



**Marathon
Oil Company**

Mid-Continent Region
Production Unit, United States
OIL CONSERVATION DIVISION
RECEIVED
MAR 25 AM 9 13
P.O. Box 2088
Midland, Texas 79702
Telephone 915/682-1626

March 20, 1992

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

RE: Request for Exception to Rule 303-A
Downhole Commingling
Marathon Oil Company
Mark Owen Well No. 4
Unit K, 1,980' FSL and 1,980' FWL
Section 35, T-21-S, R-37-E
Drinkard and Wantz Abo Formations
Drinkard 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 Drinkard and Wantz Abo Pools in Lea County, New Mexico.

Currently, the well is dual completed with the Drinkard flowing up the annulus and Wantz Abo being pumped up the tubing. By allowing the commingling of the two zones, it would economically justify keeping the well on production for an extended period, and minimize any associated waste.

Enclosed is pertinent data supporting this application as outlined in Rule 303-C. If additional information is necessary, please contact me at the letterhead address.

Sincerely,

A handwritten signature in cursive script that reads 'R. W. Tracy'.

R. W. Tracy
Operations Engineering Supervisor

xc: S. P. Guidry, Hobbs

RWT/MMA/027.274/sk

Offset Operators List
Mark Owen Well No. 4

Chevron USA, Inc.
P. O. Box 1150
Midland, Texas 79702-1150

Conoco Inc.
10 Desta Drive West
Midland, Texas 79705

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

Oxy USA Inc.
P. O. Box 50250
Midland, Texas 79710-0250

- (a) Marathon Oil Company
P. O. Box 552
Midland, Texas 79702
- (b) Mark Owen Well No. 4
Unit K, 1,980' FWL and 1,980' FSL
Section 35, T-21-S, R-37=E
Lea County, New Mexico
Commingled Zones: Drinkard and Wantz Abo
- (c) Plats (2) of area attached
- (d) The Form C-116 for the Drinkard and Wantz Abo pools are attached. These values will be used to allocate production for each zone (assumed gas rates stay the same).
- (e) Production decline curves for both the Drinkard and Wantz Abo are attached.
- (f) Estimated bottom hole pressures for each zone:
Drinkard: 680
Wantz: 800 psig
- (g) Marathon oil Company has commingled these fluids at the surface and has encountered no incompatibility problems.
- (h) If the downhole commingling is approved, the present artificial lift system can extend the economic life of the well with minimal waste.

The value of the produced hydrocarbons should not be altered by commingling production. Therefore the same market price should be obtained as if both zones were produced individually.

- (i) Production from the latest GOR test shows:

	<u>OIL (BOPD)</u>	<u>GAS (MCFPD)</u>	<u>WATER (BWPD)</u>
Drinkard	0	46	0
Wantz Abo	$\frac{5}{5}$	$\frac{17}{63}$	$\frac{0}{0}$

Therefore the allocated percentages should be:

	<u>OIL (%)</u>	<u>GAS (%)</u>
Drinkard	0	73
Wantz Abo	100%	27

- (j) Ownership of the two pools to be commingled is common and correlative rights will not be violated.
- (k) By copy of this letter, we are notifying all offset operators of the proposed commingling by certified mail.

Submit 3 Copies
to Appropriate
District Office

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-103
Revised 1-1-89

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

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

WELL API NO.

5. Indicate Type of Lease
STATE ☐ FEE ☒

6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A
DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT"
(FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well:
OIL WELL ☐ GAS WELL ☐ OTHER ☐ Drinkard - Gas
Wantz Abo - Oil & Gas

2. Name of Operator
Marathon Oil Company

3. Address of Operator
P. O. Box 552, Midland, Texas 79702

4. Well Location
Unit Letter K : 1980 Feet From The South Line and 1980 Feet From The West Line

Section 35 Township 21-S Range 37-E NMPM Lea County

10. Elevation (Show whether DF, RKB, RT, GR, etc.)
KB 3,384' GL 3,371'

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data
NOTICE OF INTENTION TO: SUBSEQUENT REPORT OF:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐ REMEDIAL WORK ☐ ALTERING CASING ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐ COMMENCE DRILLING OPNS. ☐ PLUG AND ABANDONMENT ☐
PULL OR ALTER CASING ☐ CASING TEST AND CEMENT JOB ☐
OTHER: Commingle ☐ 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 commingle the Drinkard and Wantz Abo

** (Drinkard and Wantz Abo)

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

SIGNATURE M. Mobin Ahmad TITLE Petroleum Engineer DATE Feb. 24, 1992

TYPE OR PRINT NAME M. Mobin Ahmad TELEPHONE NO. (915) 682-1626

(This space for State Use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

OIL CONSERVATION DIVISION

P.O. Box 190, Hobbs, NM 88240
DISTRICT I
P.O. Drawer DD, Artesia, NM 88210
DISTRICT II
1000 Rio Grande Rd., Aztec, NM 87410

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

GAS - OIL RATIO TEST

Operator		Pool		County										
Marathon Oil Company		Drinkard		Lea										
Address		TYPE OF TEST - (P)		Completion		Special								
P. O. Box 552, Midland, Texas 79702		Scheduled ☒		☐		☐								
LEASE NAME	WELL NO.	LOCATION			DATE OF TEST	CHOKE SIZE	TRQ. PRESS.	DAILY ALLOW-ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST			GAS - OIL RATIO CU FT/BBL	
		U	S	T						R	WATER FMS	GRAV. OIL		OIL DRLS
W. S. Marshall "B"	2													
	*3	M	27	21	37	S.I.	--	30	Gas	24	5	3	194	64,667
		K	27	21	37	4-25-91	F							
Lou Worthan														
Mark Owen														

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

Carl A. Bagwell
Signature
Carl A. Bagwell Engineering Technician
Printed name and title
6-4-91 (915) 682-1626
Date Telephone No.

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.

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

OIL CONSERVATION DIVISION

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

District Office:
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

GAS - OIL RATIO TEST

Operator Marathon Oil Company		Pool Wantz Abo		County Lea										
Address P. O. Box 552, Midland, Texas 79702		TYPE OF TEST - (X)		Completion ☐ Scheduled ☐										
LEASE NAME Mark Owen	WELL NO. 4	LOCATION			DATE OF TEST 4-5-91	CHOKE SIZE P	TBG. PRESS. 25	DAILY ALLOW-ABLE	LENGTH OF TEST HOURS 24	PROD. DURING TEST			GAS - OIL RATIO CU FT/BBL	
		U	S	T						R	WATER FT/LS	GRAV. OIL		OL BBL S
		K	35	21	37			*		0	--	5	17	34.00
Allowable Request														

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.

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

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

Signature

J. R. Jenkins, Northwest Operations Sup't.
Printed name and title

4-9-91

Date

(915)682-1626

Telephone No.

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised 1-1-89

OIL CONSERVATION DIVISION

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

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Santa Fe, New Mexico 87504-2088

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

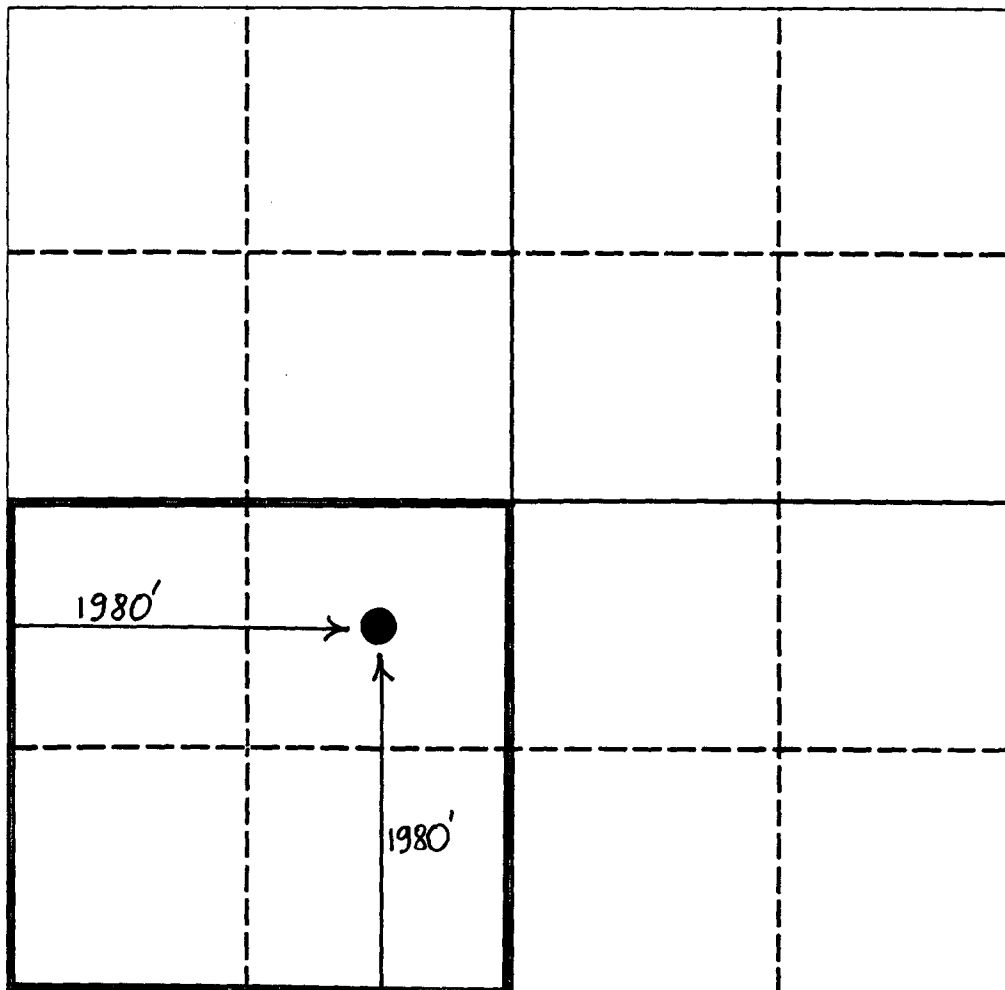
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator Marathon Oil Company			Lease Mark Owen		Well No. 4
Unit Letter K	Section 35	Township 21-s	Range 37-E	County Lea	
Actual Footage Location of Well: 1,980 feet from the South line and 1,980' feet from the West line					
Ground level Elev. 3,371'	Producing Formation			Pool	Dedicated Acreage: 160 Acres

- Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
- If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
- If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?
☐ Yes ☐ No If answer is "yes" type of consolidation _____
If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary). _____
No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



0 330 660 990 1320 1650 1980 2310 2640 2000 1500 1000 500 0

OPERATOR CERTIFICATION

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

Signature: *M. Mobin Ahmad*

Printed Name
M. Mobin Ahmad

Position
Petroleum Engineer

Company
Marathon Oil Company

Date
February 24, 1992

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 knowledge and belief.

Date Surveyed

Signature & Seal of
Professional Surveyor

Certificate No.

[illegible]

T-21-S

T-22-S



**Mid-Continent Region
Production United States**

MARK OWEN LEASE
SECTION 35, T-21-S, R-37-E
LEA COUNTY, NEW MEXICO

PRESENT COMPLETION

MARK OWEN NO. 4
1980' FSL & 1980' FWL UNIT K
SECTION 35, T-21S, R-37E
LEA COUNTY, NEW MEXICO

TD: 7435' PBD: 7411'

KB: 3384'

13-3/8" @ 302'

13-3/8" 48# H-40 SET @ 302' CEMENT W/250sx

TUBING: 2-3/8" 4.7# J-55 @ 7282'

SLIDING SLEEVE @ 6425'

RODS: 139 - 3/4" X 25', 70 - 5/8" X 25'
1 - 2" X 1-1/2" X 12' PUMP #M-5

8-5/8" @ 2794'

8-5/8" 32# J-55 SET @ 2794', CEMENT W/1500sx

PADDOCK PERFS: 5132', 34', 54', 61', 63', 70', 72', 80', 5201', 02', 06', 07', 1 JSPF (12 HOLES) SQUEEZED.

BLINEBRY PERFS: 5695', 96', 5729', 30', 55', 56', 72', 73', 5805', 06', 49', 50', 65', 66', 80', 81', 1 JSPF (16 HOLES) SQUEEZED.

ADD PERFS: 5679', 80', 91', 92', 95', 96', 98', 99', 5711', 12', 29', 30', 1 JSPF (12 HOLES) SQUEEZED

5-1/2" @ 6452'

5-1/2" 17# J-55 SET @ 6452', CEMENT W/500sx

PACKER SET @ 6506'

DRINKARD: OPEN HOLE (ABANDONED)

PERFS: 6308', 10', 18', 20', 22', 35', 42', 44', 57', 68', 70', 72', 74', 98', 6415', 17', 19', 21', 31', 32', 1 JSPF (19 HOLES)

WANTZ ABO PERFS: 6766', 86', 91', 6814', 18', 23', 30', 42', 83', 99', 6906', 13', 17', 74', 84', 98', 7019', 7102', 08', 94', 7211', 41', 48', 64', 66', 72', 74', 1 JSPF (27 HOLES).

ADD: 6552', 60', 68', 75', 80', 82', 84', 99', 6623', 25', 42', 46', 55', 57', 59', 61', 64', 71', 97', 6700', 04', 09', 19', 32', 38', 54', 1 JSPF (26 HOLES)

4" 11# HYDRIL FJ N-80 LINER (6443'-7435') CEMENT W/60sx

TD: 7435' HISTORY:

DRILLED 1947 TO 6536'
1947: LOWER DRINKARD OPEN HOLE COMPLETED.
IP: 469 BOPD GOR 732 FLOWING.

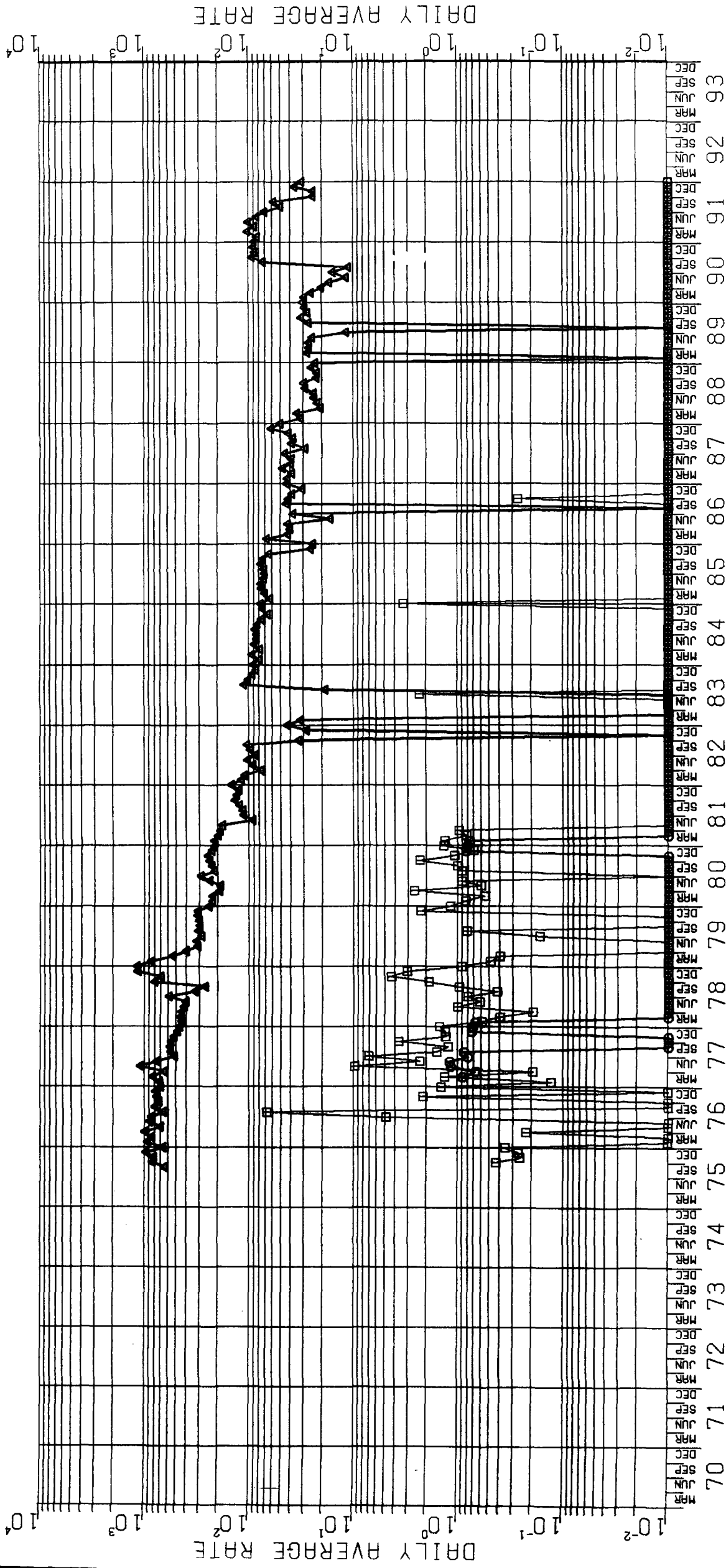
1953: A/3500 GAL WHP 2500# IP: 23 BOPD GOR
8300 PROD INCREASE F/12 BOPD TO 23 BOPD.
1964: PERF BLINEBRY (5695'-5881') A/1200 GAL FRAC
W/16K LEASE OIL & 14K SAND SQUEEZE PERFS
REPERF BLINEBRY (5679'-5730') A/1000 FRAC
W/12K OIL & 10K SAND SQUEEZE PERFS.

1969: PBD 5323' PADDOCK PERF PADDOCK (5123'-5207') A/
2000 GAL SQUEEZE PERFS DRINKARD DEPLETED (Q/H).

1974: DEEPEN TO 7435' (ABO) SET LINER PERF ABO A/6000
GAL PERF UPPER DRINKARD A/2700 GAL FRAC W/30K
LEASE CRUDE AND 27K SAND ABO IP: 83 BOPD & 2 BW
837 MCFD DRINKARD IP: NONE.

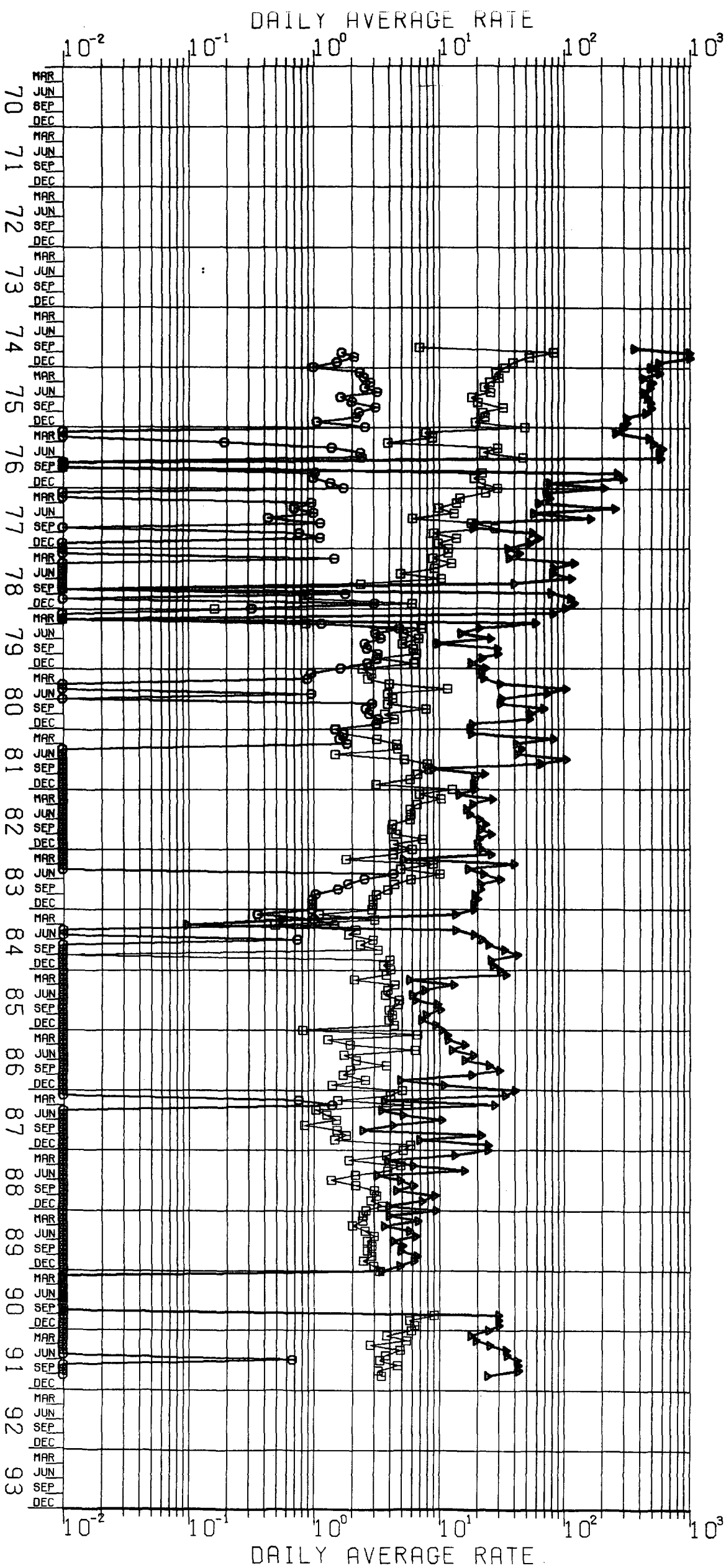
1978: PERF ABO A/5000 GAD DRINKARD: 126 1800 MCFD. MCFD.

FIELD - DRINKARD
 RESERVOIR - DRINKARD
 LEASE - OWEN, MARK - TUBB
 WELL - MARK OWEN-NO. 4



O+C CALENDAR DLY AVG
 GAS CALENDAR DLY AVG
 WTR CALENDAR DLY AVG

FIELD - DRINKARD
RESERVOIR - ABO
LEASE - OWEN, MARK - TUBB
WELL - MARK OWEN-NO. 4(3)



O+C CALENDAR DLY AVG _____
GAS CALENDAR DLY AVG _____
WTR CALENDAR DLY AVG _____