



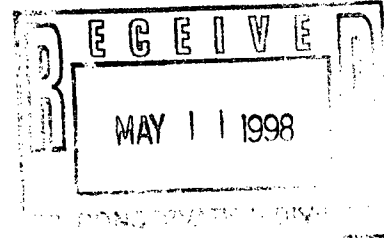
**Marathon  
Oil Company**

P.O. Box 2409  
Hobbs, NM 88241-2409  
Telephone 505/393-7106

*Handwritten:* #1962 ✓

April 23, 1998

Mr. David Catanach  
Oil Conservation Department  
Energy and Minerals Department  
P.O. Box 2088  
Santa Fe, New Mexico 87501



**RE: Request for Exception to Rule 303-A  
Downhole Commingling  
Bertha Barber Well No. 18Y  
Unit Letter L, 1766' FSL & 663' FWL  
Section 5, T-20-S, R-37-E  
Monument Tubb & Monument Abo  
Monument Field  
Lea County, New Mexico**

Dear Mr. Catanach:

Marathon Oil Company requests administrative approval for an exception to Rule 303-A to permit the downhole commingling of production in the above subject well from the Monument Tubb & Monument Abo pools in Lea County, New Mexico. Marathon also request a 30 day exception to Rule 303-A to permit the downhole commingling of production while awaiting for approval of application. If application is not approved, then the well will be worked over to produce only the Monument Tubb.

Bertha Barber Well No. 18Y is a newly drilled well. The Abo was perforated and acidized three different times covering 843' from top to bottom perf and utilizing more than 28,000 gallons of acid. Swab tests of the Abo showed production to be very marginal. After setting a CIBP above the Abo, the Tubb was perforated. The Tubb was acidized and sand frac. Swab tests of the Tubb showed production to be marginal. After installation of a pumping unit, the Tubb will be tested to verify the production allocated to the Tubb pool. The CIBP will be drilled out and the Tubb and Abo will be downhole commingled, and tested. If these test show that the allocation percentages for the Tubb and Abo are significantly different than that approved, an amended DHC application with the correct percentages will be filed. By downhole commingling the production from the two zones, production will be realized that could not economically justify the cost of equipment to separate the zones. Rod pumping equipment will be utilized to keep the PBHP as low as possible, preventing crossflow.

Enclosed is pertinent data supporting this application as outlined in Rule 303-A. If additional information is necessary, please contact me at (505) 393-7106, ext 201.

Sincerely,

*Handwritten signature of Thomas P. Kacir*

Thomas P. Kacir  
Production Engineer

Enclosure

Mid-Continent Region  
Production United States



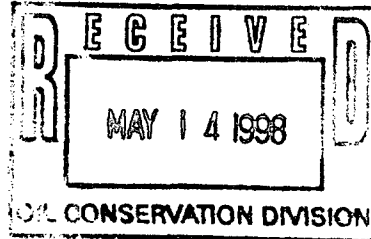
**Marathon  
Oil Company**

P.O. Box 2409  
Hobbs, NM 88241-2409  
Telephone 505/393-7106

April 23, 1998

Amerada Hess Corporation  
P.O. Box 2040  
Houston, Texas 77252-2040

RE: **Request for Exception to Rule 303-A  
Downhole Commingling  
Bertha Barber Well No. 18Y  
Unit Letter L, 1766' FSL & 663' FWL  
Section 5, T-20-S, R-37-E  
Monument Tubb & Monument Abo  
Monument Field  
Lea County, New Mexico**



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If you are in agreement and waive all objections to the downhole commingling, please sign below and mail the original to the NMOCD in the enclosed addressed envelope. Also, please return one copy to Marathon at the letterhead address.

Sincerely,

*Thomas P. Kacir*  
Thomas P. Kacir  
Production Engineer

TPK/  
Enclosure

Agreed and accepted this 1 day of May 1998  
by Robert L. Williams Jr. as representative of  
Amerada Hess Corporation

*[Signature]*

WELL  
FILE

Mid-Continent Region  
Production United States

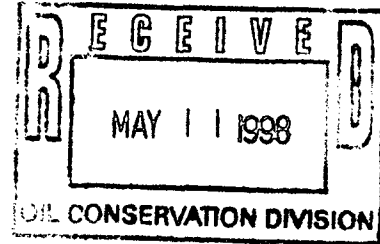


**Marathon  
Oil Company**

P.O. Box 2409  
Hobbs, NM 88241-2409  
Telephone 505/393-7106

April 30, 1998

Texaco Exploration & Production Inc.  
P.O. Box 3109  
Midland, Texas 79702



RE: **Request for Exception to Rule 303-A  
Downhole Commingling  
Bertha Barber Well No. 18Y  
Unit Letter L, 1766' FSL & 663' FWL  
Section 5, T-20-S, R-37-E  
Monument Tubb & Monument Abo  
Monument Field  
Lea County, New Mexico**

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If you are in agreement and waive all objections to the downhole commingling, please sign below and mail the original to the NMOCD in the enclosed addressed envelope. Also, please return one copy to Marathon at the letterhead address.

Sincerely,

*Thomas P. Kacir*

Thomas P. Kacir  
Production Engineer

TPK/  
Enclosure

Agreed and accepted this 24 day of May 1998  
by *Charles E. Hall* as representative of  
*Texaco E & P Inc.*

**REQUEST FOR EXCEPTION TO RULE 303-A**

**Bertha Barber Well No. 18Y**

**Monument Field**

**A: Operator**

Marathon Oil Company  
P.O. Box 2409  
Hobbs, New Mexico 88240-2409

**B: Lease Name and Well Number**

Bertha Barber Well No. 18Y  
Unit Letter L, 1766' FSL & 663' FWL  
Section 5, T-20-S, R-37-E  
Lea County, New Mexico  
Monument: Monument Tubb, Monument Abo Pools

**C: Plats and Offset Operators**

Attached

**D: C-116's**

Attached

**E: Production Decline Curves**

Expected Decline Curves are Attached

**F: Estimated Bottomhole Pressures**

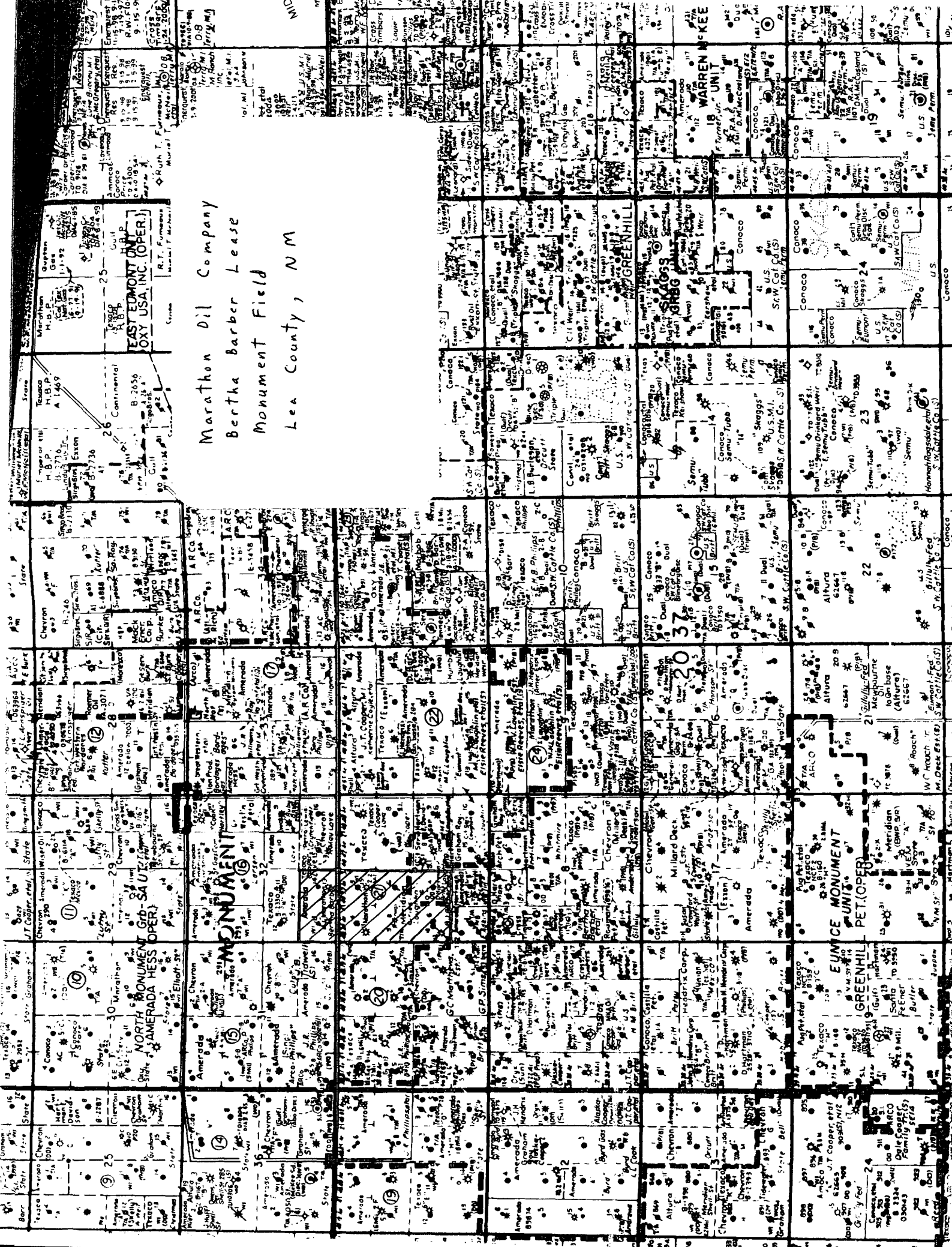
	Current
Monument Tubb	2300 psi
Monument Abo	2000 psi

**G: Product Characteristics**

Previous commingling of these zones by Marathon and other operators have shown that the produced fluids are compatible and commingling will not cause formation damage.

**H: Value**

Marathon receives the same price for product from these zones and value will not be adversely affected.



Marathon Oil Company  
Bertha Barber Lease  
Monument Field  
Lea County, NM

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Marathon  
Bertha Barber  
Monument  
Lea County, NM

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Marathon  
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Monument  
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Monument  
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Monument  
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Marathon  
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Marathon  
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Marathon  
Bertha Barber  
Monument  
Lea County, NM

**OFFSETTING OPERATORS**  
**Bertha Barber Well No. 18Y**  
**UL "L", 1766' FSL, 663' FWL**  
**Section 5, T-20-S, R-37-E**  
**Lea County, New Mexico**  
**Monument Field**

Doyle Hartman  
P.O. Box 10426  
Midland, Texas 79702-7426

Amerada Hess Corporation  
P.O. Box 2040  
Houston, Texas 77252-2040

Chevron USA Inc.  
P.O. Box 1150  
Midland, Texas 79705

**I: Production Allocation**

<u>POOL</u>	<u>BOPD</u>	<u>MCFD</u>	<u>BWPD</u>	<u>Estimated Methods</u>
Extrapolated to 24 Hrs				
Monument Tubb	59	Vented	97	Swab Test
Monument Abo	<u>8</u>	<u>Vented</u>	<u>31</u>	Swab Test
Total	67		128	
Adjusted to estimated FBHP (pumped off condition)				
Monument Tubb	64	83	105	Utilized 1300 GOR
Monument Abo	<u>10</u>	<u>41</u>	<u>41</u>	Utilized 4100 GOR
Total	74	124	146	

<u>Allocated Percentages</u>	<u>Oil %</u>	<u>Gas %</u>	<u>Water %</u>
Utilized estimated production for pumped off condition			
Monument Tubb	86.5	66.9	71.9
Monument Abo	<u>13.5</u>	<u>33.1</u>	<u>28.1</u>
Total	100	100	100

**J: Ownership**

Ownership of all zones is common and correlative rights will not be compromised.

**K: Offset Operator Notification**

By copy of this letter we are notifying all offset operators (see list, Item C) of the proposed commingling, by certified mail.

Mid-Continent Region  
Production United States



**Marathon  
Oil Company**

P.O. Box 2409  
Hobbs, NM 88241-2409  
Telephone 505/393-7106

April 23, 1998

Amerada Hess Corporation  
P.O. Box 2040  
Houston, Texas 77252-2040

RE: **Request for Exception to Rule 303-A  
Downhole Commingling  
Bertha Barber Well No. 18Y  
Unit Letter L, 1766' FSL & 663' FWL  
Section 5, T-20-S, R-37-E  
Monument Tubb & Monument Abo  
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Sincerely,

Thomas P. Kacir  
Production Engineer

TPK/  
Enclosure

Agreed and accepted this \_\_\_\_\_ day of \_\_\_\_\_ 1998

by \_\_\_\_\_, as representative of

\_\_\_\_\_



Mid-Continent Region  
Production United States



**Marathon  
Oil Company**

P.O. Box 2409  
Hobbs, NM 88241-2409  
Telephone 505/393-7106

April 23, 1998

Doyle Hartman  
P.O. Box 10426  
Midland, Texas 79702-7426

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Downhole Commingling  
Bertha Barber Well No. 18Y  
Unit Letter L, 1766' FSL & 663' FWL  
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Production Engineer

TPK/  
Enclosure

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by \_\_\_\_\_, as representative of

\_\_\_\_\_

Mid-Continent Region  
Production United States



**Marathon  
Oil Company**

P.O. Box 2409  
Hobbs, NM 88241-2409  
Telephone 505/393-7106

April 23, 1998

Chevron USA Inc.  
P.O. Box 1150  
Midland, Texas 79705

RE:     **Request for Exception to Rule 303-A**  
          **Downhole Commingling**  
          **Bertha Barber Well No. 18Y**  
          **Unit Letter L, 1766' FSL & 663' FWL**  
          **Section 5, T-20-S, R-37-E**  
          **Monument Tubb & Monument Abo**  
          **Monument Field**  
          **Lea County, New Mexico**

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Thomas P. Kacir  
Production Engineer

TPK/  
Enclosure

Agreed and accepted this \_\_\_\_\_ day of \_\_\_\_\_ 1998

by \_\_\_\_\_, as representative of

\_\_\_\_\_

Bertha Barber Well No. 18Y

### Production Estimation Method

Data from the completion that was used:

Type	Used For
Shut-in tubing pressures	Static Bottom Hole Pressure
Stimulation treatment pressures	Static Bottom Hole Pressure
Swab tests (1 to 8 hrs)	Production
Fluid levels	Producing & Static Bottom Hole Pressure
Completion data	Producing & Static Bottom Hole Pressure

For each Pool

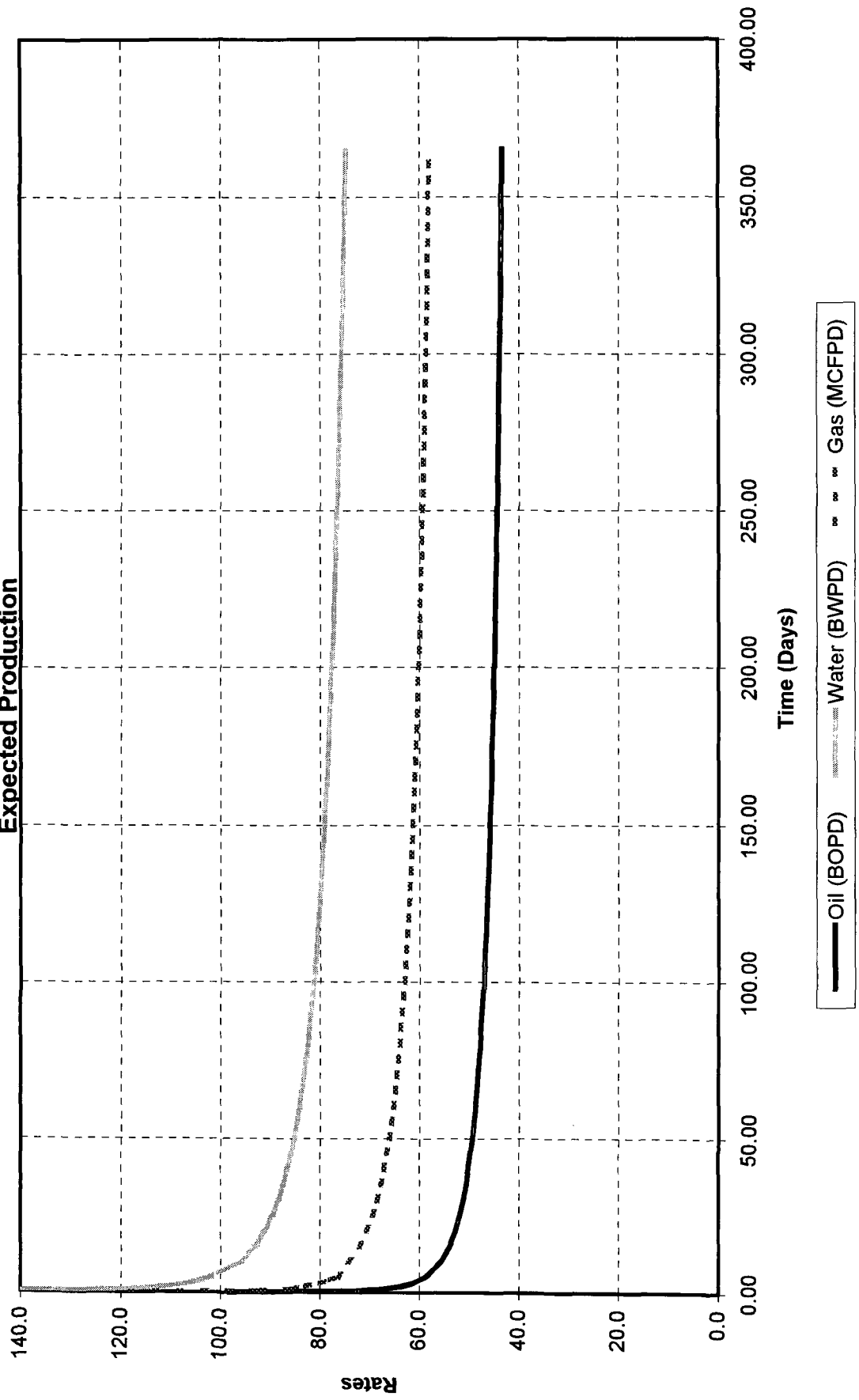
- 1<sup>st</sup> Estimated a static bottom hole pressure
- 2<sup>nd</sup> Estimated a producing bottom hole pressure during swab tests
- 3<sup>rd</sup> Calculate average swab test
- 4<sup>th</sup> Extrapolate average swab test to 24 hour test
- 5<sup>th</sup> Estimate effective permeability using transient flow equation and swab test data (1, 2, 4)
- 6<sup>th</sup> Estimated a producing bottom hole pressure with pump below all perforations
- 7<sup>th</sup> Estimate production using transient flow equation and calculated effective permeability (1, 5, 6)

Gas from the Abo Pool was assumed to have a similar GOR as Marathons other Abo production in this area. A GOR of 4100 SCF/BO was utilized.

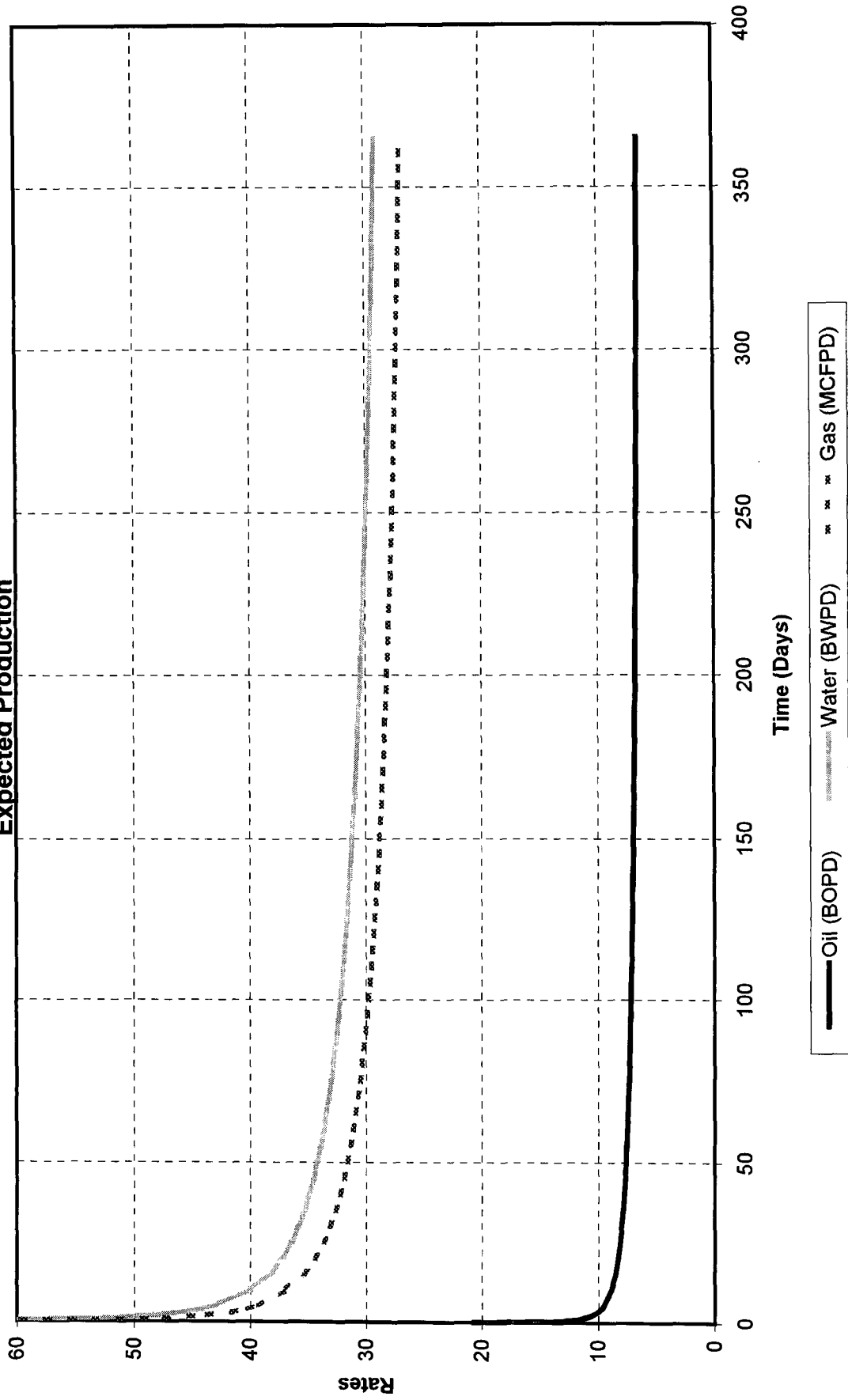
Gas from the Tubb Pool was assumed to have a GOR similar to other low gas, high water rate Monument Tubb producers (past and present). A GOR of 1300 SCF/BO was utilized.

The expected producing bottom-hole pressure for the Abo is going to be several hundred pounds lower than during the Abo swab test. Swabbed from 6800', but will pump from 7700'.

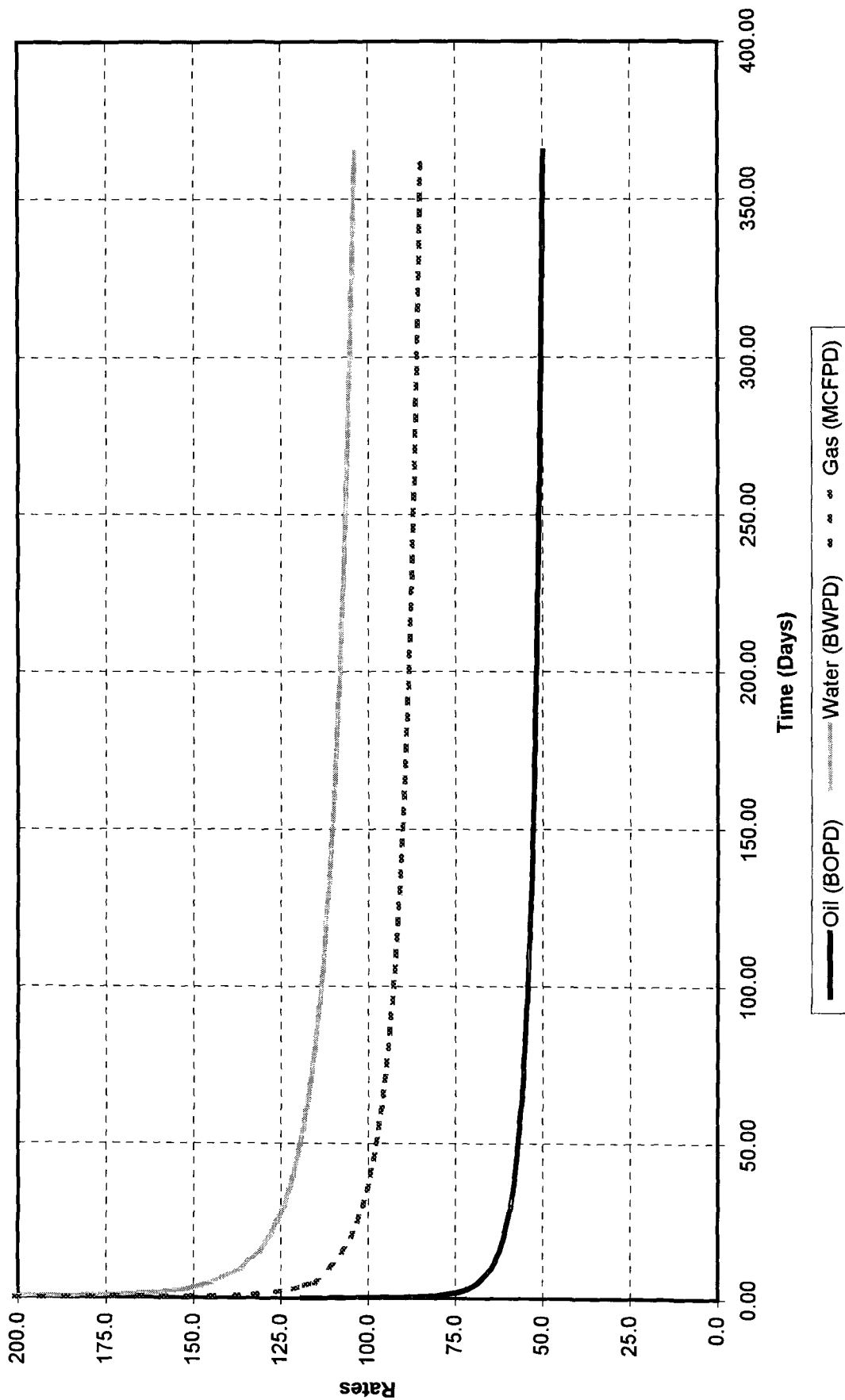
**Bertha Barber 18Y  
Monument Tubb  
Expected Production**



**Bertha Barber 18Y  
Monument Abo  
Expected Production**



Bertha Barber 18Y  
Expected Total Production



Submit 2 copies to Appropriate District Office.

DISTRICT I

P.O. Box 1980, Hobbs, NM 88240

DISTRICT II

811 S. 1st Street, Artesia, NM 88210-2834

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-116  
Revised 1/1/89

## OIL CONSERVATION DIVISION

2040 Pacheco St.

Santa Fe, NM 87505

### GAS - OIL RATIO TEST

Operator		Pool		County		Lea							
Marathon Oil Company		Monument Tubb / Abo											
Address		TYPE OF TEST - (X)		Completion		Special							
P.O. Box 2409 Hobbs, NM 88240		S		<input type="checkbox"/>		<input checked="" type="checkbox"/>							
LEASE NAME	WELL NO.	LOCATION			DATE OF TEST	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW-ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST			GAS-OIL RATIO CU.FT./BBL
		U	S	T						R	WATER BBL'S.	GRAV. OIL	
Bertha Barber	18Y	L	5	20S	37E	4/15/98	Swab	Test	2.5	8.7	3.8	Vent	
Monument Tubb						4/16/98	Swab	Test	6.0	26	17	Vent	
Monument Abo						3/27/98	Swab	Test	2.0	2.8	0.7	Vent	
						3/28/98	Swab	Test	2.0	2.4	0.6	Vent	
For Information Only													

#### Instructions:

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Division.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60°F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

*Thomas P. Kacir*  
Signature

Thomas P. Kacir Production Engineer

Printed name and title

4/23/98

Date

505-393-7106

Telephone No.

(See Rule 301, Rule 1116 & appropriate pool rules.)

State of New Mexico  
Energy, Minerals & Natural Resources Department

Form C-102

Revised October 18, 1994

Instructions on back

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

District I  
PO Box 1980, Hobbs, NM 88241-1980  
District II  
811 S. 1st Street, Artesia, NM 88210-2834  
District III  
1000 Rio Brazos Rd., Aztec, NM 87410  
District IV  
2040 South Pacheco, Santa Fe, NM 87505

OIL CONSERVATION DIVISION  
2040 South Pacheco  
Santa Fe, NM 87505

☐ AMENDED REPORT

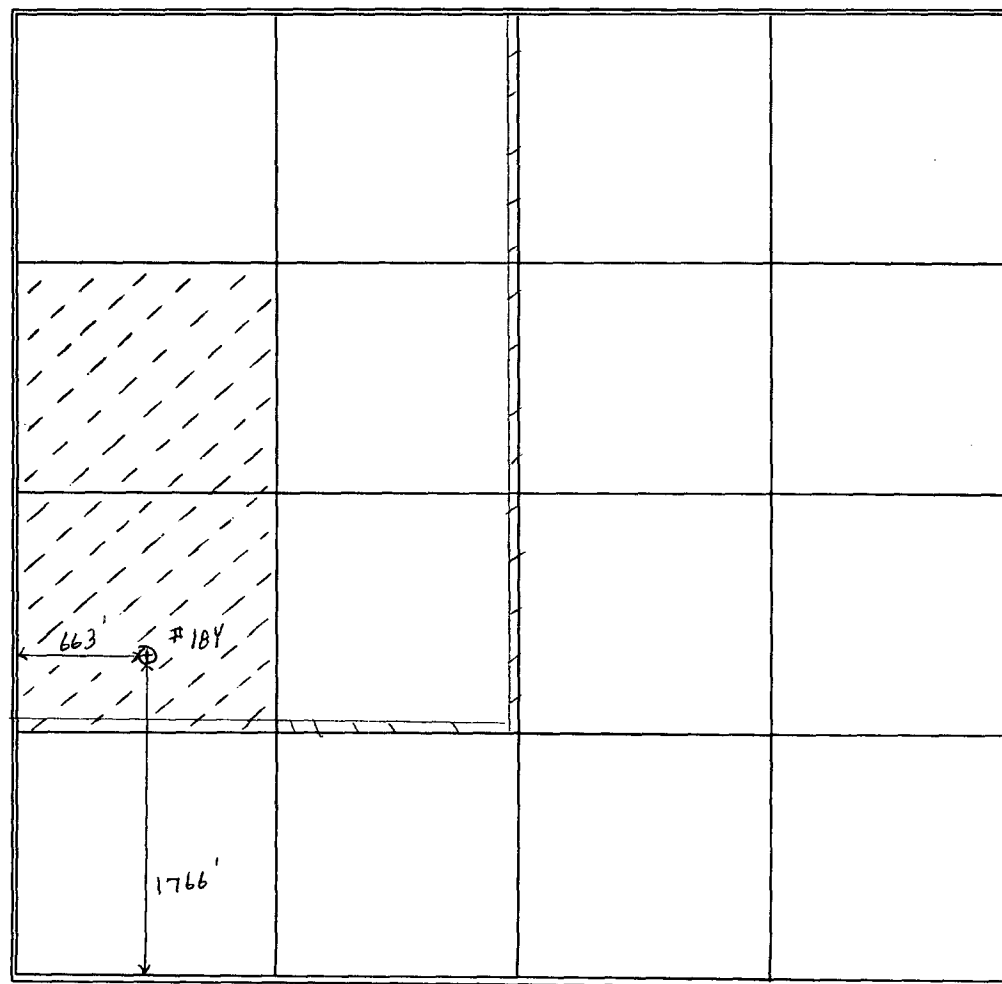
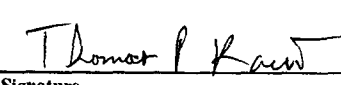
WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number <b>30-025-34327</b>	<sup>2</sup> Pool Code <b>47090</b>	<sup>3</sup> Pool Name <b>Monument Tubb</b>
<sup>4</sup> Property Code <b>6366</b>	<sup>5</sup> Property Name <b>Bertha Barber</b>	<sup>6</sup> Well Number <b>18Y</b>
<sup>7</sup> OGRID No. <b>014021</b>	<sup>8</sup> Operator Name <b>Marathon Oil Company</b>	<sup>9</sup> Elevation <b>GL 3559, KB 3572</b>

<sup>10</sup> Surface Location									
UL or lot no. <b>L</b>	Section <b>5</b>	Township <b>20-S</b>	Range <b>37-E</b>	Lot. Idn	Feet from the <b>1766</b>	North/South Line <b>South</b>	Feet from the <b>663</b>	East/West line <b>West</b>	County <b>Lea</b>

<sup>11</sup> Bottom Hole Location If Different From Surface									
UL or lot no.	Section	Township	Range	Lot. Idn	Feet from the	North/South Line	Feet from the	East/West line	County
<sup>12</sup> Dedicated Acres <b>80</b>									
<sup>13</sup> Joint or Infill									
<sup>14</sup> Consolidation Code									
<sup>15</sup> Order No.									

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON--STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

	<sup>17</sup> OPERATOR CERTIFICATION <i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</i>   Signature <b>Thomas P. Kacir</b> Printed Name <b>Production Engineer</b> Title <b>4/23/98</b> Date
	<sup>18</sup> SURVEYOR CERTIFICATION <i>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</i>  Date of Survey  Signature and Seal of Professional Surveyer:  Certificate Number



State of New Mexico  
Energy, Minerals & Natural Resources Department

Form C-102

Revised October 18, 1994

District I  
PO Box 1980, Hobbs, NM 88241-1980  
District II  
811 S. 1st Street, Artesia, NM 88210-2834  
District III  
1000 Rio Brazos Rd., Aztec, NM 87410  
District IV  
2040 South Pacheco, Santa Fe, NM 87505

OIL CONSERVATION DIVISION  
2040 South Pacheco  
Santa Fe, NM 87505

Instructions on back  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number <b>30-025-34327</b>		<sup>2</sup> Pool Code <b>46970</b>		<sup>3</sup> Pool Name <b>Monument Abo</b>	
<sup>4</sup> Property Code <b>6366</b>		<sup>5</sup> Property Name <b>Bertha Barber</b>			<sup>6</sup> Well Number <b>18Y</b>
<sup>7</sup> OGRID No. <b>014021</b>		<sup>8</sup> Operator Name <b>Marathon Oil Company</b>			<sup>9</sup> Elevation <b>GL 3559, KB 3572</b>

<sup>10</sup> Surface Location									
UL or lot no. <b>L</b>	Section <b>5</b>	Township <b>20-S</b>	Range <b>37-E</b>	Lot. Idn	Feet from the <b>1766</b>	North/South Line <b>South</b>	Feet from the <b>663</b>	East/West line <b>West</b>	County <b>Lea</b>

<sup>11</sup> Bottom Hole Location If Different From Surface									
UL or lot no.	Section	Township	Range	Lot. Idn	Feet from the	North/South Line	Feet from the	East/West line	County
<sup>12</sup> Dedicated Acres <b>40</b> <sup>13</sup> Joint or Infill <sup>14</sup> Consolidation Code <sup>15</sup> Order No.									

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OR A NON--STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

	<sup>17</sup> OPERATOR CERTIFICATION			
	I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.			
	Signature 			
	Printed Name <b>Thomas P. Kacir</b> Title <b>Production Engineer</b> Date <b>4/23/98</b>			
	<sup>18</sup> SURVEYOR CERTIFICATION			
	I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.			
	Date of Survey Signature and Seal of Professional Surveyor:			
	Certificate Number			

**DISTRICT I**  
P.O. Box 1980, Hobbs, NM 88240

**DISTRICT II**  
811 South First St., Artesia, NM 88210

**DISTRICT III**  
1000 Rio Brazos Rd, Aztec, NM 87410

State of New Mexico  
Energy, Minerals and Natural Resources Department

**OIL CONSERVATION DIVISION**

2040 S. Pacheco  
Santa Fe, New Mexico 87505-8429

Form C-107-A  
New 3-12-96

APPROVAL PROCESS:

☐ Administrative ☐ Hearing

EXISTING WELLBORE

☐ YES ☐ NO

**APPLICATION FOR DOWNHOLE COMMINGLING**

Operator Marathon Oil Company Address PO Box 2409 Hobbs, NM 88240

Bertha Barber 18Y UL L, Sec.5, T-20-S, R-37-E Lea

14021 6366 30-025-34327 Lea

OGRID NO. 14021 Property Code 6366 API NO. 30-025-34327 Federal      State      (and/or) Fee X

Spacing Unit Lease Types: (check 1 or more)

The following facts are submitted in support of downhole commingling:	Upper Zone	Intermediate Zones	Lower Zone
1. Pool Name and Pool Code	Monument; Tubb 74090	N/A	Monument; Abo 46970
2. Top and Bottom of Pay Section (Perforations)	6414-6457'	N/A	6874-7717'
3. Type of production (Oil or Gas)	Oil	N/A	Oil
4. Method of Production (Flowing or Artificial Lift)	Artificial Lift	N/A	Artificial Lift
5. Bottomhole Pressure Oil Zones - Artificial Lift: Gas & Oil - Flowing: All Gas Zones: Measured Current Estimated Or Measured Original	a. (Current) 2300 psi	a. N/A	a. 2000 psi
	b. (Original) N/A	b. N/A	b. N/A
6. Oil Gravity (°API) or Gas BTU Content	36.4	N/A	41.0
7. Producing or Shut-in?	Producing	N/A	Shut-in
Production Marginal? (yes or no)  • If Shut-in, give date and oil/gas/water rates of last production  Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data  • If Producing, give date and oil/gas/water rates of recent test (within 60 days)	Yes	N/A	Yes
	Date: N/A Rates:	Date: N/A Rates:	Date: 3/28/98 (2 hrs) Rates: 0.6/--/2.4
	Date: 4/16/98 (6 hrs) Rates: 17/--/26	Date: N/A Rates:	Date: N/A Rates:
8. Fixed Percentage Allocation Formula - % for each zone	Oil: 88.2 % Gas: 66.0 %	Oil: -- % Gas: -- %	Oil: 11.8 % Gas: 34.0 %

9. If allocation formula is based upon something other than current or past production, or is based upon some other method, submit attachments with supporting data and/or explaining method and providing rate projections or other required data.

10. Are all working, overriding, and royalty interests identical in all commingled zones? ☒ Yes ☐ No  
If not, have all working, overriding, and royalty interests been notified by certified mail? ☐ Yes ☐ No  
Have all offset operators been given written notice of the proposed downhole commingling? ☒ Yes ☐ No

11. Will cross-flow occur? ☐ Yes ☒ No If yes, are fluids compatible, will the formations not be damaged, will any cross-flowed production be recovered, and will the allocation formula be reliable. ☐ Yes ☐ No (If No, attach explanation)

12. Are all produced fluids from all commingled zones compatible with each other? ☒ Yes ☐ No

13. Will the value of production be decreased by commingling? ☐ Yes ☒ No (If Yes, attach explanation)

14. If this well is on, or communitized with, state or federal lands, either the Commissioner of Public Lands or the United States Bureau of Land Management has been notified in writing of this application. ☐ Yes ☐ No

15. NMOC Reference Cases for Rule 303(C) Exceptions: ORDER NO(S).                     

16. ATTACHMENTS:

- C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
- Production curve for each zone for at least one year. (If not available, attach explanation.)
- For zones with no production history, estimated production rates and supporting data.
- Data to support allocation method or formula.
- Notification list of all offset operators.
- Notification list of working, overriding, and royalty interests for uncommon interest cases.
- Any additional statements, data, or documents required to support commingling.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Thomas P. Kacir TITLE Production Eng. DATE 4/23/98

TYPE OR PRINT NAME Thomas P. Kacir TELEPHONE NO. ( 505 ) 393-7106