

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

RECEIVED

FEB - 3 1994

OIL CON. DIV  
DIST. 3

ADMINISTRATIVE ORDER DHC-977

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

Attention: Arden L. Walker, Jr.

*Thompson "C" Well No. 7*

*~~Unit L, Section 3, Township 27 North, Range 12 West, NMPM,~~  
San Juan County, New Mexico.*

*Basin-Fruitland Coal and West Kutz-Pictured Cliffs Gas Pools*

Dear Mr. Walker:

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 West Kutz-Pictured Cliffs Gas Pool.

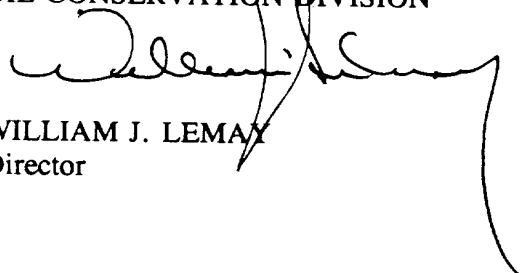
The operator is responsible for reporting the monthly gas production from the subject well to the Division utilizing the allocation formula adopted herein. An annual report shall be submitted by the operator to both the Aztec and Santa Fe offices of the Division showing the complete computations for 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 1st day of February, 1994.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION



WILLIAM J. LEMAY  
Director

S E A L

WJL/DRC/amg

cc: Oil Conservation Division - Aztec  
US Bureau of Land Management - Farmington

# THOMPSON C #7

## 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.

ICTURED CLIFFS (PC) FORMATION PRODUCTION FORMULA IS:

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

WHERE:  $Q_{pci}$  = INITIAL PC MONTHLY FLOW RATE = 750 MCF/M (DETERMINED FROM TESTED RATE AGAINST 75 PSI LINE PRESSURE AS OPPOSED TO HISTORICAL LINE PRESSURE OF 175 PSI)  
 $D_{pc}$  = PICTURED CLIFFS MONTHLY DECLINE RATE CALCULATED FROM DECLINE CURVE AND MATERIAL BALANCE ANALYSIS:

$$D_{pc} = (0.0015/M)$$

THUS:  $Q_{ftc} = Q_t - Q_{pci} \times e^{-\{(0.0015) \times (t)\}}$

WHERE: (t) IS IN MONTHS

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

---



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

1000 RIO BRAZOS ROAD  
AZTEC, NEW MEXICO 87410  
(505) 334-6178

Date: 1-21-94

*Attn: Ben Stone*

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

RE: Proposed MC \_\_\_\_\_  
Proposed NSL \_\_\_\_\_  
Proposed WFX \_\_\_\_\_  
Proposed NSP \_\_\_\_\_

Proposed DHC X \_\_\_\_\_  
Proposed SWD \_\_\_\_\_  
Proposed PMX \_\_\_\_\_  
Proposed DD \_\_\_\_\_

Gentlemen:

I have examined the application received on 1-7-94  
for the Meridian Oil Inc. Thompson C #7  
OPERATOR LEASE & WELL NO.

L-3-27N-12W and my recommendations are as follows:  
UL-S-T-R

Approve

Yours truly,

*Frank B. Smith*

# MERIDIAN OIL

January 5, 1994

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



RE: Thompson C #7  
Unit L, Section 03, T27N, R12W  
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 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 Louis Dreyfus Natural Gas Corporation and Amoco Production Company. The Bureau of Land Management and the above mentioned operators have received notification of this downhole commingling.

The Fruitland Coal and Pictured Cliffs wells producing in this area operated by Meridian and others are marginally productive. Based on offset production in this area, drilling of separate wells and dual completions to produce the Fruitland Coal and Pictured Cliffs are not economically justified. The only economical way to recover the Fruitland Coal and Pictured Cliffs reserves in this drill block is to downhole commingle production from both zones in this well.

The Pictured Cliffs formation is currently completed and marginally productive. 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 240 and 320 psi, respectively.

The allocation of the commingled production will be calculated using the attached allocation formula. This formula is based on offset Pictured Cliffs production performance (material balance), 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.

*[Faint, illegible markings]*

New Mexico Oil Conservation Division  
Mr. Bill LeMay  
Thompson C #7  
Downhole Commingling Request  
Page Two

Approval of this commingling application will allow for the prevention of wasted resources and protection of correlative rights. 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 the offset operators, and an allocation formula.

Sincerely,



Arden L. Walker, Jr.  
Regional Production Engineer

SBD:tdg  
Attachments

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

**RECEIVED**  
JAN 07 1994  
OIL CON. DIV.  
LDHLS

# MERIDIAN OIL

January 5, 1994

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

RE: Thompson C #7  
Unit L, Section 03, T27N, R12W  
San Juan County, New Mexico  
Downhole Commingling Request

Gentlemen:

Meridian Oil, Inc. is in the process of applying for a downhole commingling order for the Thompson C #7 well located in Unit L, Section 03, T27N, R12W, N.M.P.M., San Juan County, New Mexico, in the Pictured Cliffs and the Basin Fruitland Coal 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.

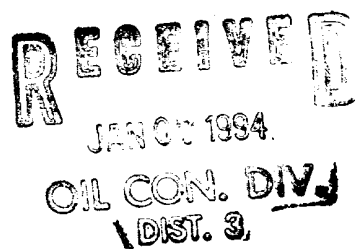
Yours truly,

*S.B. Daves*  
Scott B. Daves  
Production Engineer

SBD/tdg

The above downhole commingling request is hereby approved:

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





# MERIDIAN OIL

January 5, 1994

BHP Petroleum  
5847 San Felipe  
Suite 3600  
Houston, Texas 77057

RE: Thompson C #7  
Unit L, Section 03, T27N, R12W  
San Juan County, New Mexico  
Downhole Commingling Request

Gentlemen:

Meridian Oil, Inc. is in the process of applying for a downhole commingling order for the Thompson C #7 well located in Unit L, Section 03, T27N, R12W, N.M.P.M., San Juan County, New Mexico, in the Pictured Cliffs and the Basin Fruitland Coal 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,

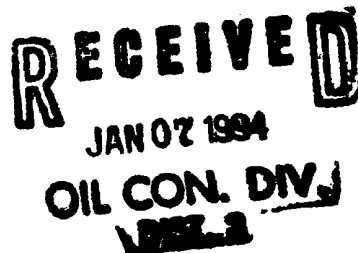


Scott B. Daves  
Production Engineer

SBD/tdg

The above downhole commingling request is hereby approved:

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



929130

100-100000

100-100000  
100-100000

# MERIDIAN OIL

January 5, 1994

Louis Dreyfus Natural Gas Corp.  
1400 Quail Springs Parkway  
Suite 1400  
Oklahoma City, Oklahoma 73134

RE: Thompson C #7  
Unit L, Section 03, T27N, R12W  
San Juan County, New Mexico  
Downhole Commingling Request

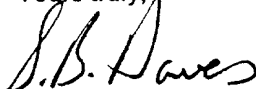
Gentlemen:

Meridian Oil, Inc. is in the process of applying for a downhole commingling order for the Thompson C #7 well located in Unit L, Section 03, T27N, R12W, N.M.P.M., San Juan County, New Mexico, in the Pictured Cliffs and the Basin Fruitland Coal 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,

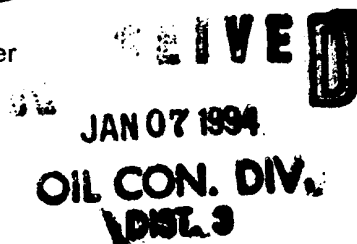


Scott B. Daves  
Production Engineer

SBD/tdg

The above downhole commingling request is hereby approved:

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



003

31

100

100

100

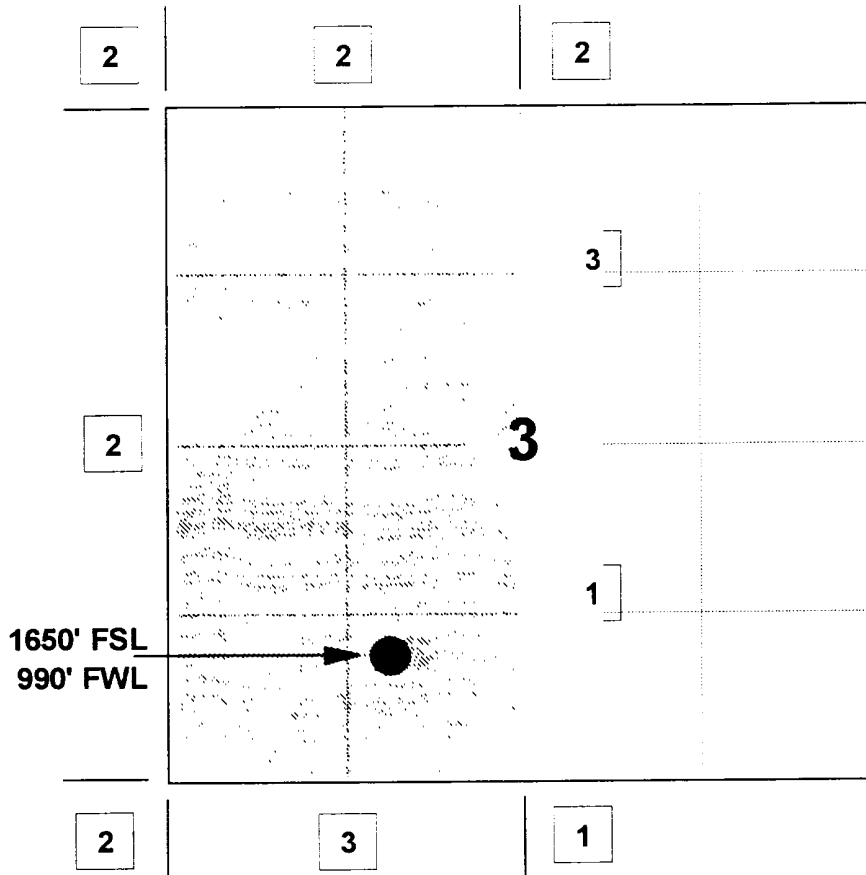
# MERIDIAN OIL INC

## THOMPSON C #7

OFFSET OPERATOR \ OWNER PLAT

Fruitland Coal / Pictured Cliffs Commingle Well

Township 27 North, Range 12 West



1) Meridian Oil Inc

2) BHP Petroleum 5847 San Felipe, Suite 3600, Houston, TX 77057

3) Louis Dreyfus Natural Gas Corp. 1400 Quail Springs Pkwy, Ste 1400, Oklahoma City, OK 73134

---

---

---

---

---

---

---

---

Fruitland Coal Formation

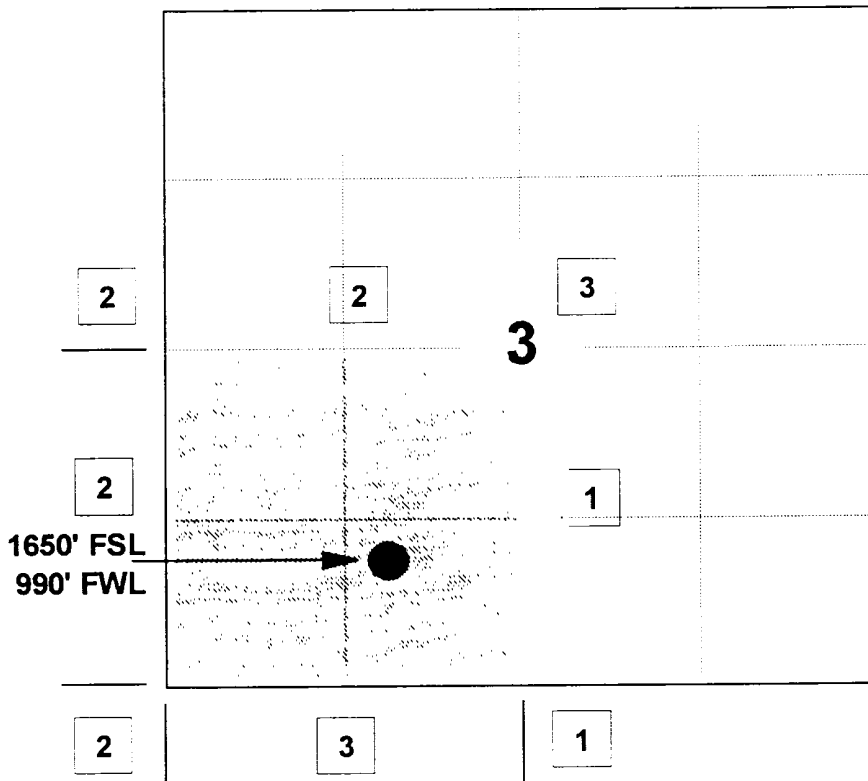
# MERIDIAN OIL INC

## THOMPSON C #7

OFFSET OPERATOR \ OWNER PLAT

Fruitland Coal / Pictured Cliffs Commingle Well

Township 27 North, Range 12 West



**RECEIVED**  
JAN 07 1994  
OIL CON. DIV.  
DIST. 3

1) Meridian Oil Inc

2) BHP Petroleum

5847 San Felipe, Suite 3600, Houston, TX 77057

3) Louis Dreyfus Natural Gas Corp. 1400 Quail Springs Pkwy, Ste 1400, Oklahoma City, OK 73134

---

---

---

---

---

---

---

Pictured Cliffs Formation

# THOMPSON C #7

## 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:

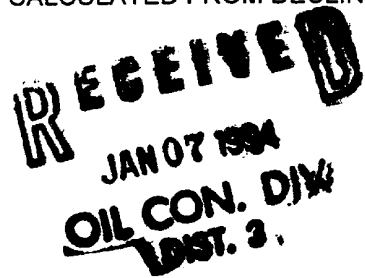
$$Q_{pc} = Q_{pci} \times e^{-\{D_{pc} \times (t)\}}$$

WHERE:  $Q_{pci}$  = INITIAL PC MONTHLY FLOW RATE = 750 MCF/M (DETERMINED FROM TESTED RATE AGAINST 75 PSI LINE PRESSURE AS OPPOSED TO HISTORICAL LINE PRESSURE OF 175 PSI)  
 $D_{pc}$  = PICTURED CLIFFS MONTHLY DECLINE RATE CALCULATED FROM DECLINE CURVE AND MATERIAL BALANCE ANALYSIS:  
 $D_{pc} = (0.0015/M)$

THUS:  $Q_{ftc} = Q_t - Q_{pci} \times e^{-\{(0.0015) \times (t)\}}$

WHERE: (t) IS IN MONTHS

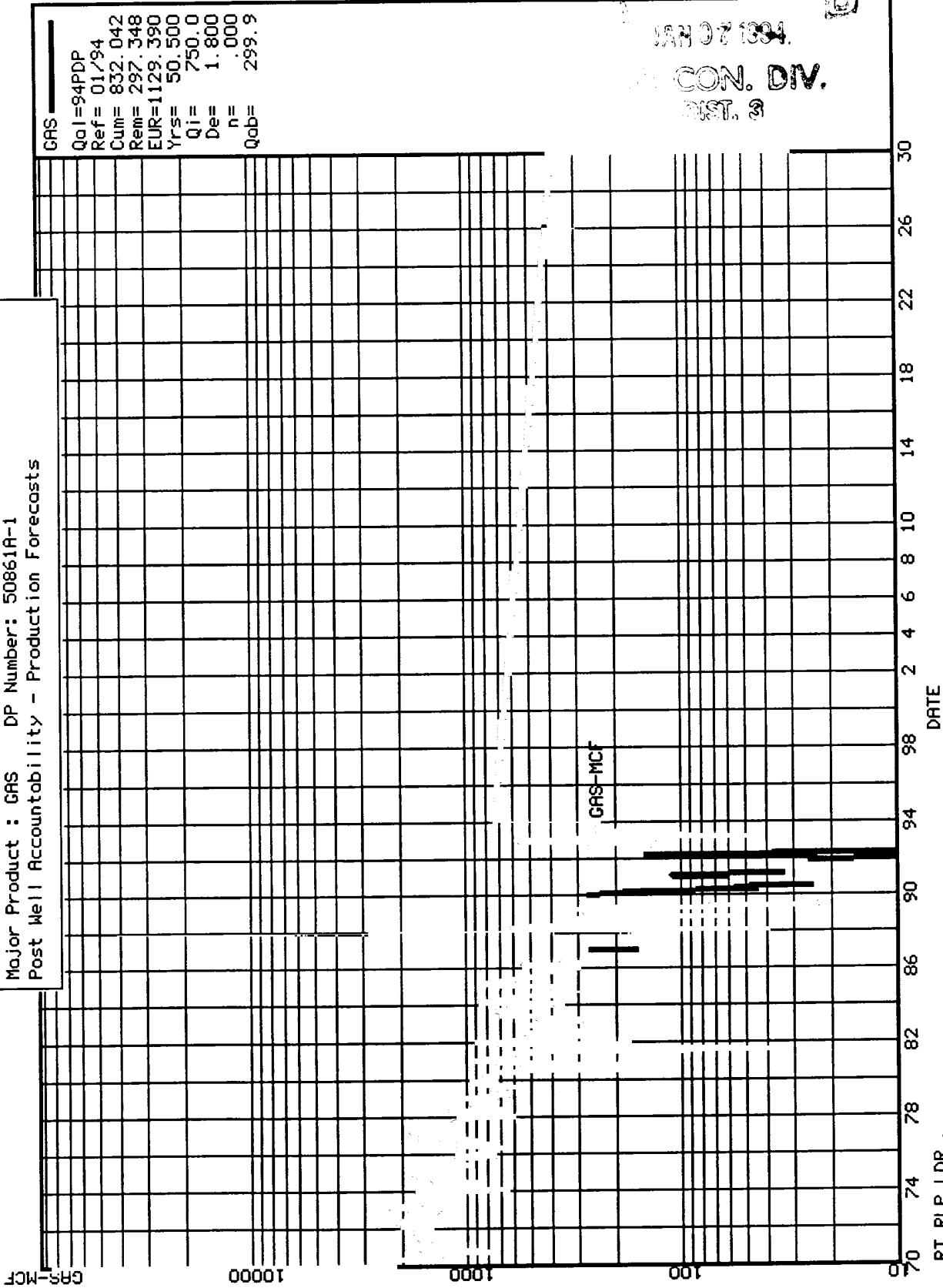
REFERENCE: Thompson, R. S., and Wright, J. D., "Oil Property Evaluation", pages 5-2, 5-3, 5-4.



100-100-100



Lease : THOMPSON C 7  
 Field : KUTZ PICTURED CLIFFS WEST (GAS)  
 Location : 027N012W03L  
 County, St : SAN JUAN NM  
 Major Product : GAS DP Number: 50861A-1  
 Post Well Accountability - Production Forecasts



GAS  
 Qal=94PDP  
 Ref= 01/94  
 Cum= 832.042  
 Rem= 297.348  
 EUR=1129.390  
 Yrs= 50.500  
 Qi= 750.0  
 De= 1.800  
 n= .000  
 Qab= 299.9

JAN 07 1994

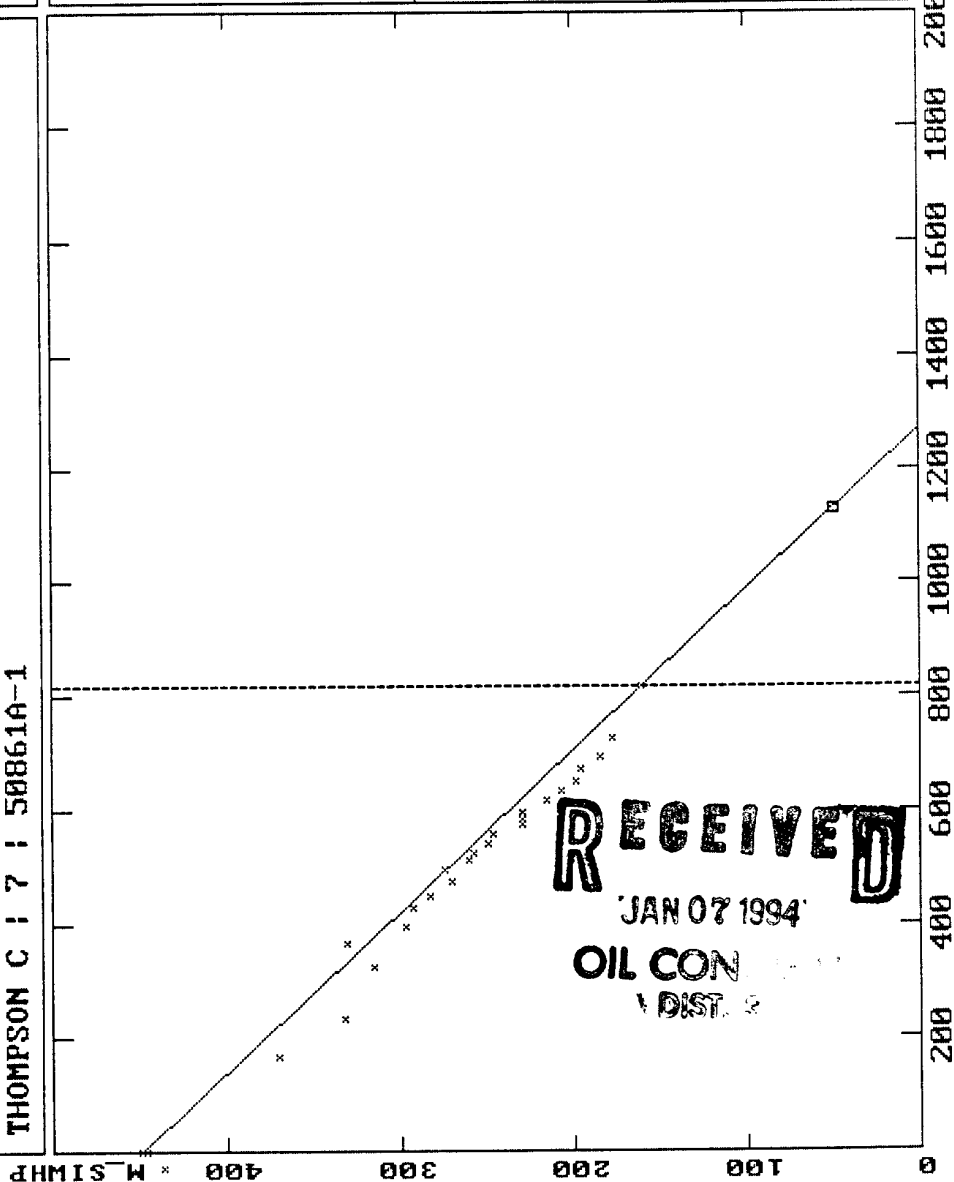
CON. DIV.  
 DIST. 3

RT RLP LDR,  
 =963.155MMCF,  
 RLP EPNG LP SYS,  
 MLL,RT,  
 PZ EUR = 1,129.39 MMCF @50psi abd  
 pz eur = 987.968 mmcf @100psi abd

THOMPSON C : 7 : 50861A-1

Prop: 20

Qa1=94PDP  
GIP=1270.813  
EUR=1129.390  
PZa= 50.0



CUM\_GAS-MMcf

M\_SIWHP-Psi