

DATE 3/26/01	SUBMITTER 4/16/01	ENGINEER DC	LOGGED IN KV	TYPE DHC	APP NO. 108647918
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

1220 South St. Francis Drive, Santa Fe, NM 87505



2506

ADMINISTRATIVE APPLICATION COVERSHEET

THIS COVERSHEET IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] TYPE OF APPLICATION - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Simultaneous Dedication

☐ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement

☒ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery

☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

[2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or ☒ Does Not Apply

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners

[B] ☐ Offset Operators, Leaseholders or Surface Owner

[C] ☐ Application is One Which Requires Published Legal Notice

[D] ☐ Notification and/or Concurrent Approval by BLM or SLO

U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐ Waivers are Attached

[3] INFORMATION / DATA SUBMITTED IS COMPLETE - Certification

I hereby certify that I, or personnel under my supervision, have reviewed the applicable Rules and Regulations of the Oil Conservation Division. Further, I assert that the attached application for administrative approval is accurate and complete to the best of my knowledge and where applicable, verify that all interest (WI, RI, ORRI) is common.

I understand that any omission of data (including API numbers, pool codes, etc.), pertinent information and any required notification is cause to have the application package returned with no action taken.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Dean Chumbley

Print or Type Name

Signature

Authorized Agent

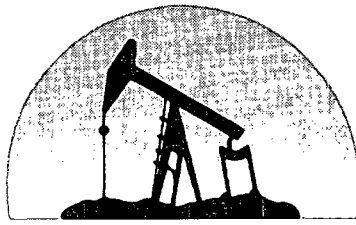
Title

3-22-01

Date

marbobland@hdc-nm.com

e-mail Address

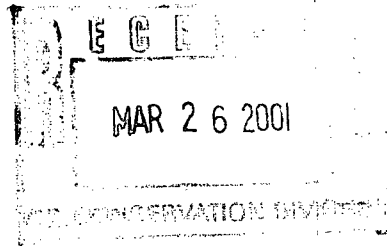


marbob
energy corporation

March 22, 2001

New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Attention: Engineering Bureau



RE: Application for Downhole Commingling

Gentlemen:

Marbob Energy Corporation respectfully requests approval to downhole commingle production in our "D" State No. 1 well. Enclosed, in triplicate, is the application and supporting documentation. The ownership is identical as to the zones being commingled. We hope we have submitted all the information needed to reach a decision. However, if you are in need of further data, Please do not hesitate to contact us.

Thank you for reviewing this application.

Sincerely,

Dean Chumbley
Land Department

DC/mm
Enclosures

District I
1625 N. French Drive, Hobbs, NM 88240

District II
811 South First Street, Artesia, NM 88210

District III
1000 Rio Brazos Road, Aztec, NM 87410

District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-107A
Revised May 15, 2000

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

APPLICATION TYPE
☒ Single Well
☐ Establish Pre-Approved Pools
EXISTING WELLBORE
☒ Yes ☐ No

APPLICATION FOR DOWNHOLE COMMINGLING

Marbob Energy Corporation P. O. Box 227 Artesia, NM 88211-0227
Operator Address
"D" State 1 M-25-17S-28E Eddy
Lease Well No. Unit Letter-Section-Township-Range County
OGRID No. 14049 Property Code 25375 API No. 30-015-31257 Lease Type: ☐ Federal ☒ State ☐ Fee

DATA ELEMENT	UPPER ZONE	INTERMEDIATE ZONE	LOWER ZONE
Pool Name	Artesia Queen 3230		Artesia Glorietta
Pool Code	Grayburg San Andres		Yeso 96830
Top and Bottom of Pay Section (Perforated or Open-Hole Interval)	2770' - 3746' est.		3922' - 4120'
Method of Production (Flowing or Artificial Lift)	Oil (Artificial Lift)		Oil (Artificial Lift)
Bottomhole Pressure (Note: Pressure data will not be required if the bottom perforation in the lower zone is within 150% of the depth of the top perforation in the upper zone)	1300 psi est.		1700 psi est.
Oil Gravity or Gas BTU (Degree API or Gas BTU)	36° API		39° API
Producing, Shut-In or New Zone	Not tested yet		Producing
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.)	Date: Rates: N/A	Date: Rates:	Date: Jan. 2001 Rates: 50 bopd/50 mcfd 85 bwpd
Fixed Allocation Percentage (Note: If allocation is based upon something other than current or past production, supporting data or explanation will be required.)	Oil Gas 26 % 40 %	Oil Gas % %	Oil Gas 74 % 60 %

ADDITIONAL DATA

Are all working, royalty and overriding royalty interests identical in all commingled zones? Yes ☒ No ☐
If not, have all working, royalty and overriding royalty interest owners been notified by certified mail? Yes ☐ No ☐
Are all produced fluids from all commingled zones compatible with each other? Yes ☒ No ☐
Will commingling decrease the value of production? Yes ☐ No ☒
If this well is on, or communitized with, state or federal lands, has either the Commissioner of Public Lands or the United States Bureau of Land Management been notified in writing of this application? Yes ☒ No ☐
NMOCD Reference Case No. applicable to this well: _____

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 working, royalty and overriding royalty interests for uncommon interest cases.
- Any additional statements, data or documents required to support commingling.

PRE-APPROVED POOLS

If application is to establish Pre-Approved Pools, the following additional information will be required:

- List of other orders approving downhole commingling within the proposed Pre-Approved Pools
- List of all operators within the proposed Pre-Approved Pools
- Proof that all operators within the proposed Pre-Approved Pools were provided notice of this application.
- Bottomhole pressure data.

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

SIGNATURE Brian Collins TITLE Engineer DATE 22 Mar 01

TYPE OR PRINT NAME Brian Collins TELEPHONE NO. (505) 748-3303

☐ **AMENDED REPORT**

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
	96830	ARTESIA GLORIETTA YESO
Property Code	Property Name	Well Number
25375	"D" STATE	1
OGRID No.	Operator Name	Elevation
14049	MARBOB ENERGY CORPORATION	3660

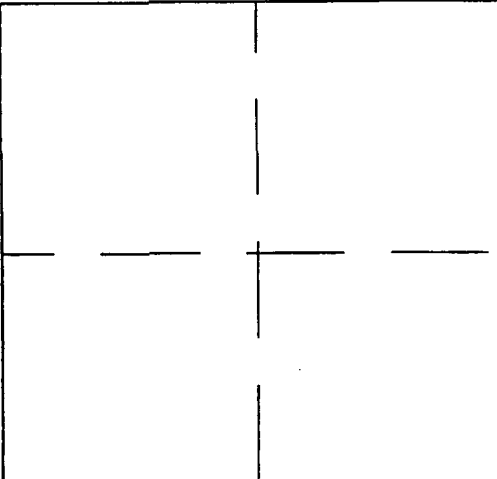
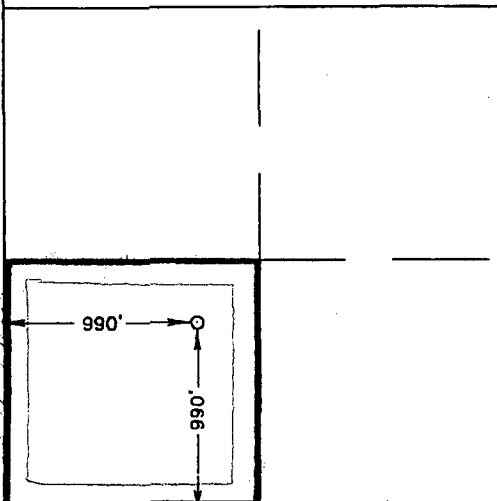
Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	25	17 S	28 E		990	SOUTH	990	WEST	EDDY

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
Dedicated Acres 40	Joint or Infill	Consolidation Code	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

	<p>OPERATOR CERTIFICATION</p> <p><i>I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.</i></p> <p><u>Robin Cockrum</u> Signature</p> <p><u>ROBIN COCKRUM</u> Printed Name</p> <p><u>PRODUCTION ANALYST</u> Title</p> <p><u>7/12/00</u> Date</p>
	<p>SURVEYOR CERTIFICATION</p> <p><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></p> <p><u>JULY 6, 2000</u> Date Surveyed</p> <p><u>RONALD L. EIDSON</u> Signature of Registered Professional Surveyor</p> <p><u>DC</u></p> <p><u>7/10/00</u> Date of Survey</p> <p><u>00-11-0861</u> Surveyor's License No.</p> <p>Certificate No. <u>RONALD L. EIDSON</u> 3239 <u>GARY EIDSON</u> 12641 <u>MACON McDONALD</u> 12185</p>

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

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-102
Revised October 18, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-31257		² Pool Code 96830		³ Pool Name ARTESIA QUEEN, GRAYBURG, SAN ANDRES	
⁴ Property Code 25375		⁵ Property Name "D" STATE			⁶ Well Number 1
⁷ OGRID No. 14049		⁸ Operator Name MARBOB ENERGY CORPORATION			⁹ Elevation 3660

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	25	17S	28E		990	SOUTH	990	WEST	EDDY

¹¹ Bottom Hole Location If Different From Surface

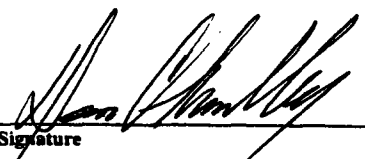
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
40			

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

¹⁷ OPERATOR CERTIFICATION

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


Signature
DEAN CHUMBLEY
Printed Name
LAND DEPARTMENT
Title
3-20-01
Date

¹⁸ 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 Surveyer:

Certificate Number

APPLICATION FOR DOWNHOLE COMMINGLING
MARBOB ENERGY CORPORATION
"D" STATE NO. 1
M-25-17S-28E, EDDY COUNTY

DATA SUPPORTING OIL AND GAS ALLOCATION FOR EACH ZONE

FOR THE SAN ANDRES, 33 AREA WELLS WERE USED TO DERIVE AN AVERAGE EUR = 33.9 MBO, 101.7 MMCF (SEE ATTACHED PRODUCTION PLOT)
FOR THE YESO, 10 AREA WELLS WERE USED TO DERIVE AN AVERAGE EUR = 97.8 MBO, 150.3 MMCF (SEE ATTACHED PRODUCTION PLOTS)
PRODUCTION TO DATE ON THE "D" STATE LEASE INDICATES THAT THE ABOVE AVERAGE EUR IS REASONABLE IN THE YESO

YESO WELL DATA:

LEASE	EUR OIL (MBO)	EUR GAS # (MMCF)	WELLS
B440	100.2	135.3	5
BR549	93.5	187	3
MUSKEGON	98.4	132.8	2

WEIGHTED 97.8 150.3
AVG. EUR

SAN ANDRES WELL DATA:

	EUR OIL (MBO)	EUR GAS (MMCF)
33 MARBOB WELLS	33.9	101.7

ALLOCATION SUMMARY:

OIL---YESO = $97.8 \text{ MBO} / (97.8 \text{ MBO} + 33.9 \text{ MBO}) = 0.74$

OIL---SAN ANDRES = $33.9 \text{ MBO} / (97.8 \text{ MBO} + 33.9 \text{ MBO}) = 0.26$

GAS---YESO = $150.3 \text{ MMCF} / (150.3 \text{ MMCF} + 101.7 \text{ MMCF}) = 0.60$

GAS---SAN ANDRES = $101.7 \text{ MMCF} / (150.3 \text{ MMCF} + 101.7 \text{ MMCF}) = 0.40$

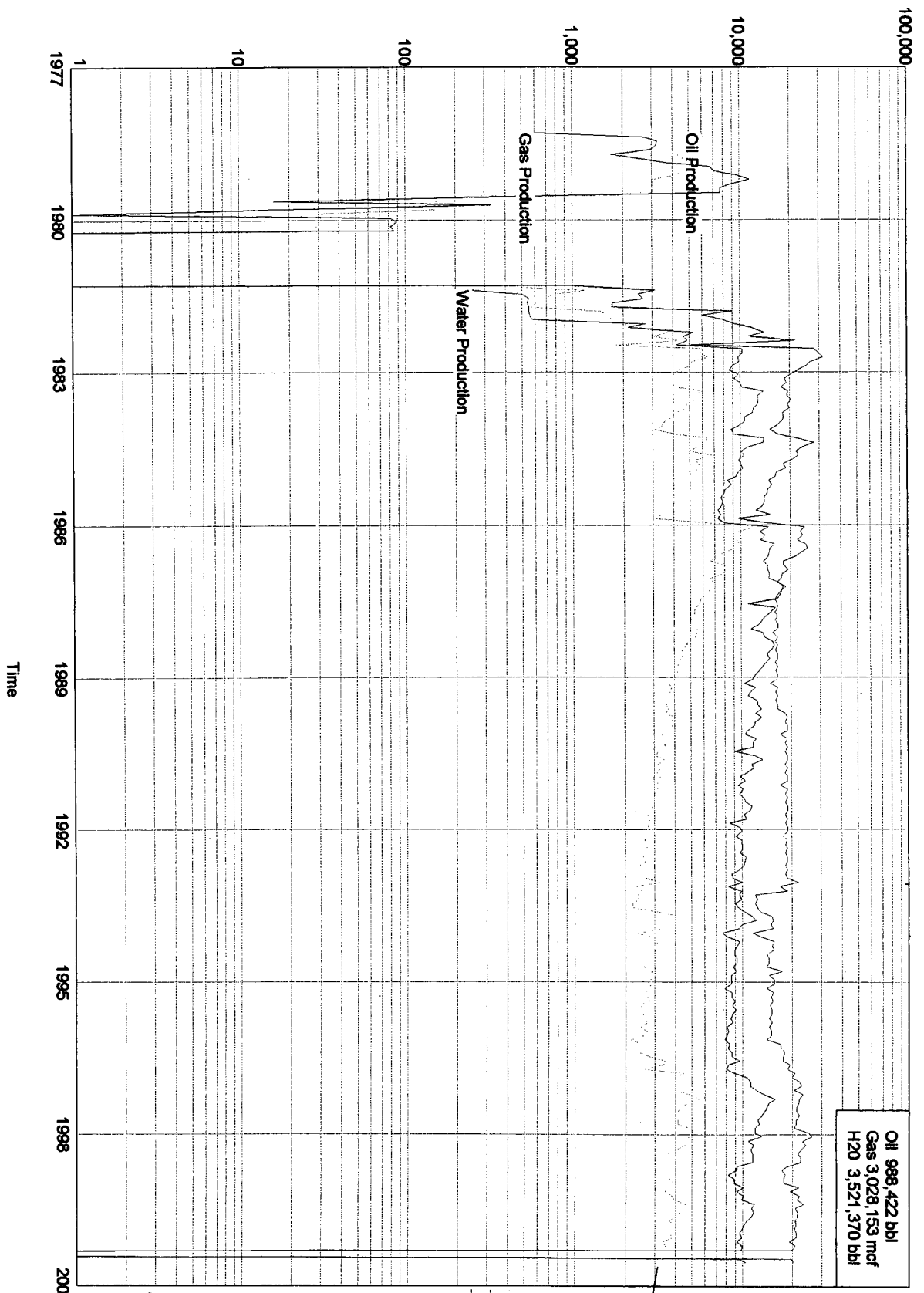
33 San Andres Wells
 Sec. 26, 27, 34 - 175-28e
 Eddy, NM

Lease Name: MULTIPLE
 County, State: EDDY, Unknown
 Operator: MARBOB ENERGY CORPORATION
 Field: MULTIPLE
 Reservoir: QUEEN-GRAYBURG-SAN A
 Location:

Avg. EUR per well = 33.9 MBO
 San Andres
 Avg. GOR = 3000 (Avg 101.7 MMcf/well)

MULTIPLE - MULTIPLE

Production Rates



depr = 13%/yr.

$$ROR = \frac{-365(Q_1 - Q_2)}{\ln(1-d)}$$

$$Q_1 = 110 \text{ bopd}$$

$$Q_2 = 60 \text{ bopd (33 wells)}$$

$$d = 13\%/yr$$

$$ROR = \frac{-365(110 - 60)}{\ln(1 - .13)}$$

$$= 131,048 \text{ bo}$$

$$EUR = 988,422$$

$$+ 131,048$$

$$EUR/well = \frac{1,119,470}{33}$$

$$= 33.923 \text{ MBO}$$

5 Yeso Wells

These wells are used as an analog to the "D" state Yeso wells because the "D" state doesn't have enough production history.

Lease Name: B 440 FEDERAL
County, State: EDDY, Unknown
Operator: MARBOB ENERGY CORPORATION
Field: EMPIRE EAST
Reservoir: YESO
Location:

B 440 FEDERAL - EMPIRE EAST

Avg. EUR per well = 100.2 MBO
Yeso
Avg. GOR = 1350 (Avg 135.3 MMCF/well)

100,000

10,000

1,000

1997

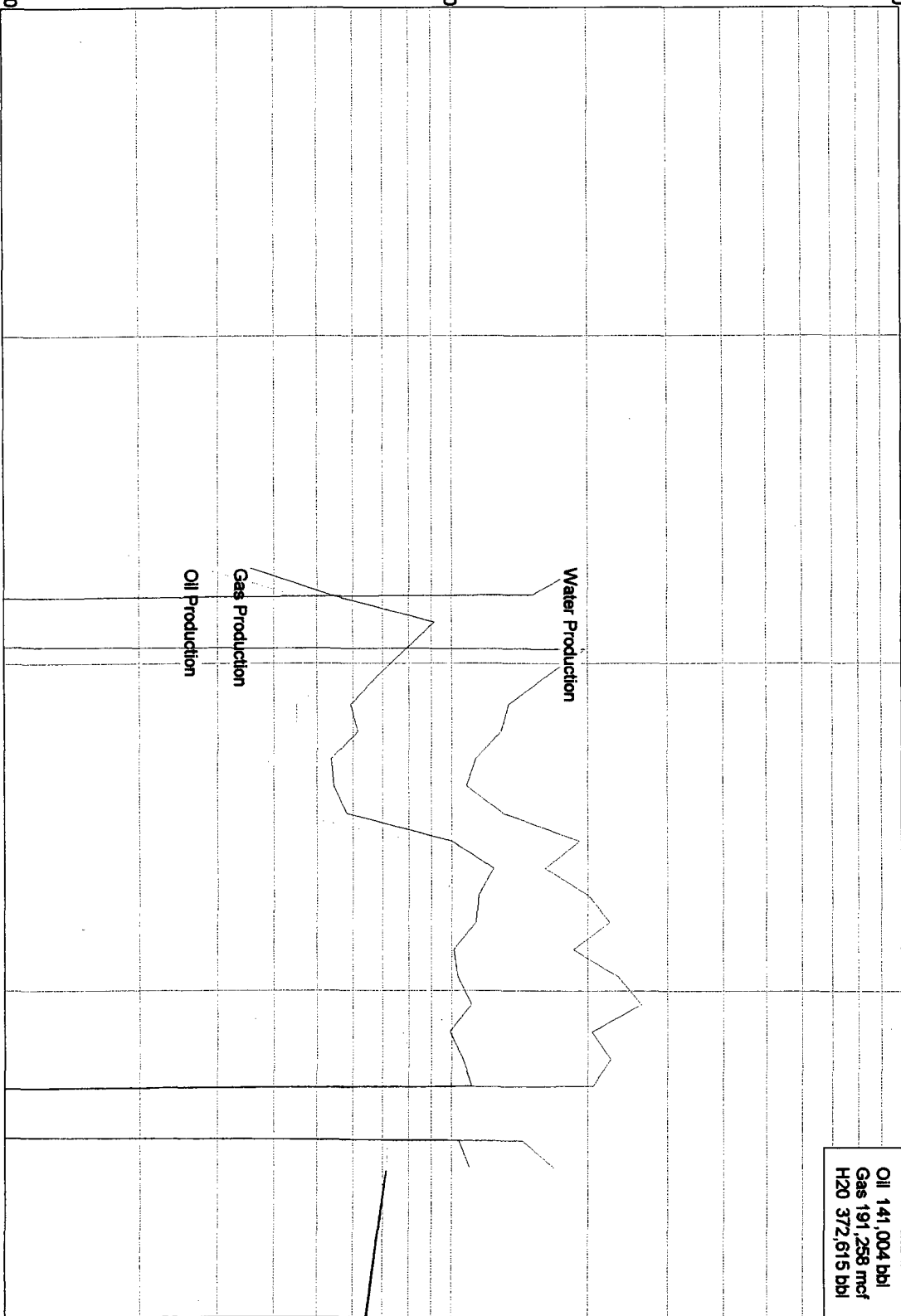
1998

1999

2000

2001

Time



Oil 141,004 bbl
Gas 191,258 mcf
H2O 372,615 bbl

$$RVR = \frac{-365(Q_1 - Q_2)}{\ln(1-d)}$$

$$Q_1 = 230 \text{ bopd}$$

$$Q_2 = 10 \text{ bopd}$$

$$d = 20\%/yr$$

$$RVR = \frac{-365(230 - 10)}{\ln(1 - .20)}$$

$$= 359,858 \text{ BO}$$

$$EUR = 141,004$$

$$+ 359,858$$

$$500,862 \text{ BO}$$

$$EUR/well = \frac{500,862}{5}$$

$$= 100,172 \text{ BO}$$

Oil Production
Gas Production
Water Production

$$d_{exp} = 20\%/yr.$$

3 Yeso Wells

3 wells currently producing an average of 50 bopd per well (GOR = 2000)
 Cumulative production to date (through Jan 01) = 45,000 BO (Avg. 15,000 BO per well)
 Production analog to "D" state.

Lease Name: BR-549 STATE
 County, State: EDDY, Unknown
 Operator: MARBOB ENERGY CORPORATION
 Field: EMPIRE EAST
 Reservoir:
 Location:

BR-549 STATE - EMPIRE EAST

Avg. EUR per well = 93.5 MBO
 Yeso

Avg. GOR = 2000 (Avg. 187 MMCF/well)

$$ROR = \frac{-365(Q_1 - Q_2)}{\ln(1-d)}$$

$$Q_1 = 50 \text{ bopd}$$

$$Q_2 = 2 \text{ bopd}$$

$$d = \text{Assume } 20\%/yr$$

$$ROR = \frac{-365(50-2)}{\ln(1-.2)}$$

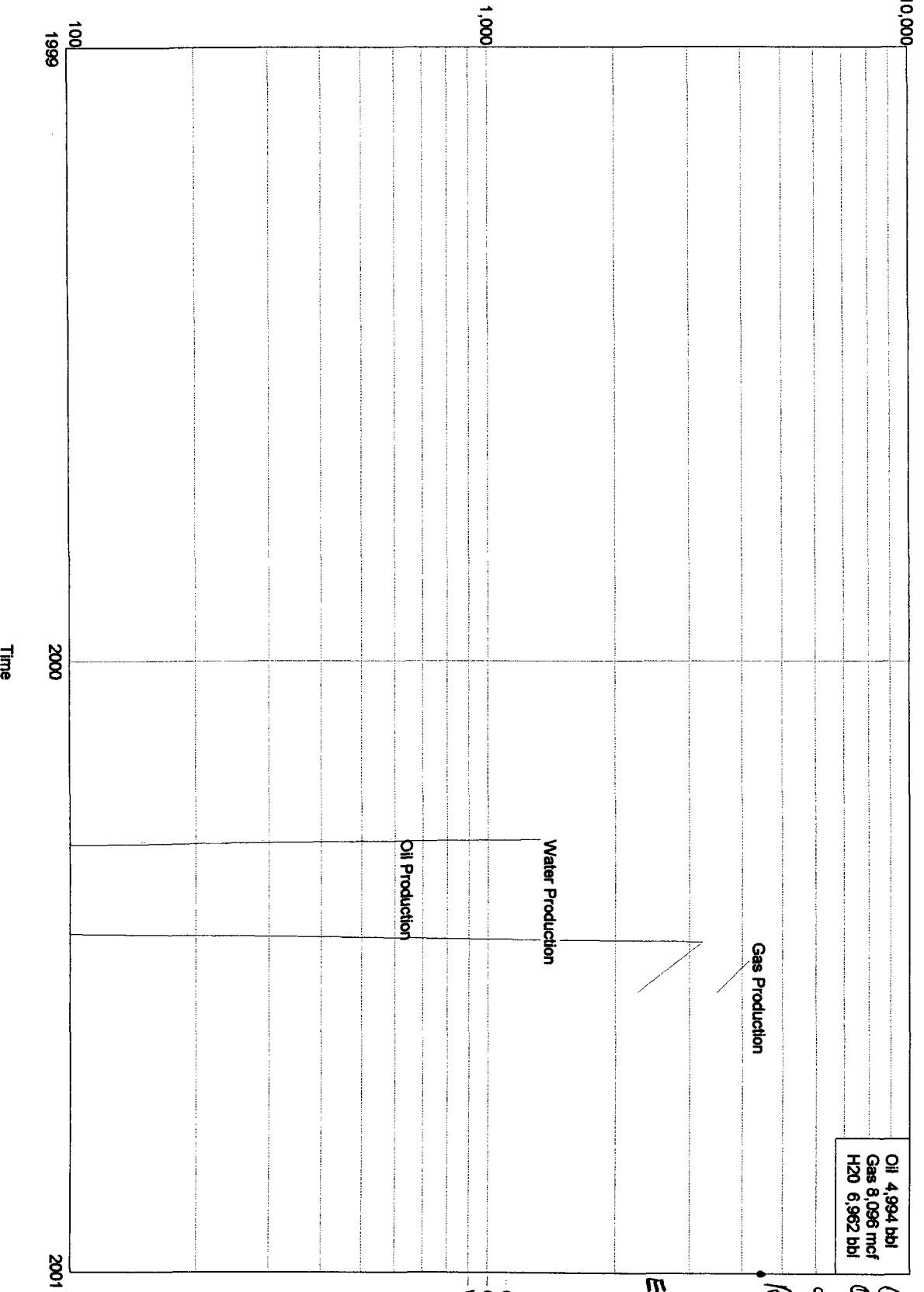
$$= 78,515 \text{ BO}$$

$$EUR = 15,000 \text{ BO}$$

$$+ 78,515 \text{ BO}$$

$$93,515 \text{ BO}$$

Oil Production
 Gas Production
 Water Production



Production Rates

2 Yeso Wells

Production analog to "D" State.

Lease Name: MUSKEGON SOUTH STATE
 County, State: EDDY, UNKNOWN
 Operator: MARBOB ENERGY CORPORATION
 Field: EMPIRE EAST
 Reservoir: MULTIPLE
 Location:

Avg EUR per well = 98.4 MBO
Yeso

Avg. GOR: 1350 (Avg. 132.8 MMCF/well)

MUSKEGON SOUTH STATE - EMPIRE EAST

$$RUR = \frac{-365 (q_1 - q_{a1})}{\ln(1-d)}$$

Oil 25,042 bbl
 Gas 33,157 mcf
 H2O 66,648 bbl

$q_1 = 110$ bopd
 $q_{a1} = 5$ bopd
 $d = 20\%/yr.$

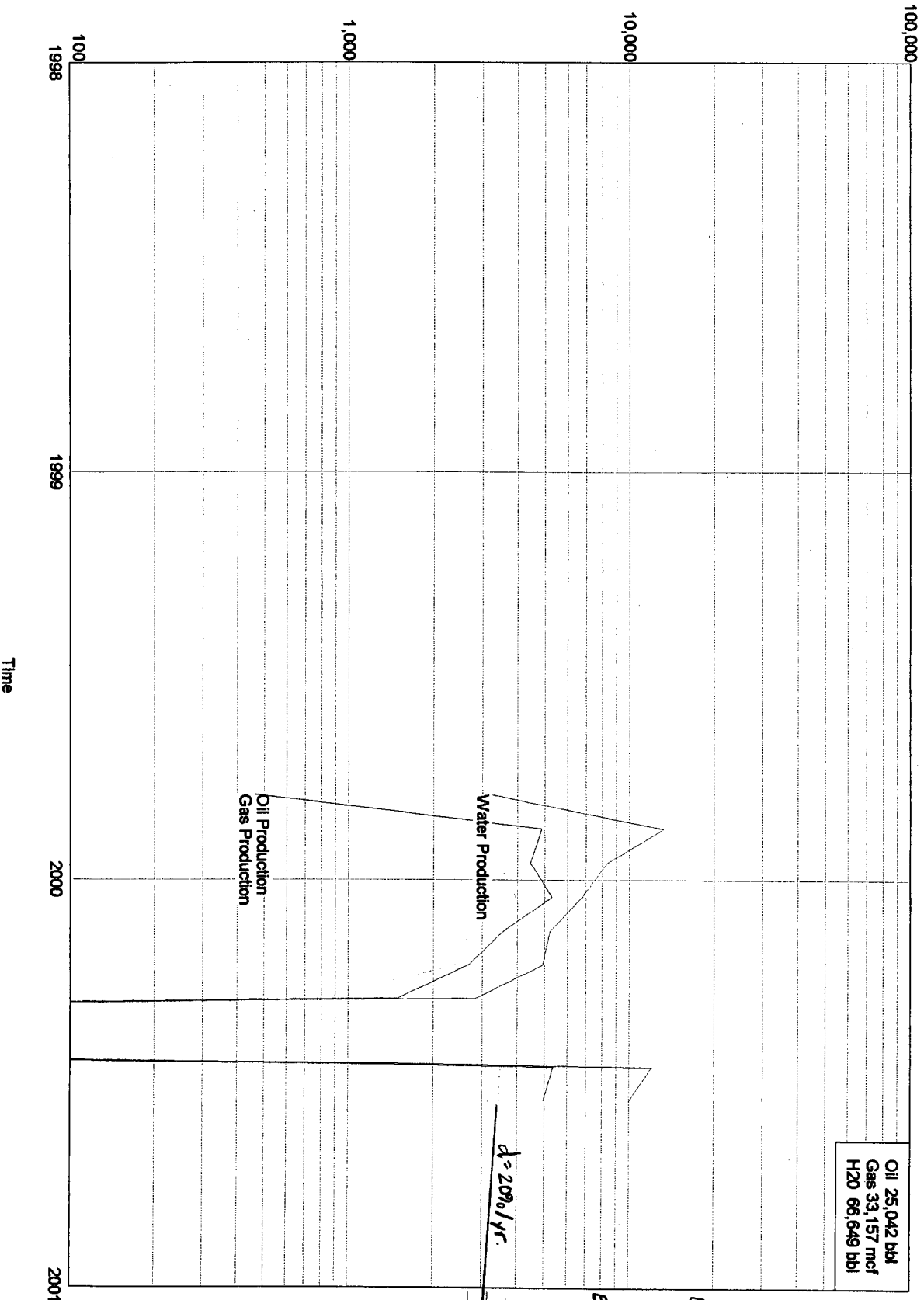
$$RUR = \frac{-365 (110-5)}{\ln(1-.2)} = 171,750 BO$$

$$EUR = \frac{25,042 + 171,750}{2} = 196,792 BO$$

$$EUR/well = \frac{196,792}{2} = 98,396 BO$$

Oil Production
 Gas Production
 Water Production

$d = 20\%/yr.$



Production Rates

7.5

Recent Production
"D" State #1

OPERATOR: MARBOS ENERGY CORPORATION

| OGRID: 014049

| MONTH/YEAR 01/01

| PAGE 60 OF 63

			INJECTION		PRODUCTION					DISPOSITION OF OIL, GAS, AND WATER						
7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
POOL NO. AND NAME PROPERTY NO. AND NAME WELL NO. AND U-I-S-T-R API NUMBER	C D E	C D E	C D E	C D E	HBLS OF OIL/COND- ENSATE PRODUCED	HBLS OF WATER PRODUCED	GAS PRODUCED (MCF)	DAYS PRODUCED	C D E	POINT OF DISPOSI- TION	GAS BTU OR OIL API GRAV	OIL ON HAND AT BEGINNING OF MONTH	VOLUME (HBLS/MCF)	TRANS- PORTER OGRID	C D E	OIL ON HAND AT END OF MONTH
024886 T.H. STATE																
001 F-34-178-28E 30-015-30762	P				236	1311	525	31		O G W	2824488 2824489	38.7 1402	186 355 525 1311	015694 036785		67
025375 D STATE															O	
001 M-25-178-28E 30-015-31257	P				1535	2637	1468	31								
003 O-26-178-28E 30-015-30976	P				1089	1663	884	31								
010 D-36-178-28E 30-015-31165	P				1064	7136	1435	31								
018 L-35-178-28E 30-015-30977	P				1014	8201	801	31								
021 I-25-178-28E 30-015-30975	P				990	6911	934	31		O G W	2825596 2825597	39.2 1596	637 6014 5522 26548	015694 001009	O	315
025702 LP STATE																
001 E-05-185-28E 30-015-31086	P				84	1588	176	31								
003 M-06-185-28E 30-015-31087	P				40	1536	42	30		O G W	2826075 2820676	38.4 1188	261 181 218 3124	034019 036785	O	204
96831 CEDAR LAKE; YESO																
023300 IEE FEDERAL																

D. St. #1 3922-4120'