OIL CONSERVATION DIVISION RECEIVED



30 JUL 25 AM 9 36 P.O. Box 552 Midland, Texas 79702 Telephone 915/682-1626

July 19, 1990

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

Re: Request for Exception to Rule 303-A Downhole Commingling Mark Owen No. 8 SW/4 Sec. 35-T21S-R37E Wantz Abo and Wantz Granite Wash Lea County, New Mexico

Dear Mr. Catanach:

Marathon Oil Company respectfully requests administrative approval for an exception to Rule 303-A to permit the downhole commingling of production from the Wantz Abo and the Wantz Granite Wash oil pools in the subject well.

Currently, the well is completed as a Wantz Abo and Wantz Granite Wash dual oil well. The Wantz Abo is flowing up 2 1/16" tubing and the Granite Wash is being lifted artificially by means of a rod pump.

On June 9, 1990, the Wantz Abo was shut-in. On June 11, 1990, a pressure bomb was run into the well to mid-perfs. The measured pressure was 591 psig. The Wantz Granite Wash was also shut-in for 48 hours. The well was weighed with a dynamometer. From the dynamometer pump card a fluid load was calculated and Nabla's Pump Intake Pressure program was run. The pump intake pressure at pump depth of 7160' (top of perfs) was calculated to be 1180 psig.

The pressure of the Wantz Abo is 50% of the pressure in the Wantz Granite Wash. Marathon believes that the two zones can be downhole commingled and produced without crossflow or a loss of reserves in either zone. The Wantz Abo's last test showed it producing 2 BOPD, 1 BWPD and 130 MCFD. The last production test on the Wantz Granite Wash was 7 BOPD, 0 BWPD and 28 MCFD in a pumped-off condition. If these zones were commingled, the combined production would be 9 BOPD, 1 BWPD and 158 MCFD. The rod pumping equipment currently in place has the capacity to lift 85 BFPD. Therefore, the well should remain in a pumped-off condition (i.e., producing pressure less than 100 psi) while being artificially lifted. Mr. David Catanach July 19, 1990 Page 2

All ownership (WI, Royalty and ORRI) in the wellbore is the same. Furthermore, the downhole commingling of the Wantz Abo and Wantz Granite Wash will not jeopardize future secondary recovery operations. As required, additional information is attached and all offset operators are being notified by copy of this application.

In summary, Marathon feels that as a prudent operator we can effectively downhole commingle the Wantz Abo and the Wantz Granite Wash and maximize production by doing so. We look forward to your approval of this application.

Sincerely yours,

MARATHON OIL COMPANY

Styph Dyox FOR WOH

William D. Holmes Midland Operations Superintendent

WPB/lr Attachments

Request for Exception to Rule 303-A Mark Owen Well No. 8 Wantz Abo and Wantz Granite Wash Lea County, New Mexico

Reference: Section 2-C, Rule 303

- a) Marathon Oil Company P. O. Box 552 Midland, Texas 79702
- b) Mark Owen No. 8
 760' FSL and 760' FWL, Sec. 35-21S-37E
 Lea County, New Mexico
 Producing Zones: Wantz Abo and Wantz Granite Wash
 (See Attachment 2 for Form C-103)
- c) Plat of acreage dedicated and offsetting operators (see Attachments 3 and 4).
- d) Form C-116 for the Wantz Abo completion (Attachment 5). Form C-116 for the Wantz Granite Wash completion (Attachment 6).
- e) Production curve for the Wantz Abo completion (Attachment 7). Production curve for the Wantz Granite Wash completion (Attachment 8).
- f) Measured bottomhole pressures for both zones in question:

Wantz Abo - 591 psig (Attachment 9) Wantz Granite Wash - 1180 psig (Attachment 10)

g&h) The oil produced from the Wantz Abo and the Wantz Granite Wash have gravities of 43° and 40° API, respectively. Because the two gravities are so similar, the value of the commingled streams should not be less than the value of the two separate streams. The water production on both zones is negligible, so a water sample is difficult to get. The Mark Owen No. 7 water analyses for the same zones are included, and there is little difference between the produced waters (Attachments 11 and 12).

i)	Zone	Oil (BPD)	<u>Oil %</u>	<u>Gas (MCF)</u>	Gas %
	Wantz Abo	2	22.2	130	82.3
	Wantz Granite Wash	7		28	17.7
	Total	9	100%	158	100%

j) By copy of this letter, we are notifying all offset operators of the proposed commingling by certified mail (see attached letters).

· ·	ATTACHMENT	2					
Submit 3 Copies to Appropriate District Office	State of New Me Energy, Minerals and Natural Re		Form C-103 Revised 1-1-89				
DISTRICT I P.O. Box 1980, Hobbs, NM 88240	OIL CONSERVATIO P.O. Box 208		WELL API NO.				
DISTRICT II P.O. Drawer DD, Artesia, NM 88210	Santa Fe, New Mexico	87504-2088	5. Indicate Type of Lease STATE FEE X				
DISTRICT III 1000 Rio Brazos Rd., Aziec, NM 87410			6. State Oil & Gas Lease No.				
	CES AND REPORTS ON WEL						
DIFFERENT RESEF	DPOSALS TO DRILL OR TO DEEPEN RVOIR. USE "APPLICATION FOR PEF -101) FOR SUCH PROPOSALS.)		7. Lease Name or Unit Agreement Name				
1. Type of Well: OIL WELL X GAS WELL	OTHER		Mark Owen				
2. Name of Operator 8. Well No.							
Marathon Oil Company	Marathon Oil Company 8						
3. Address of Operator			9. Pool name or Wildcat				
P. O. Box 552, Midla	nd, Texas 79702		Wantz Granite Wash & Wantz Abd				
4. Well Location							
Unit Letter : 760	Feet From The South	Line and7	60 Feet From The West Line				
Section 35			MMPM Lea County				
	10. Elevation (Show whether 3373' GI						
11. Check	Appropriate Box to Indicate N	Nature of Notice, Re	port, or Other Data				
NOTICE OF INT	TENTION TO:	SUB	SEQUENT REPORT OF:				
		REMEDIAL WORK					
	CHANGE PLANS	COMMENCE DRILLING					
PULL OR ALTER CASING		CASING TEST AND CE					
OTHER: Downhole commi	ingle X	OTHER:	[]				

12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

Request authorization to downhole commingle the Wantz Granite Wash and the Wantz Abo pools.

I hereby certify that the information above is true and complete to the best of my knowledg	e and belief.	
SKONATURE August Differ For WDH	me Operations Superintendent	<u>рате 6-19-90</u> (915)
TYPE OR PRINT NAME William D. Holmes		TELEPHONE NO. 682-1626
(This space for State Use)		· · ·
APPROVED BY	- TTLE	DATE

Submit to Appropriate District Office State Lease - 4 copies Fee Lease - 3 copies

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

DISTRICT II P.O. Drawer DD, Artesia, NM 88210

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

ATTACHMENT 4 State of New Mexico Energy, Minerals and Natural Resources Department

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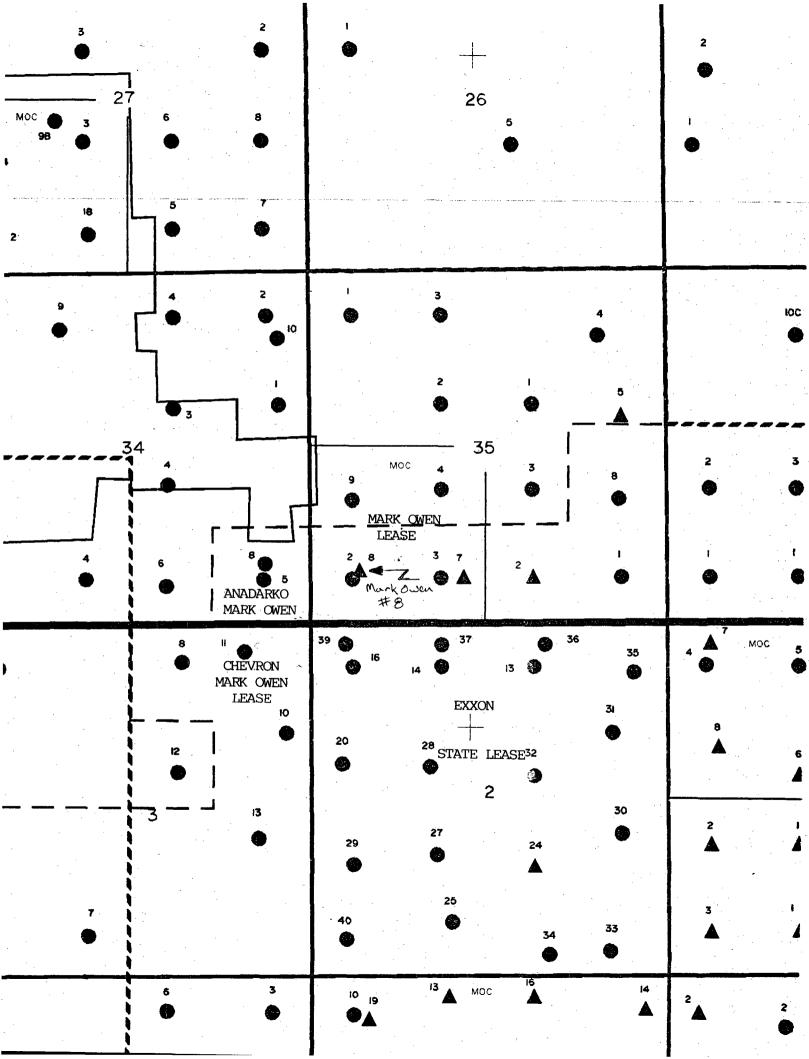
OIL CONSERVATION DIVISION P.O. Box 2088

Santa Fe, New Mexico 87504-2088

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator					Lease				Well No.	
Marathon	n Oil	Company	,		Mark	Owen			8	
Unit Letter	Sectio		Township	<u></u>	Range			County		
М	1	35	2	1S		37E	NMPM]]	Lea	
Actual Footage Loca	ation of							· ·		
760	feet fi	om the	South	line and	760)	feet from	the Wes	1010	
Ground level Elev.		Producing	g Formation		Pool				Dedicated Acres	ige:
3385.0'			o/Granite			Abo/Granite			40	Acres
		. –	-			narks on the plat belo mership thereof (both		ng interest and	i royalty).	
unitizat	ation, for Yes ar is "no"	ice-pooling, etc	.? ∣No lfa	nswer is "yes" tyj	e of consolidat	interest of all owners ion onsolidated. (Use re		•	nmunitization,	
No allow	vable wi	ll be assigned to	o the well until al minating such inte	ll interests have be rest, has been app	een consolidated proved by the D	l (by communitizatio ivision.	n, unitization	, forced-pooli	ing, or otherwise)	
		rathon	R-				T 22 S	I hereby ontained her- est of my known ignature J. R. J. osition HObbs P. ompany Maratho Ate 6-19-90 SURVE hereby certion this plat cotual survey	roduction n Oil Comp YOR CERTIFI ify that the well was plotted from so made by me	e information amplete to the Sup't. any CATION location shown field notes of or under my
40 Acre Dedicat	ted	Mark (ical of jurveyor	
	760'	Mark (1320 1650		640 200	00 1500	1000 500		Certificate No		



, Minerals and Natural Resources Departmen	State of New Mexico	ATTACHMENT 5
es Department		

OIL CONSERVATION DIVISION

P.O. Box 2088 Santa Fe, New Mexico 87504-2088

Instructions:	Mark Owen	Ē	Address P. O.	Operator Marat	
		LEASE NAME	-	r Marathon Oil Cor	-
•			Midland.	Company	
•	8	WELL NO.)d, Texas		
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	35	s	79702		
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	37			W	ନ
	5-20-90	DATE OF TEST		P ool Wantz Abo	GAS - OIL RATIO TEST
	 بیا	STATUS	TYPE OF TEST - (X)		RA
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	100	TBG. PRESS	Scheduled		EST
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ove info	N	NG TEST OIL BIBLS	Ş	ē a	
mation	130	GAS	Special		
is true and	65,000	GAS - OIL RATIO CU.FT/BBL			

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

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

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

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

Jenkins,	Hobbs	Production Sup't
ne and title		
0	(915)	687-1676

Printed nan J.R. Signature

þ

Date

Telephone No.

6-25-9

Revised	Form C-
1/1/89	116

P.O. Box 1980, Hobbs, NM 88240 Energy

District Office.

DISTRICT

Submit 2 copies to Appropriate

DISTRICT II P.O. Drawer DD, Artesia, NM 88210 DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

Revised		From	
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	s and Natur	tate of Ne
	ral Resourc	State of New Mexico
•	inergy, Minerals and Natural Resources Department	

OIL CONSERVATION DIVISION

P.O. Box 2088 Santa Fe, New Mexico 87504-2088

P.O. Drawer DD, Artesia, NM 88210 DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

P.O. Box 1980, Hobbs, NM 88240

DISTRICT II

Submit 2 copies to Appropriate

District Office.

DISTRICT

					<u> </u>	GAS - OIL KATIO TEST	5	TIO TE	ST							
Operator						Pool						2	County			
Marathon Oil Company						Wantz Granite Wash	E .	Wash					Lea			
Address							TYPEOF	ମ୍ <u>କ</u>]]		_]
P. O. Box 552, Midland,	Texas		79702			-	EST	8	Scheduled		S	Completion		Å	Special X	<u>ר</u>
	WELL		LOCATION	NOIL		DATEOF	rus	CHOKE		DAILY	OF	PR	PROD. DURING TEST	IG TEST		GAS - OIL
LEASE NAME	NO.	с,	S	-4	ת	TEST	STAT	SIZE	PRESS	ABLE	HOURS	WATER BBLS.	GRAV.	OIL BIBLS	GAS M.C.F.	CU.FT/BBL
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Instructions:							-			1 1	I hereby certify that the above information	tify that	the abc	ve info	rmation	is true and

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

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

(See Rule		
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(See Rule 301, Rule 1116 & appropriate pool rule		•
pool nules.)		

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Hobbs Production Sup't.

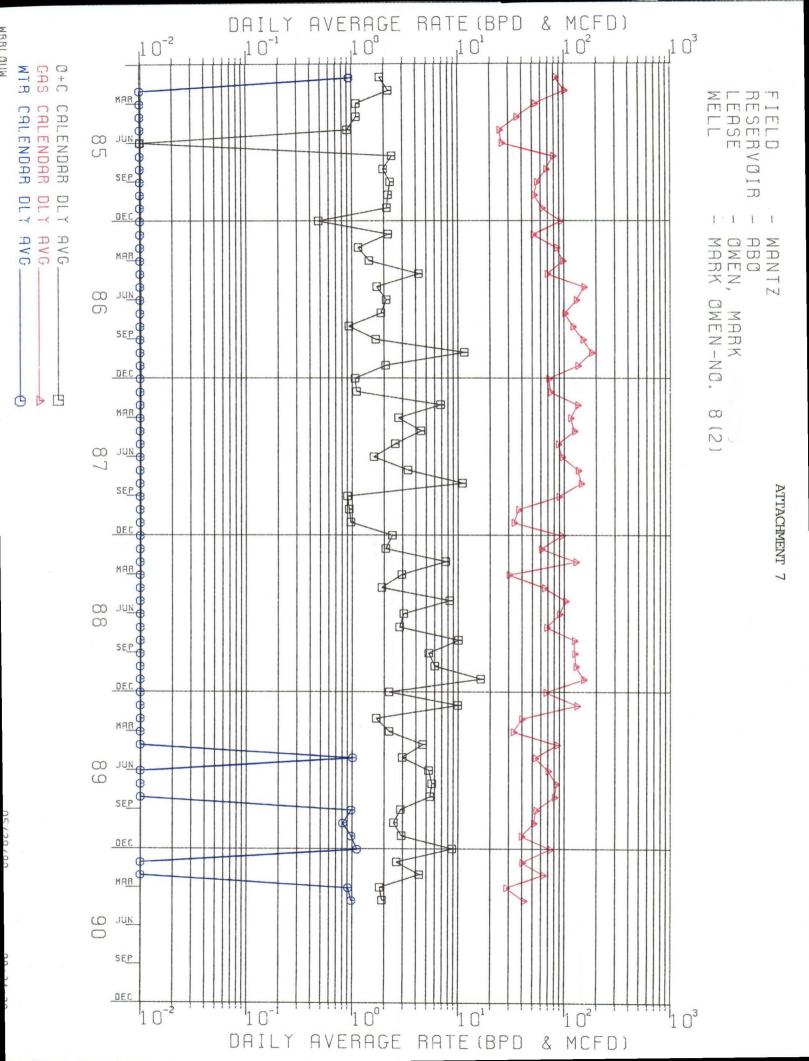
(915) 682-1626 Telephone No.

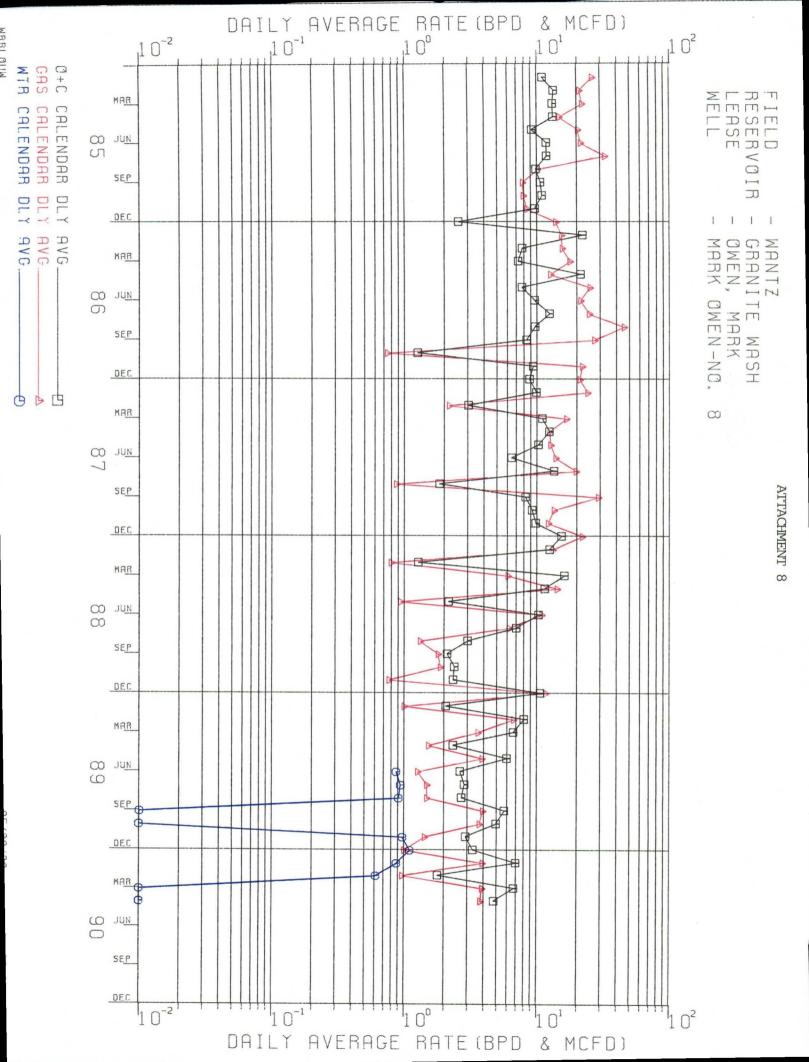
J. R. Jenkins, Printed name and title

6-25-90

Date

Specific gravity base will be 0.60.





INTRACOMPANY CORRESPONDENCE

то	TO J.R. JENKINS		6/12/90	
OFFICE	Midland	FROM .	Tony Hallum	
Re:	Bottomhole Pressure Survey	OFFICE	Hobbs	······
	(USE THIS LINE FOR FILE REFERENCE OR SUBJECT)			

MARATHON OIL COMPANY MARK OWEN # 8 (WANTZ ABO) STATIC BHP SURVEY 48 HR. SHUT-IN 6/11/90

DEPTH (ft)	PRESSURE (psi)	<u> </u>	<u>A</u> D	GRADIENT
6	491	· · ·	•	
4765	558	67	4759	0.014
5765	570	12	1000	0.012
6265	579	9	500	0.018
6515	585	6	250	0.024
6765	591	6	250	0.024

xc: Jim Keil

Eng. Tech. File - Hobbs

NABLA CORPORATION

2064 MARKET STREET INDUSTRIAL PARK MIDLAND, TX 79703 (915) 697-2228

7160

<<<< SUBSURFACE PUMP ANALYSIS >>>>>

WELL: MARK OWEN # 8 Date of Analysis: 6/13/90 FUMP Bore Size (IN): 1.5000

ACTUAL FUMP CONDITIONS ******************

PUMP INTAKE PRESSURE (PSI):1180PUMPING SPEED (SPM):4.90GROSS STROKE (IN):116.4NET STROKE (IN):116.4GAS INTERFERENCE:NONEFLUID POUND:NONEFLUID LOAD (LBS):674PUMP LEAKAGE:NILCRUDE SHRINKAGE FACTOR FROM PUMP TO STOCK TANK (BBL PER BBL):1.367

- PUMP VOLUMETRIC DISPLACEMENTS -

BASED ON NET STROKE

BASED ON GROSS STROKE

150 BPD

ANALYST: TWH

ANALYSIS NUMBER: 4

SETTING DEPTH (FT):

150 BPD (109 BPD @ STOCK TANK CONDITIONS)

- PUMP EFFICIENCIES -

BASED ON TEST	BASED ON TEST
AND GROSS STROKE	AND NET STROKE
(PERCENT)	(PERCENT)

CRUDE SHRINKAGE NOT CONSIDERED4.7CRUDE SHRINKAGE CONSIDERED6.4** WELL DOWN 48 HRS. PRIOR TO WEIGHING

<<<<< OTHER DIAGNOSTIC INDICATORS >>>>>

DOWNHOLE FRICTION: NORMAL TUBING OR ANNULUS CHECK VALVE LEAK: NONE LIKELY TUBING MOVEMENT (IN): O LOST DISPLACEMENT (BPD): O TUBINGHEAD PRESSURE (PSI): 24 AVG TBG GRAD (PSI PER FT): 0.215

<<<<< WELL TEST AND FLUID PROPERTY DATA >>>>>

TEST DATE: 5/5/90BFPD:7BWPD:0OIL CUTGOR: UNKNOWNPUMPING UNIT STROKE: 116.4FUMPING UNIT STROKE: 116.4TEST SPIOIL GRAVITY (API):40BUBBLE POINT (PSI):2150 EST.SOLUTIONFORMATION VOLUME FACTOR (BBL PER BBL):1.500 EST.

BOPD: 7 DIL CUT (%): 100.0

TEST SPM: 4.90 WATER GRAVITY (SG): 1.100 SOLUTION GOR: 750 EST. 1.500 EST.

UNICHEM INTERNATIONAL

601 NORTH LEECH P.O. BOX1499

HOBES. NEW MEXICO 88240

COMPANY : MARATHON DATE : 5-11-83 FIELD, LEASE&WELL : MARK OWEN #7 WANTZ AEO SAMPLING POINT: DATE SAMPLED : 5-10-83

SPECIFIC GRAVITY = 1.092 Total dissolved solids = 136507 PH = 4.09

		ME/L	MG/L
CATIONS			
CALCIUM Macnesium Sodium	(CA)+2 (MG)+2 (NA),CALC.	560 340 1521	11222. 4133 34984.
ANIONS			
BICARBONATE CARBONATE Hydroxide Sulfate Chlorides	(HCO3) - 1 (CO3) - 2 (OH) - 1 (SO4) - 2 (CL) - 1	0 0 2 4 7 2 3 7 7	0 0 1187 84980.
DISSOLVED GASES			
CAREON DIOXIDE Hydrogen Sulfide Oxygen	(CO2) (H2S) (O2)	NOT RUN NOT RUN NOT RUN	
IRON(TOTAL) Barium Manganese	(FE) (BA)+2 (MN)	NOT RUN Not run	117.
4		• •	· · · ·

TEMF

SCALING INDEX

30C84PCAREONATE INDEXCALCIUM CARBONATE SCALINGSULFATE INDEXCALCIUM SULFATE SCALINGLIKELY

UNICHEM INTERNATIONAL

601 NORTH LEECH

P.O. BOX1499

HOBRS, NEW MEXICO #8240

OMPANY : MARATHON OIL	COMPANY			
INFANT : MARATHON OIL ATE : 3-21-83 'IELD, LEASE&WFLL MAP SAMPLING FOINT: CRANIT ATE SAMFLED : 3-18-83	RK OVEN VEL Fe Wash	L #7		
SPECIFIC GRAVITY = 1.0 FOTAL DISSOLVED SOLIDS PH = 6 69) 6 5 3 = 9 7 2 7 9		•	
			ME/L	MG/L
CATIONS				
IALCIUM 1AGNESIUM 30DIUM	(CA)+2 (MG)+2 (NA),CALC.	•	280 133 1280.	561 158 294
ANIONS			· .	
BICARBONATE CARBONATE TYDROXIDE SULFATE CHLORIDES	(HCO3)-1 (CO3)-2 (OH)-1 (SO4)-2 (CL)-1		3.5 0 510 1635.	219 0 245 579
DISSOLVED GASES				
CARBON DIOXIDE Hydrogen Sulfide Dxygen	(CO2) (H25) (O2)		NOT RUN Not run Not run	
IRON(TOTAL) Barium Manganese	(FE) (BA)+2 (MN)		NOT RUN Not run	112
SCALING	TNDEX	TEMP	• • • • •	
CARBONATE INDEX Calcium carbonate scai	LING	30C 86F 153 Likely		
SULFATE INDEX Calcium Sulfate Scalii	NG	10.4 Likely	· · · · · · · · · · · · · · · · · · ·	•

112.

5611. 1580. 29431.

219. 0 2450 57986.



P.O. Box 552 Midland, Texas 79702 Telephone 915/682-1626

July 19, 1990

Chevron U.S.A. P. O. Box 670 Hobbs, New Mexico 88240

Re: Request for Exception to Rule 303-A Downhole Commingling Mark Owen No. 8 SW/4 Sec. 35-T21S-R37E Wantz Abo and Wantz Granite Wash Lea County, New Mexico

Gentlemen:

Marathon Oil Company is requesting administrative approval from the New Mexico Oil Conservation Division to downhole commingle production in the above referenced well. The Mark Owen No. 8 is completed in the Wantz Abo and the Wantz Granite Wash in the Drinkard Field. Combined production should average 9 BOPD and 158 MCFD.

Attached for your scrutiny is a copy of our application. Should you have any questions or concerns, please do not hesitate to call me.

Sincerely,

MARATHON OIL COMPANY

DU Stoph FOR WDH

William D. Holmes Midland Operations Superintendent

WPB/lr Attachment



P.O. Box 552 Midland, Texas 79702 Telephone 915/682-1626

July 19, 1990

Anadarko Petroleum Corp. 400 West Illinois Suite 1300 Midland, Texas 79702

Re: Request for Exception to Rule 303-A Downhole Commingling Mark Owen No. 8 SW/4 Sec. 35-T21S-R37E Wantz Abo and Wantz Granite Wash Lea County, New Mexico

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MARATHON OIL COMPANY

.DL typ ' WDH FOR'

William D. Holmes Midland Operations Superintendent

WPB/lr Attachment



P.O. Box 552 Midland, Texas 79702 Telephone 915/682-1626

July 19, 1990

Exxon Company, USA P. O. Box 1600 Midland, Texas 79702-1600

Re: Request for Exception to Rule 303-A Downhole Commingling Mark Owen No. 8 SW/4 Sec. 35-T21S-R37E Wantz Abo and Wantz Granite Wash Lea County, New Mexico

Gentlemen:

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MARATHON OIL COMPANY

William D. Holmes Midland Operations Superintendent

WPB/lr Attachment

A HE STATION

STATE OF NEW MEXICO ENERGYN AND MINERALS DEPARTMENT OFFICIALSERVATION DIVISION '90 JUL 27 HIT 930 1-24-90

POST OFFICE BOX 1980 HOBBS, NEW MEXICO 88241-1980 (505) 393-6161

GARREY CARRUTHERS

OIL CONSERVATION DIVISION P. O. BOX 2088 SANTA FE, NEW MEXICO 87501

RE: Proposed: MC______ DHC_____ NSL_____ NSP_____ SWD_____ WFX_____ PMX

Gentlemen:

I have examined the application for the:

Mark owen #8-M 35-218-37E Lease & Well No. Unit S-T-R il Co. Operator

and my recommendations are as follows:

 \mathcal{N}

Yours very truly Jerrý Sexton Supervisor, District 1

/ed