPT NO. _____

API FORM 45-1

API WATER ANALYSIS REPORT FORM

Company		Sample No.	Date Sampled
MERIDIAN			3/8/93
Field	**Legal Description**	**County or Parish**	**State**
	T26NR02W, SEC 2	RIO ARRIBA	NM
Lease or Unit	**Well**	**Depth**	**Formation**	**Water, B/D**
A	JIC 91-2		MESA VERDE	
Type of Water (Produced, Supply, etc.)	**Sampling Point**	**Sampled By**
PRODUCED		

DISSOLVED SOLIDS

CATIONS	mg/l	me/l
Sodium, Na (calc.)	914	41
Calcium, Ca	40	20
Magnesium, Mg	5	2
Barium, Ba		

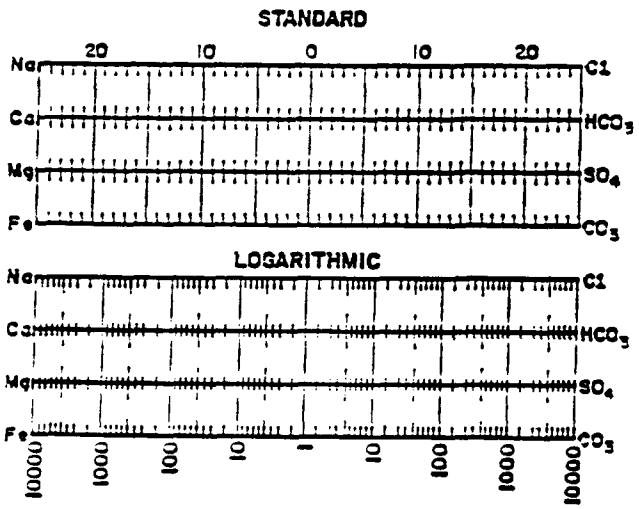
ANIONS		
Chloride, Cl	1,240	35
Sulfate, SO_4	—	—
Carbonate, CO_3	—	—
Bicarbonate, HCO_3	1940	32

Total Dissolved Solids (calc.)	3204
Iron, Fe (total)	—
Sulfide, as H_2S	—

OTHER PROPERTIES

pH	6.52
Specific Gravity, 60/60 F.	1.002
Resistivity (ohm-meters) 44° F.	3.7
TOTAL HARDNESS	120

WATER PATTERNS — me/l



REMARKS & RECOMMENDATIONS:

ANALYST: DC

PLEASE REFER ANY QUESTIONS TO:

THE WESTERN CO. OF NORTH AMERICA
FARMINGTON, N.M.
LOREN L. DIEDE
(505) 327-6222

ANALYSIS NO. S1 1573

FIELD RECEIPT NO. _____

API FORM 45-1

API WATER ANALYSIS REPORT FORM

Company		Sample No.	Date Sampled
MERIDIAN			3/8/93
Field	**Legal Description**	**County or Parish**	**State**
	T26N R03W, SEC 2	RIO ARRIBA	NM
Lease or Unit	**Well**	**Depth**	**Formation**	**Water, B/D**
	16 #6-2		DC/MV	
Type of Water (Produced, Supply, etc.)	**Sampling Point**	**Sampled By**

DISSOLVED SOLIDS

CATIONS	mg/l	me/l
Sodium, Na (calc.)	22	01
Calcium, Ca	40	20
Magnesium, Mg	—	12
Barium, Ba		

ANIONS		
Chloride, Cl	469	13.2
Sulfate, SO_4	—	—
Carbonate, CO_3	—	—
Bicarbonate, HCO_3	732	12

Total Dissolved Solids (calc.) 2466

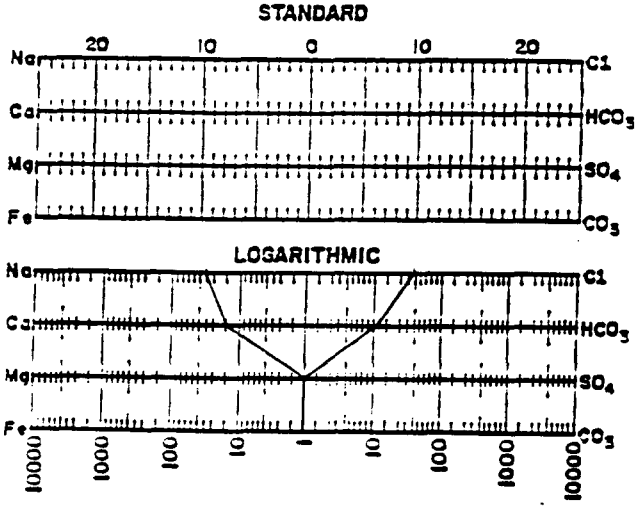
Iron, Fe (total) —

Sulfide, as H_2S —

OTHER PROPERTIES

pH	7.29
Specific Gravity, 60/60 F.	1.005
Resistivity (ohm-meters) 70° F.	2.2
CALC HARDNESS	120

WATER PATTERNS — me/l



REMARKS & RECOMMENDATIONS:

ANALYST: DC

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THE WESTERN CO. OF NORTH AMERICA
FARMINGTON, N.M.
LOREN L. DIEDE
(505) 327-6222

Date 3/22/93
1111 31 93

Rocky Mountain Region

THE WESTERN COMPANY

Oil Analysis

Operator _____ Date Sampled 3.8.93

Well JIC 96-02 Date Received MAR 18 93

Field _____ Submitted By _____

Formation MESA VERDE Worked By DC

Depth _____ Sample Description _____

County RIO ARRIBA LIGHT, AMBER LIQUID

State N.M. _____

API Gravity 58.2 ° at 60°F

Paraffin Content _____ % by weight

Asphaltene Content _____ % by weight

Pour Point _____ °F

Cloud Point _____ °F

Comments:
56.8 @ 46 °F

Analyst _____

P.O. Drawer 360 • Farmington, N.M. 87499

Date 3/22/93
M130 93

Rocky Mountain Region

THE WESTERN COMPANY

Oil Analysis

Operator _____ Date Sampled 3/8/93

Well Jic 98-5 Date Received 3/19/93

Field _____ Submitted By _____

Formation PICTURED CLIFFS Worked By K O

Depth _____ Sample Description _____

County RIO ARRIBA CLEAR, LIGHT LIQUID

State NM _____

API Gravity 61.3° at 60°F

Paraffin Content _____% by weight

Asphaltene Content _____% by weight

Pour Point _____°F

Cloud Point _____°F

Comments:

59.9 @ 44°

Analyst _____

P.O. Drawer 360 • Farmington, N.M. 87499

Date 3/22/93
M13893

Rocky Mountain Region

THE WESTERN COMPANY

Oil Analysis

Operator _____ Date Sampled 3/8/93

Well JIC 98 -5 Date Received 3/19/93

Field _____ Submitted By _____

Formation MESA VERDE Worked By TC

Depth _____ Sample Description _____

County RIO ARRIBA CLEAR LIQUID

State NM _____

API Gravity 62.6 ° at 60°F

Paraffin Content _____ % by weight

Asphaltene Content _____ % by weight

Pour Point _____ °F

Cloud Point _____ °F

Comments:

61 @ 46° F

Analyst _____

P.O. Drawer 360 • Farmington, N.M. 87499

Date 3/24/93
11/32/93

Rocky Mountain Region

THE WESTERN COMPANY

Oil Analysis

Operator MERIDIAN
Well JIC 98-5
Field
Formation MV/PC
Depth
County RIO ARRIBA
State NM

Date Sampled 3/8/93
Date Received
Submitted By
Worked By DC
Sample Description
BOTH CLEAR & LIGHT

API Gravity 59.6° at 60°F

Paraffin Content _____% by weight

Asphaltene Content _____% by weight

Pour Point _____°F

Cloud Point _____°F

Comments:
60.5 @ 68°F
CLEAR LIQUID - REMAINED CLEAR & NO PRECIPITATION

Analyst

P.O. Drawer 360 • Farmington, N.M. 87499