

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

-07629



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-972

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

Attention: Arden L. Walker, Jr.

Zachry Well No. 13

*~~Union County, New Mexico~~ 23 North, Range 10 West, NMPM,
San Juan County, New Mexico.*

Aztec-Pictured Cliffs and Basin-Fruitland Coal 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 Aztec-Pictured Cliffs interval.

Administrative Order DHC-972

Meridian Oil, Inc.

January 28, 1994

Page 2

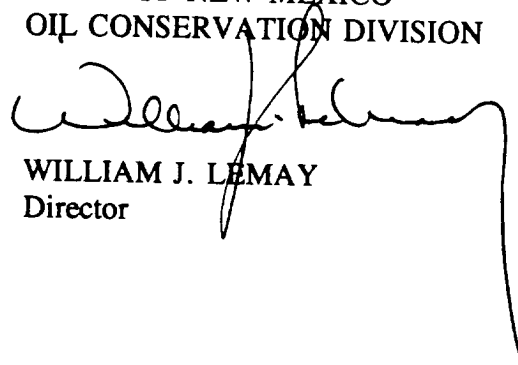
The operator is responsible for reporting the monthly gas production from the subject well to the Division utilizing the allocation formula adopted herein. An annual report shall be submitted by the operator to both the Aztec and Santa Fe office of the Division showing the complete computations for the 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 28th day of January, 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

ZACHRY #13

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 (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:

$$D_{pc} = (0.00252/M)$$

THUS: $Q_{ftc} = Q_t - Q_{pci} \times e^{-\{(0.00252) \times (t)\}}$

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 1-4-94
for the Meridian Oil Inc. ZACHRY #13
OPERATOR LEASE & WELL NO.

N-33-29N-10W and my recommendations are as follows:
UL-S-T-R

Approve

Yours truly,

David Busch

MERIDIAN OIL

December 29, 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: Zachry #13
Unit N, Section 33, T29N, R10W
San Juan County, New Mexico
Downhole Commingling Request

RECEIVED
JAN 04 1994
OIL CON. DIV.
DIST. 3

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 S G Interests, Horace F. McKay, Jr., Texaco Exploration and Production, Inc. and Amoco Production Company. The Bureau of Land Management and the above mentioned operators have received notification of this downhole commingle.

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 282 and 337 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.

New Mexico Oil Conservation Division
Mr. Bill LeMay
Zachry #13
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,

A handwritten signature in black ink, appearing to read "S.L. Daves for".

Arden L. Walker, Jr.
Regional Production Engineer

SBD:tdg
Attachments

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

MERIDIAN OIL

December 29, 1993

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

RE: Zachry #13
Unit N, Section 33, T29N, R10W
San Juan County, New Mexico
Downhole Commingling Request

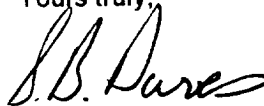
Gentlemen:

Meridian Oil, Inc. is in the process of applying for a downhole commingling order for the Zachry #13 well located in Unit N, Section 33, T29N, R10W, 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: _____

MERIDIAN OIL

December 29, 1993

Texaco Exploration & Production, Inc.
PO Box 2100
Denver, Colorado 80202

RE: Zachry #13
Unit N, Section 33, T29N, R10W
San Juan County, New Mexico
Downhole Commingling Request

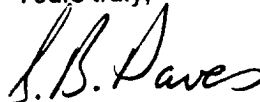
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Yours truly,



Scott B. Daves
Production Engineer

SBD/tdg

The above downhole commingling request is hereby approved:

Date: _____

MERIDIAN OIL

December 29, 1993

Amoco Production Company
PO Box 800
Denver, Colorado 80201

RE: Zachry #13
Unit N, Section 33, T29N, R10W
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 Zachry #13 well located in Unit N, Section 33, T29N, R10W, N.M.P.M., San Juan County, New Mexico, in the Pictured Cliffs and the Basin Fruitland Coal fields.

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Yours truly,



Scott B. Daves
Production Engineer

SBD/tdg

The above downhole commingling request is hereby approved:

Date: _____

MERIDIAN OIL

December 29, 1993

S G Interests
811 Dallas
Suite 1505
Houston, Texas 77002

RE: Zachry #13
Unit N, Section 33, T29N, R10W
San Juan County, New Mexico
Downhole Commingling Request

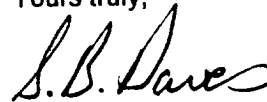
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Yours truly,



Scott B. Daves
Production Engineer

SBD/tdg

The above downhole commingling request is hereby approved:

Date: _____

MERIDIAN OIL

December 29, 1993

Horace F. McKay, Jr.
PO Box 14738
Albuquerque, New Mexico 87191

RE: Zachry #13
Unit N, Section 33, T29N, R10W
San Juan County, New Mexico
Downhole Commingling Request

Gentlemen:

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Scott B. Daves
Production Engineer

SBD/tdg

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Date: _____

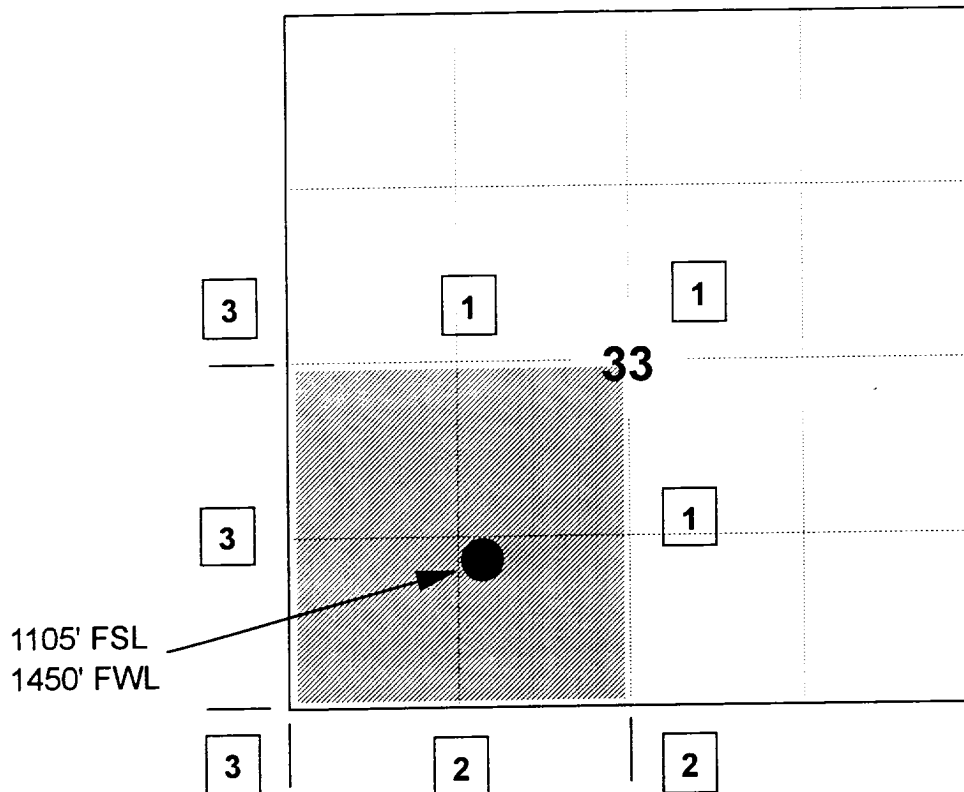
MERIDIAN OIL INC

ZACHERY #13

OFFSET OPERATOR PLAT

Fruitland Coal \ Pictured Cliffs Comingle Well

Township 29 North, Range 10 West



1) Meridian Oil Inc

2) Southland Royalty Company

3) Texaco Exploration & Production, Inc. PO Box 2100, Denver, CO 80202

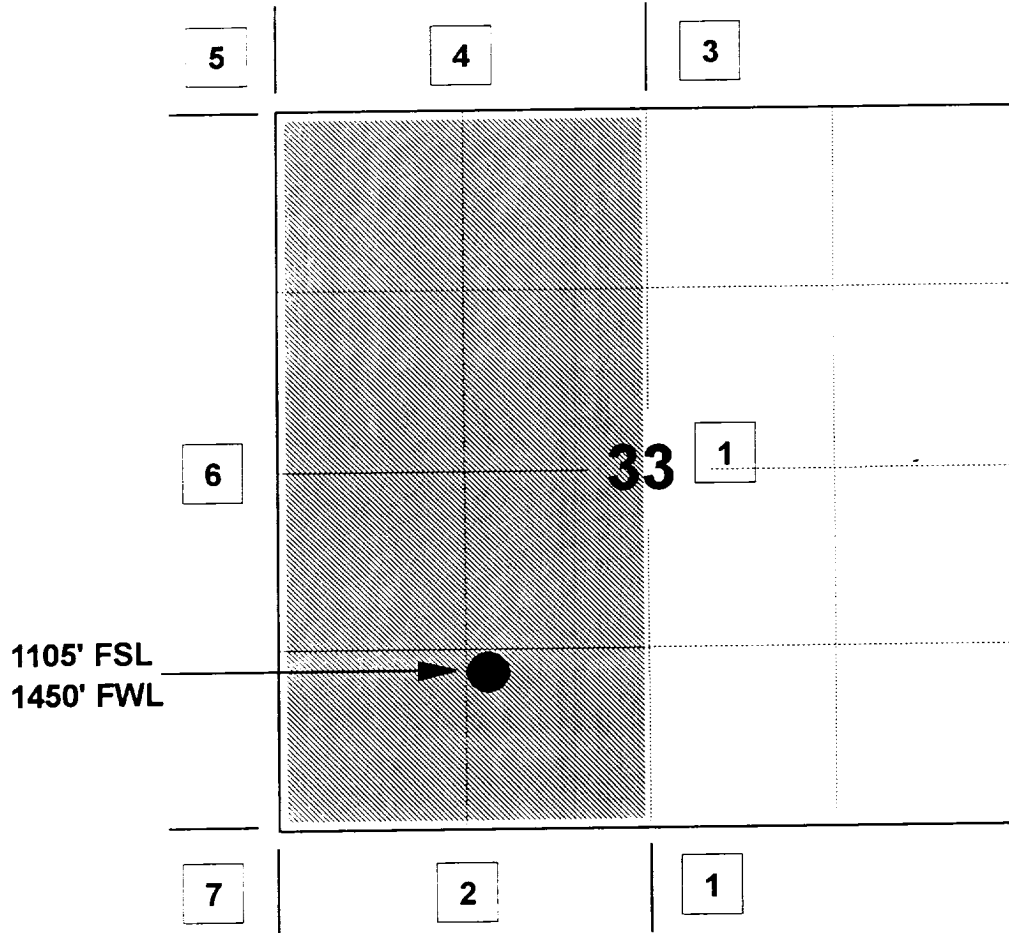
MERIDIAN OIL INC

ZACHERY #13

OFFSET OPERATOR \ OWNER PLAT

Fruitland Coal / Pictured Cliffs Commingle Well

Township 29 North, Range 10 West



1) Meridian Oil Inc

2) Southland Royalty Company

3) Amoco Production Company

PO Box 800, Denver, CO 80201

4) S G Interests

811 Dallas, Suite 1505, Houston, TX 77002

5) Horace F. McKay, Jr.

PO Box 14738, Albuquerque, NM 87191,

Amoco Production Company & S G Interests

6) Texaco Exploration & Production, Inc.

PO Box 2100, Denver, CO 80202 &

S G Interests

7) Southland Royalty Company & Texaco Exploration & Production, Inc.

ZACHRY #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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PICTURED CLIFFS (PC) FORMATION PRODUCTION FORMULA IS:

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

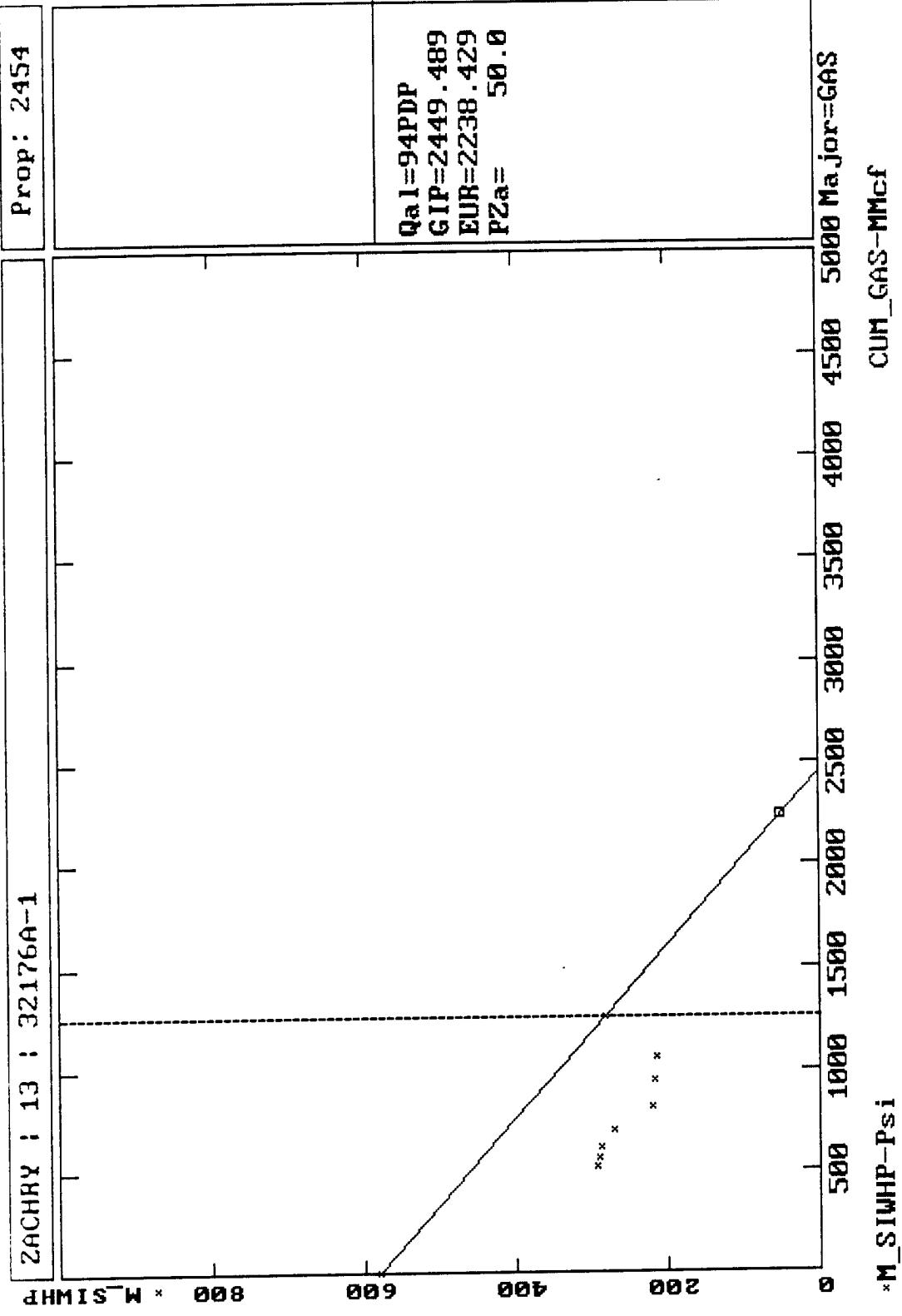
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THUS: $Q_{ftc} = Q_t - Q_{pci} \times e^{\{-(0.00252) \times (t)\}}$

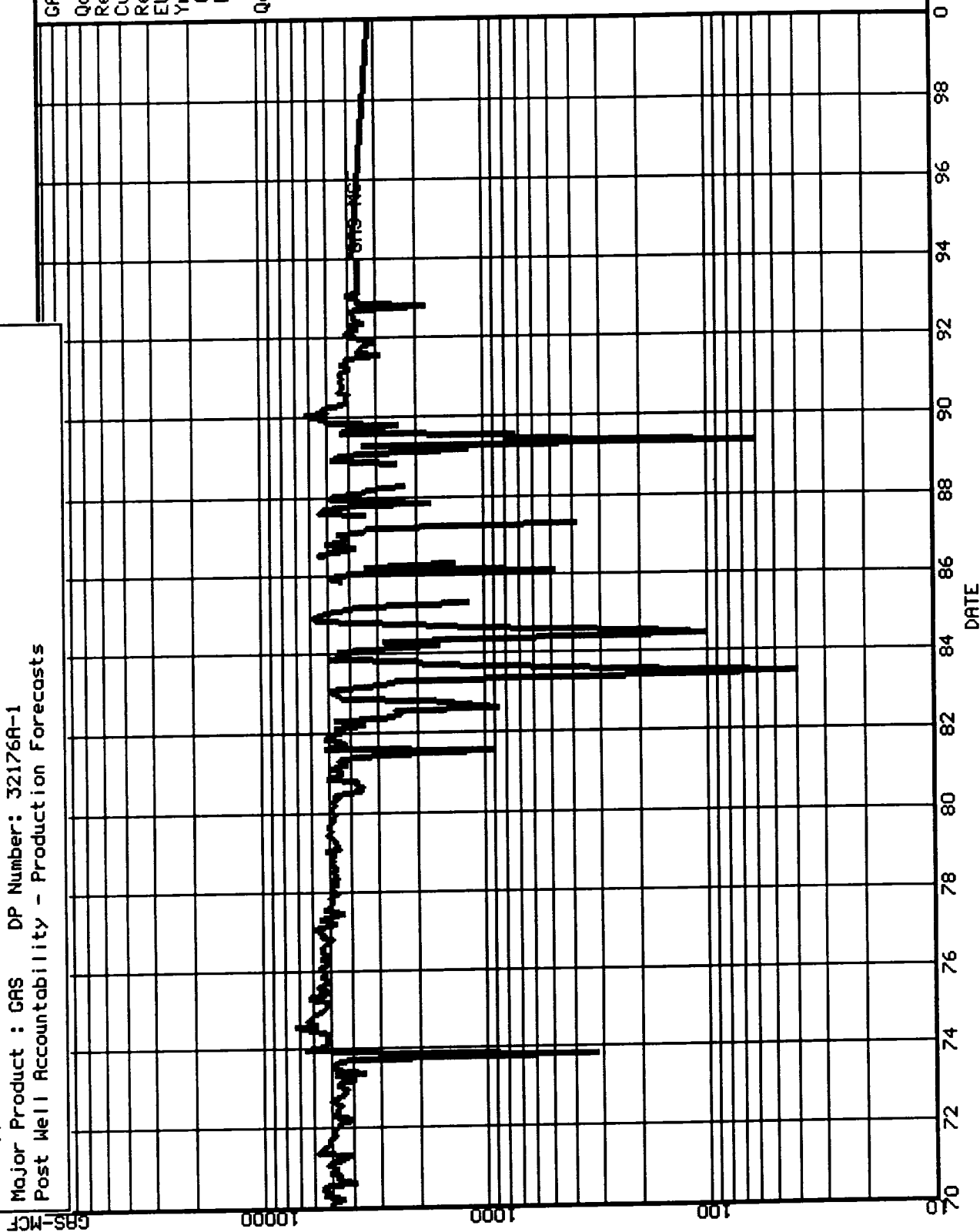
WHERE: (t) IS IN MONTHS

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



Lease : ZACHRY
 Field : AZTEC PICTURED CLIFFS (GAS)
 Location : 029N010W33N
 County, St : SAN JUAN NM
 Major Product : GAS DP Number: 32176A-1
 Post Well Accountability - Production Forecasts

GAS ———
 Qo1=94PDP
 Ref= 01/94
 Cum=1668.433
 Rem=1430.262
 EUR=3098.695
 Yrs= 84.083
 Qi= 3959.9
 De= 3.024
 n= .000
 Qab= 300.0



UNAN93, RT, P/Z RESULTS IN STEEPER DECLINE (7%) THAN
 MATCHING P/Z RESULTS IN STEEPER DECLINE (7%) THAN
 HISTORY SUPPORTS,,
 P/Z=2238.4,,
 94PDP RT RUDY WELL RUDY CENTRAL COMPRESSION GATHER