

Mobil Exploration & Producing U.S. Inc.

June 13, 1990

P.O. BOX 633
MIDLAND, TEXAS 79702

MIDLAND DIVISION

State of New Mexico
Energy and Minerals Department
Oil Conservation Division
State Land Office Building
P.O. Box 2088
Santa Fe, New Mexico 87501

RECEIVED

JUN 20 1990

Attention: Florene Davidson

OIL CONSERVATION DIVISION

NOTICE OF APPLICATION FOR UNORTHODOX
WELL LOCATION AND EXCEPTION TO RULE
303 (A)
BRIDGES STATE WELL NO. 36
VACUUM-GLORIETA POOL,
VACUUM-BLINEBRY POOL,
SEC. 25- T-17-S, R-34-E
LEA COUNTY, NEW MEXICO

9999

Dear Ms. Davidson:

Mobil Exploration & Producing U. S. Inc. (MEPUS), as Agent for Mobil Producing Texas & New Mexico Inc., respectfully requests authority to recomplete the subject well and produce in the Vacuum Glorieta and Vacuum Blinebry reservoir. This well is presently completed in the Vacuum Grayburg/San Andres and is temporarily abandoned with a bridge plug above the San Andres perforations. New Mexico Oil Conservation Department docket's case has been set for July 11, 1990.

To produce these two zones, Mobil seeks authority to downhole commingle production from the Blinebry and Glorieta reservoirs. An offset who recently received downhole commingling approval is the Marathon McAllister State No. 9, Case DHC-751 dated February 20, 1990. Bridges State No. 36 meets all prerequisites for commingling, as set out in Rule 303(C). The ownership of these zones is common and has been successfully commingled on adjacent leases with no incompatibility of fluids found.

Mobil

New Mexico Oil Conservation Division
Bridges State No. 36

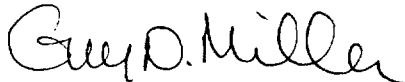
In support of this application, the following is submitted:

- 1) Forms C-101 and C-102
- 2) Exhibit "A" Data sheet for both zones
- 3) Exhibit "B" Computation of relative values for hydrocarbons;
- 4) Proposed wellbore sketches
- 5) List of offset operators/mineral owners notified.

In conclusion, MEPUS believes that approval of this request will result in more efficient recovery of hydrocarbons and will extend the productive life of both zones, thereby preventing waste. If any further information is needed, please contact J. W. Dixon at (915) 688-2452.

Yours very truly,

Mobil Exploration & Producing U.S. Inc.
as Agent for
Mobil Producing Texas & New Mexico Inc.



G. N. Miller
Environmental, Regulatory and
Loss Prevention Supervisor

JWD

Attachments

cc: w/attachments
Oil Conservation Division - Hobbs
Offset Operators
Mineral Owners

Mobil

State of New Mexico
Bridges State Well No. 36

-3-

June 13, 1990

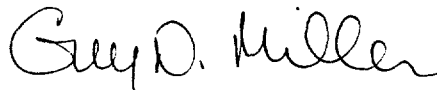
In support of this application, the following is submitted:

- 1) Forms C-101 and C-102
- 2) Exhibit "A" Data sheet for both zones
- 3) Exhibit "B" Computation of relative values for hydrocarbons;
- 4) Proposed wellbore sketches
- 5) List of offset operators/mineral owners notified.

In conclusion, MEPUS believes that approval of this request will result in more efficient recovery of hydrocarbons and will extend the productive life of both zones, thereby preventing waste. If any further information is needed, please contact J. W. Dixon at (915) 688-2452.

Yours very truly,

Mobil Exploration & Producing U.S. Inc.
as Agent for
Mobil Producing Texas & New Mexico Inc.



G. N. Miller
Environmental, Regulatory and
Loss Prevention Supervisor

JWD

Attachments

cc: w/attachments
Oil Conservation Division - Hobbs
Offset Operators
Mineral Owners

bcc: w/attachments
Drlg. Engr. Sec.
Drlg Supt - G. H. Huff
Proration Acct.
Central Files
Regulatory Files
Oper. Supv. - R. P. Pratt
Prod. Engr. Supv (Sub Surface) - K. Walters
Res. Engr. Supv - L. Marczynski
W. Perry Pearce, Box 2037, Santa Fe, New Mexico 88201

MOBIL EXPLORATION & PRODUCING U.S. INC.
SECTION 24 and 25, T-17-S, R-34-E
VACUUM FIELD
LEA COUNTY, NEW MEXICO

This application was sent by certified mail to the surface owner of the land on which the well is located and to each offset operator/mineral owner.

OFFSET OPERATOR

ATTN: S. C. SCHRAUB
MARATHON OIL COMPANY
P. O. BOX 552
MIDLAND, TEXAS 79702-0552

ATTN: A. W. DEES
TEXACO, INC.
BOX 3109
MIDLAND, TEXAS 79702-3109

SHELL WESTERN E & P INC.
P.O. BOX 576
HOUSTON, TEXAS 77001

NEW YORK LIFE OIL & GAS ET AL
2100 NCNB CENTER
700 LOUISIANA
HOUSTON, TEXAS 77002

EXXON COMPANY, U.S.A.
BOX 2180
HOUSTON, TEXAS 77252-2180

THE MCBEE COMPANY, A TEXAS
GENERAL PARTNERSHIP
3738 OAK LAWN, AVE. LB 200
DALLAS, TEXAS 75201

ARTHUR L. BOOTH, ET UX
1905 CARMEL
PLANO, TEXAS 75077

PETRO LEWIS CORPORATION
717 17TH STREET
DENVER, COLORADO 80202

JOHN E. STEIN, TRUST OR
SUCCESSOR IN TRUST OF THE
JOHN E. STEIN REVOCABLE TRUST
3953 SOUTH NEWPORT WAY
DENVER, COLORADO 80237

AMERICAN PRODUCTION & EXPL.
2100 NCNB CENTER
700 LOUISIANA
HOUSTON, TEXAS 77080

JOHN G. MCMILLIAN, JR.
OFFICE IN THE GROVE SUITE 800F
2699 SOUTH BAYSHORE DRIVE
COCONUT GROVE, FLORIDA 33133

PHILLIPS PETROLEUM COMPANY
4001 PENBROOK
ODESSA, TEXAS 79762

ARCO
BOX 1610
MIDLAND, TEXAS 79702

YUCCA SALVAGE COMPANY
4000 NORTH BIG SPRING
SUITE 305
MIDLAND, TX 79705

MINERAL OWNER & SURFACE OWNER

STATE OF NEW MEXICO
BOX 2088
SANTA FE, NEW MEXICO 87501

W A I V E R

MOBIL EXPLORATION & PRODUCING U. S. INC.
P. O. BOX 633
MIDLAND, TEXAS 79702

ATTN: J. W. DIXON

NOTICE OF APPLICATION
DOWNHOLE COMMINGLING
BRIDGES STATE WELL No. 36
VACUUM-GLORIETA, VACUUM-BLINEBRY
LEA COUNTY, NEW MEXICO

Gentlemen:

We, the undersigned, have been furnished a copy of Mobil Exploration & Producing U.S. Inc., as Agent for Mobil Producing Texas & New Mexico Inc.'s application to drill the subject well. It is requested to downhole commingle the Glorieta and Blinebry injection in one tubing string. Please be informed that we, as an offset operator/mineral owner, have no object to the completion of this well as set forth in MEPUS's application dated June 15, 1990.

Yours truly,

Company: _____

Representative: _____

Name: _____
(Please print)

Signature: _____

Title: _____

Date: _____

Submit to Appropriate
District Office
State Lease - 6 copies
Fee Lease - 5 copies

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-101
Revised 1-1-89

OIL CONSERVATION DIVISION

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

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

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

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

API NO. (assigned by OCD on New Wells) 30025021060000
5. Indicate Type of Lease STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No. B-1520

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work: Downhole commingle DRILL <input type="checkbox"/> RE-ENTER <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input type="checkbox"/>		7. Lease Name or Unit Agreement Name Bridges State
b. Type of Well: OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/> SINGLE ZONE <input type="checkbox"/> MULTIPLE ZONE <input checked="" type="checkbox"/>		
2. Name of Operator Mobil Producing Tx. & N.M. Inc.		8. Well No. 36
3. Address of Operator c/o Mobil Exploration & Producing U.S. Inc. P.O. Box 633, Midland, Texas 79702		9. Pool name or Wildcat Vacuum
4. Well Location Unit Letter D : 660 Feet From The North Line and 660 Feet From The West Line Section 25 Township 17S Range 34E NMPM Lea County		

10. Proposed Depth 6900		11. Formation Blinberry/Glorieta	12. Rotary or C.T. Rotary
13. Elevations (Show whether DF, RT, GR, etc.) 4023 GL	14. Kind & Status Plug. Bond On file blanket	15. Drilling Contractor Unknown	16. Approx. Date Work will start ASAP

17. PROPOSED CASING AND CEMENT PROGRAM					
SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
2-7/8"	10-3/4"	NA	815'	250	circulate
	7"	NA	4241	210	2705
	5"	NA	6900'	425	TOL @ 4067

See attached wellbore

This well is presently completed in the Vacuum (Grayburg-San Andres) Pool and is temporarily abandoned with a bridge plug above the San Andres perforations. Permission is requested to downhole commingle production from the Blinberry and Glorieta reservoirs.

The existing San Andres zone is to be squeezed off.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: IF PROPOSAL IS TO DEEPEN OR PLUG BACK, GIVE DATA ON PRESENT PRODUCTIVE ZONE AND PROPOSED NEW PRODUCTIVE ZONE. GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

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

SIGNATURE Judy W. Dixon TITLE Regulatory Technician DATE 6/15/90
TYPE OR PRINT NAME Judy W. Dixon TELEPHONE NO. (915) 688-2452

(This space for State Use)

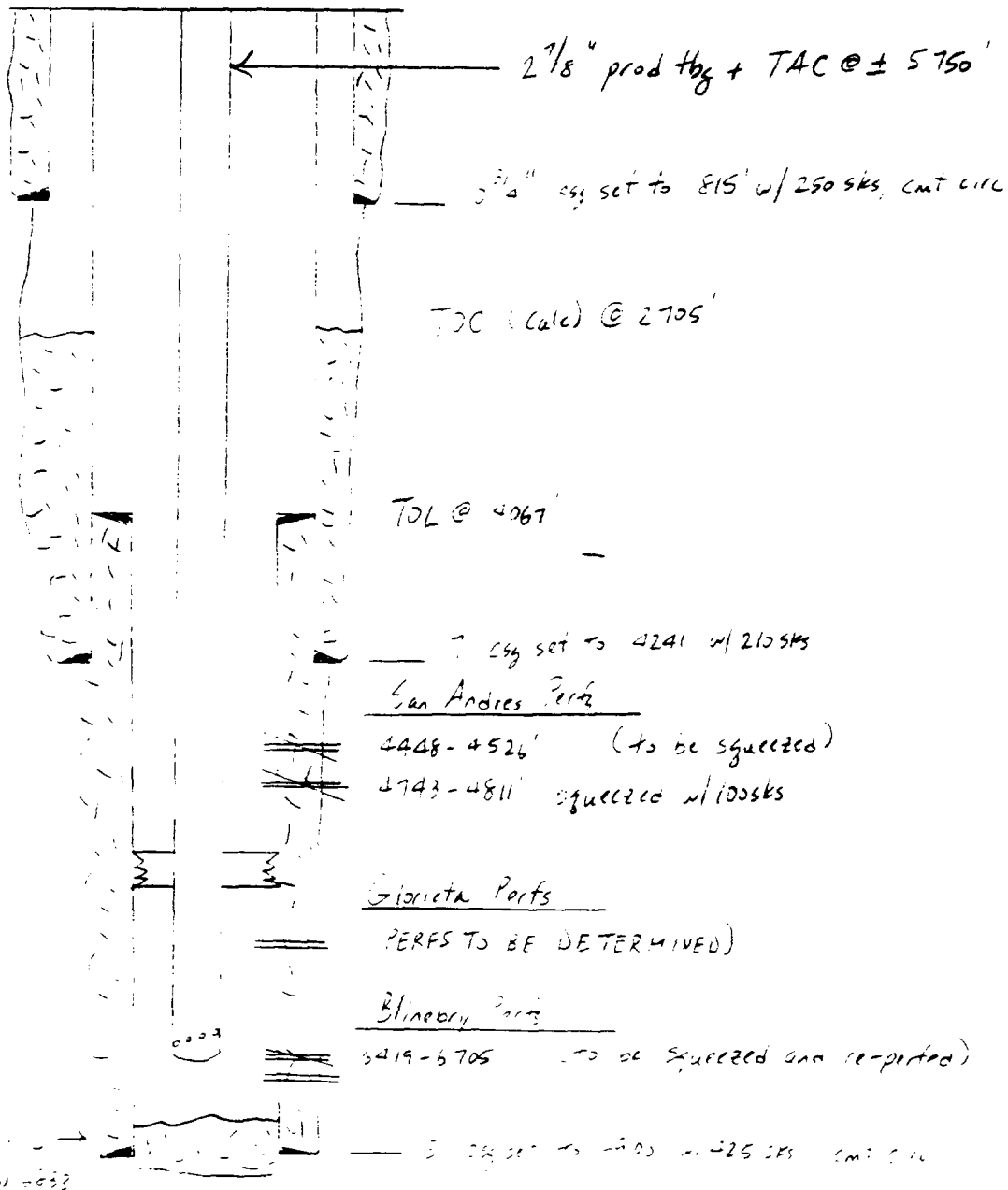
APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

DATE 5-5-90 WELL NO. 36 LEASE Bridges State
 FIELD vacuum Gloria & Blinberry LOCATION 1 mi. S Sec 25 T15 R34E
660' FNL & 660' FWL Lea County NM

SIGNED J G Elwood

GL 4023'
 DF 4033' → estimate
 KB 4034'
 ZERO FB

PROPOSED DIAGRAM



TD 6900'
 FRT 6833'

ILLEGIBLE

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

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator Mobil Producing Tx. & N. M. Inc.		Lease Bridges State		Well No. 36
Unit Letter D	Section 25	Township T-17-S	Range R-34-E NMPM	County Lea

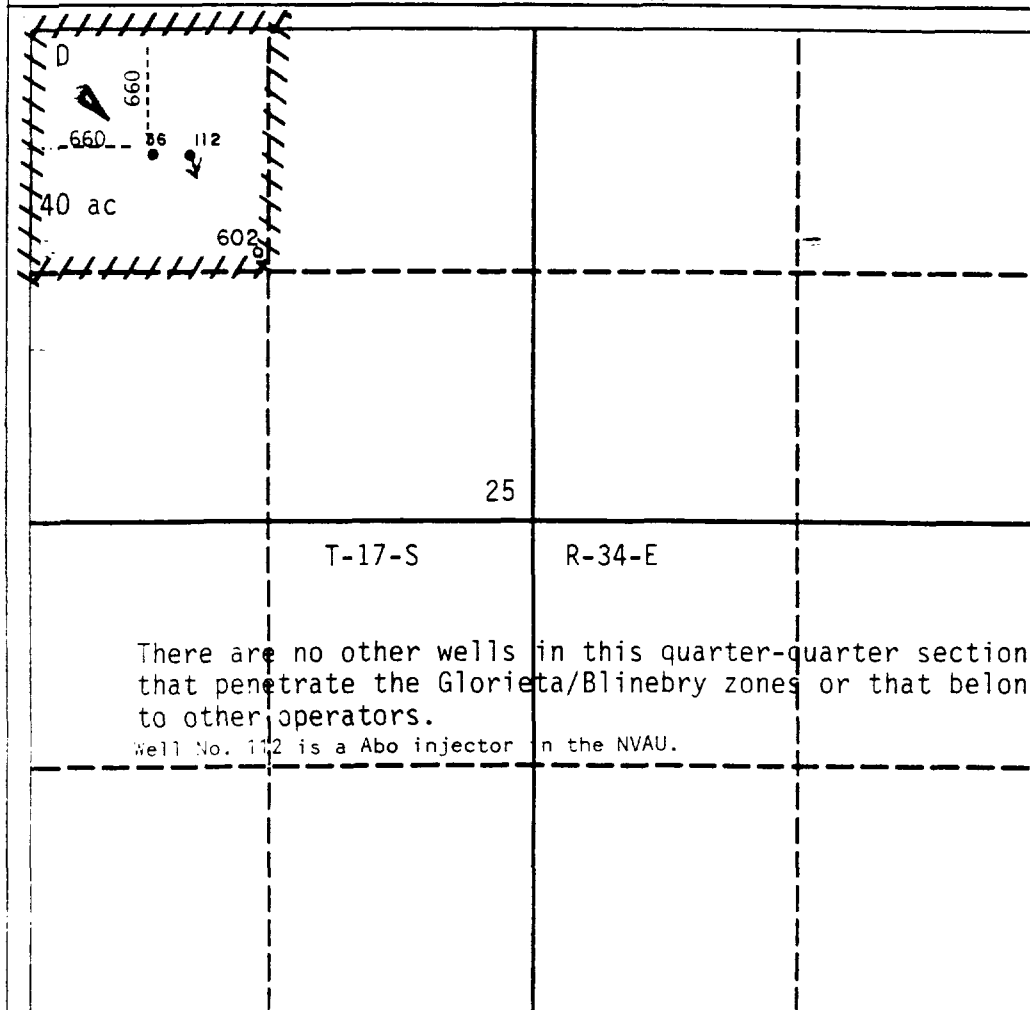
Actual Footage Location of Well:

660 feet from the West line and	660 feet from the North line		
Ground level Elev. 4023	Producing Formation Glorieta/Blinebry	Pool Vacuum	Dedicated Acreage: 40 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. 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.



OPERATOR CERTIFICATION

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

Signature _____

Judy Dixon

Printed Name

Regulatory Technician

Position

Company

Mobil Exploration & Producing U.S. Inc.

Date

6/8/90

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.

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

EXHIBIT "A"
DATA SHEET

APPLICATION FOR EXCEPTION TO RULE 303(a) NEW MEXICO OIL CONSERVATION COMMISSION'S RULES & REGULATIONS ALLOWING DOWNHOLE COMMINGLING OF DUALY COMPLETED OIL WELLS BY ADMINISTRATIVE PROCEDURE (ORDER NO. R-3845)

1. Lease Name Bridges State
2. Well No. 36
3. Well Location: Unit D, 660 feet from North line,
660 feet from West line of Section 25,
Township T17S Range R34E, Lea County,
New Mexico
4. Upper Zone Vacuum Glorieta
5. Completion Interval 5923-6303'
6. Lower Zone Vacuum Blinebry
7. Completion Interval 6303-7300'
8. Current Productivity Test Summary

	Vacuum Glorieta (Upper Zone)	Vacuum Blinebry (Lower Zone)
Producing Method	Proposed Values Pump	Pump
Oil Bbl./day	<u>14</u>	<u>10</u>
Gas Mcf/day	<u>-0-</u>	<u>-0-</u>
Water Bbl/day	<u>10</u>	<u>10</u>
GOR	<u>-----</u>	<u>-----</u>
GOR Limit	<u>-----</u>	<u>-----</u>

- * 9. Bottom-hole Pressure of Upper Zone 400 PSI (Vacuum Glorieta)
- * 10. Bottom-hole Pressure of Lower Zone 550 PSI (Vacuum Blinebry)
11. Fluid Characteristics of Each Zone _____

* Estimated by static fluid level.

EXHIBIT "B"

COMPUTATION OF RELATIVE VALUES OF THE HYDROCARBON PRODUCTIVE BEFORE AND AFTER DOWNHOLE COMMINGLING (STATEWIDE RULE 303-C-2-H)

Lease and Well No. Bridges State #36

		<u>UPPER POOL</u> <u>PROPOSED</u>	<u>LOWER POOL</u>	<u>COMMINGLED</u>
Pool Name		Vacuum Glorieta	Vacuum Blinebry	Glorieta/Blinebry
Gravity, API		36.8	35.8	36.4
¹ Selling price/ XXXX BO		17.45	17.44	17.45
² Daily Producing/ XXXX BOPD		14	10	24
Daily Income		\$244.30	\$174.40	\$418.80
TOTAL DAILY INCOME (POOLS SEPARATED)			\$418.70	

Net difference realized from downhole commingling based on current well test=
\$0.10/BO gain.³

REMARKS:

-
-
1. Based upon a posted price of \$17.50/BO
 2. Estimates based upon offset production.
 3. An initial capital investment savings of \$400,000 will be realized since a separate Glorieta producer will not have to be drilled.

MOBIL EXPLORATION & PRODUCING U.S. INC.
SECTION 24 and 25, T-17-S, R-34-E
VACUUM FIELD
LEA COUNTY, NEW MEXICO

This application was sent by certified mail to the surface owner of the land on which the well is located and to each offset operator/mineral owner.

OFFSET OPERATOR

ATTN: S. C. SCHRAUB
MARATHON OIL COMPANY
P. O. BOX 552
MIDLAND, TEXAS 79702-0552

ATTN: A. W. DEES
TEXACO, INC.
BOX 3109
MIDLAND, TEXAS 79702-3109

SHELL WESTERN E & P INC.
P.O. BOX 576
HOUSTON, TEXAS 77001

NEW YORK LIFE OIL & GAS ET AL
2100 NCNB CENTER
700 LOUISIANA
HOUSTON, TEXAS 77002

EXXON COMPANY, U.S.A.
BOX 2180
HOUSTON, TEXAS 77252-2180

THE MCBEE COMPANY, A TEXAS
GENERAL PARTNERSHIP
3738 OAK LAWN, AVE. LB 200
DALLAS, TEXAS 75201

ARTHUR L. BOOTH, ET UX
1905 CARMEL
PLANO, TEXAS 75077

PETRO LEWIS CORPORATION
717 17TH STREET
DENVER, COLORADO 80202

JOHN E. STEIN, TRUST OR
SUCCESSOR IN TRUST OF THE
JOHN E. STEIN REVOCABLE TRUST
3953 SOUTH NEWPORT WAY
DENVER, COLORADO 80237

AMERICAN PRODUCTION & EXPL.
2100 NCNB CENTER
700 LOUISIANA
HOUSTON, TEXAS 77080

JOHN G. MCMILLIAN, JR.
OFFICE IN THE GROVE SUITE 800F
2699 SOUTH BAYSHORE DRIVE
COCONUT GROVE, FLORIDA 33133

PHILLIPS PETROLEUM COMPANY
4001 PENBROOK
ODESSA, TEXAS 79762

ARCO
BOX 1610
MIDLAND, TEXAS 79702

YUCCA SALVAGE COMPANY
4000 NORTH BIG SPRING
SUITE 305
MIDLAND, TX 79705

MINERAL OWNER & SURFACE OWNER

STATE OF NEW MEXICO
BOX 2088
SANTA FE, NEW MEXICO 87501

700 W. INDEPENDENCE
MIDLAND, TEXAS 79701
PHONE 686-4521

RESULT OF WATER ANALYSES

TO: Ms. Donna Ellwood LABORATORY NO. 590306
P.O. Box 633, Midland, Texas SAMPLE RECEIVED 5-29-90
RESULTS REPORTED 6-1-90

RECEIVED
JUN 8 4 1990

COMPANY MEPUS LEASE Central NVA Station
FIELD OR POOL Vacuum MIDLAND PROD. ENGR. DEPT.
SECTION BLOCK SURVEY COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Supply water - taken from raw water line. 5-29-90

NO. 2 _____

NO. 3 _____

NO. 4

REMARKS: Sample taken by Tom Elrod, Martin Water Labs., Inc.

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0018			
pH When Sampled				
pH When Received	8.39			
Bicarbonate as HCO ₃	185			
Supersaturation as CaCO ₃	4			
Undersaturation as CaCO ₃	---			
Total Hardness as CaCO ₃	256			
Calcium as Ca	83			
Magnesium as Mg	12			
Sodium and/or Potassium	49			
Sulfate as SO ₄	39			
Chloride as Cl	104			
Iron as Fe	0.25			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	479			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen.	2.0			
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	15.18			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Carbonate, as CO ₃	7			
Calcium Carbonate Scaling Tendency	NONE			
Calcium Sulfate Scaling Tendency	NONE			

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks Letter of recommendation attached.

Form No. 3

By

Waylan C. Martin, M.A.

cc: Mr. U.L. Garcia, Lovington, NM

709 W. INDIANA
MIDLAND, TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

TO: Ms. Donna Ellwood
P.O. Box 633, Midland, Texas

LABORATORY NO. 590307
SAMPLE RECEIVED 5-29-90
RESULTS REPORTED 6-1-90

COMPANY MEPUS LEASE Bridges State
FIELD OR POOL Vacuum
SECTION BLOCK SURVEY COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1	Produced water - taken from Bridges State #13.	5-29-90
NO. 2	Produced water - taken from Bridges State #27.	5-29-90
NO. 3	Produced water - taken from Bridges State #58.	5-29-90
NO. 4	Produced water - taken from Bridges State #102.	5-29-90

REMARKS: 1 & 2 Blinebry 3 & 4 Glorieta - Samples taken by Tom Elrod, Martin Water Labs, Inc

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.1081	1.1477	1.1410	1.1352
pH When Sampled				
pH When Received	7.10	7.30	7.59	7.45
Bicarbonate as HCO ₃	366	415	476	439
Supersaturation as CaCO ₃	90	20	70	100
Undersaturation as CaCO ₃	---	---	---	---
Total Hardness as CaCO ₃	35,500	28,000	8,200	7,200
Calcium as Ca	11,200	7,400	2,280	2,000
Magnesium as Mg	1,822	2,308	608	535
Sodium and/or Potassium	50,413	80,732	85,421	82,128
Sulfate as SO ₄	573	2,780	3,124	3,009
Chloride as Cl	102,267	142,038	134,936	129,255
Iron as Fe	0.07	1.2	12.9	0.65
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	166,642	235,673	226,844	217,366
Temperature °F.				
Carbon Dioxide, Calculated	48	34	25	29
Dissolved Oxygen.				
Hydrogen Sulfide	0.0	0.0	74.0	74.0
Resistivity, ohms/m at 77° F.	0.065	0.052	0.053	0.055
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Calcium Carbonate Scaling Tendency	MODERATE	NONE	MARGINAL	MODERATE
Calcium Sulfate Scaling Tendency	NONE	SEVERE	NONE	NONE

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks

709 W. INDIANA-
MIDLAND, TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

LABORATORY NO. 590307 (Page 2)

TO: Ms. Donna Ellwood
P.O. Box 633, Midland, Texas

SAMPLE RECEIVED 5-29-90
RESULTS REPORTED 6-1-90

COMPANY MEPUS LEASE Bridges State

FIELD OR POOL Vacuum

SECTION _____ BLOCK _____ SURVEY _____ COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Produced water - taken from Bridges State #103. 5-29-90

NO. 2 Produced water - taken from Bridges State #110. 5-29-90

Produced water - taken from Bridges State #113. 5-29-90

NO. 4

REMARKS: Glorieta

	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.1376	1.1383	1.1424	
pH When Sampled				
pH When Received	7.02	7.57	7.01	
Bicarbonate as HCO ₃	512	512	403	
Supersaturation as CaCO ₃	90	50	50	
Undersaturation as CaCO ₃	---	---	---	
Total Hardness as CaCO ₃	8,400	8,000	16,500	
Calcium as Ca	2,440	2,200	5,200	
Magnesium as Mg	559	608	851	
Sodium and/or Potassium	82,415	82,722	81,784	
Sulfate as SO ₄	2,780	3,038	1,633	
Chloride as Cl	130,675	130,675	136,356	
Iron as Fe	0.86	0.14	0.50	
Barium as Ba				
Turbidity, Electric	=			
Color as Pt				
Total Solids, Calculated	219,381	219,755	226,227	
Temperature °F.				
Carbon Dioxide, Calculated	82	27	64	
Dissolved Oxygen,				
Hydrogen Sulfide	106	106	21.0	
Resistivity, ohms/m at 77° F.	0.055	0.054	0.053	
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Calcium Carbonate Scaling Tendency	MILD	NONE	NONE	
Calcium Sulfate Scaling Tendency	NONE	NONE	NONE	

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks Letter of recommendation attached.

Form No. 3

By

Waylan C. Martin, M.A.

cc: Mr. U.L. Garcia, Lovington, NM

RECOMMENDATION CONCERNING FLUID COMPATABILITY OF THE GLORIETA AND
BLINEBRY FORMATIONS.

VACUUM RMT MEMO

Water samples were obtained on 5 Glorieta and 2 Blinebry producers on May 29, 1990. Fresh water presently used to flood the Abo was also tested. The individual well water tests show a natural moderate calcium carbonate scaling in the Glorieta formation.

The water test on Bridges State #113 varied from the other Glorieta well tests on calcium, calcium carbonate, and hydrogen sulfide content. This well is on the edge of the structure where a mild water drive exists - it is probable that there is a mixing of the base water with the connate water that causes the difference.

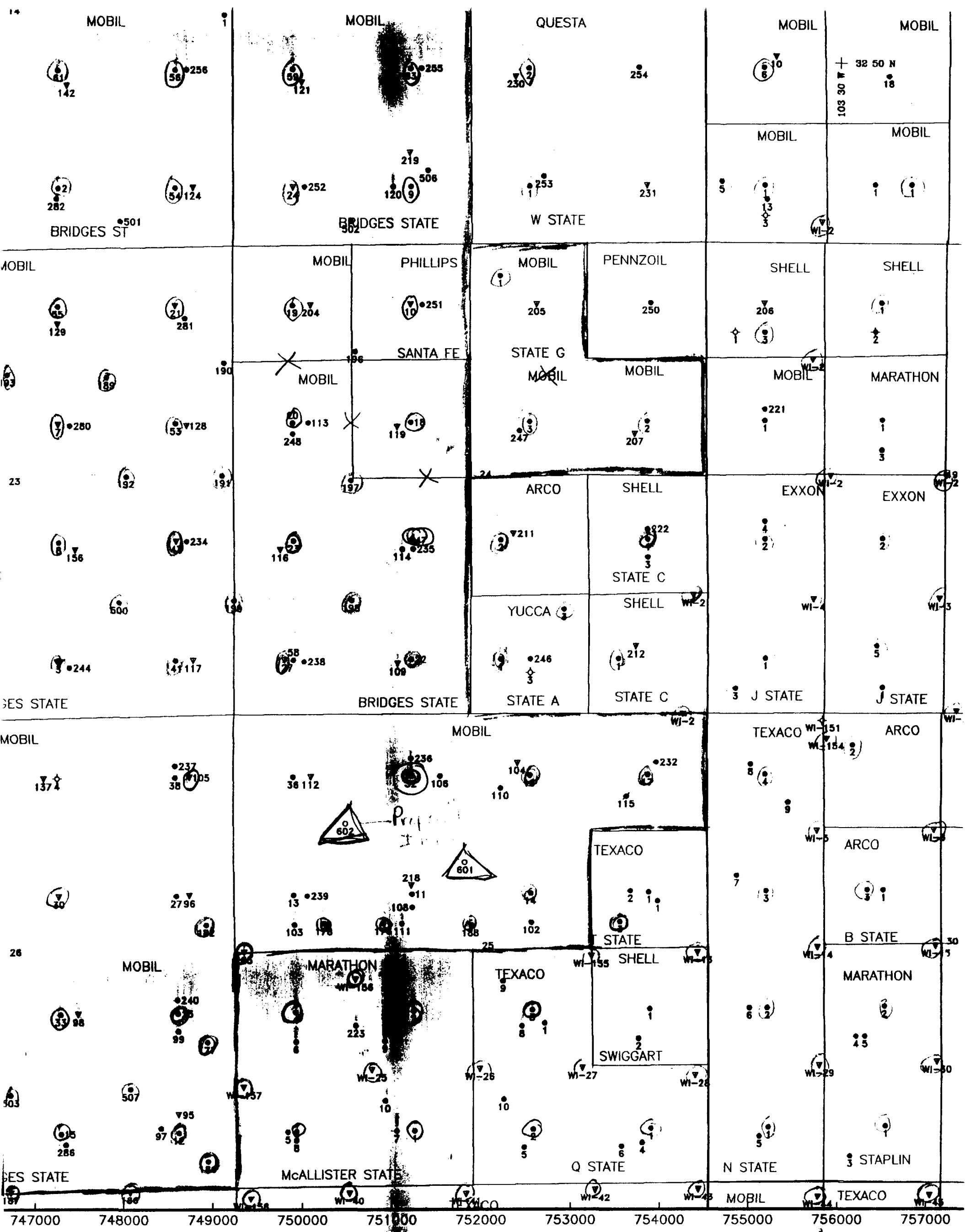
A water test on Bridges State #27 shows an abnormal high sulfate content. Squeezed perforations in the San Andres and the Glorieta in #27 should be tested for communication.

Since the 164 BWPD presently produced from the 11 wells is far less than the 2000 BWPD needed for a waterflood, produced water cannot be utilized for waterflooding. It is expected that using fresh water for injection will not be detrimental to the Glorieta and Blinebry. Since these formation waters are well below the saturation point for calcium sulfate, any leaching of anhydrite by the fresh water should not be enough to cause widespread scale deposition.

With the exception of Bridges State #58, the wells tested do not show significant free iron to promote iron sulfide deposition. It is recommended to run a coupon test on #58 to locate the source of free iron.

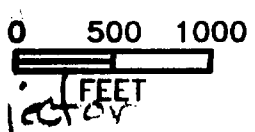
It is recommended to perform preventative scale squeezes at the start of the flood to inhibit any scale deposition in the producers.

D. G. Elwood
6-7-90



2-96
 UTM Projection, Zone 8001, Clarke 1886 Spheroid

LEGEND
 Producer
 Injector
 TA
 Gas Wells



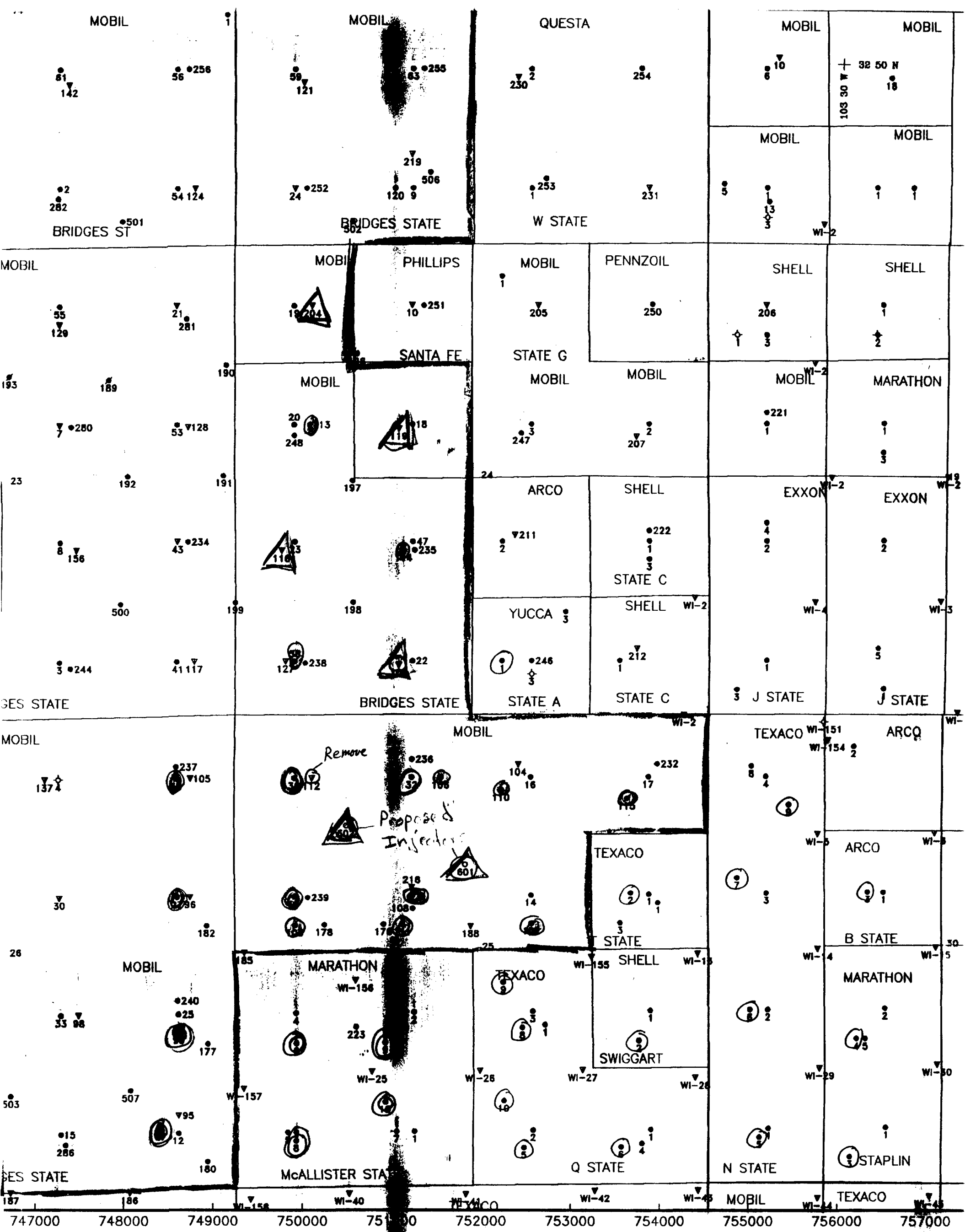
Mobil Exploration & Producing U.S.
 Midland Division
VACUUM (GLORIETA/BLINEBRY)
 LEA COUNTY, NEW MEXICO
1/2 MILE RADIUS BASE MAP
 GLORIETA/BLINEBRY WATERFLOOD

MAY 1990

D. BURNHAM

San Andres Producer/Injector
 Active or inactive
 — Bridges State Coop San Andres Flood
 Δ Proposed San Andres Injector

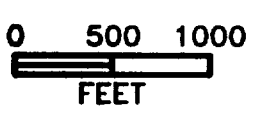
ILLEGIBLE



1-90
 UTM Projection, Zone 8001, Clarke 1866 Spheroid

LEGEND

- Producer
- Injector
- TA
- Gas Wells
- Glorieta Producer
- Blinberry Producer



Mobil Exploration & Producing U.S.
 VACUUM (GLORIETA/BLINBERRY)
 LEA COUNTY, NEW MEXICO
 1/2 MILE RADIUS BASE MAP
 GLORIETA/BLINBERRY WATERFLOOD
 MAY 1990
 D. BURNHAM

— Bridges State Lease line
 ▲ Proposed Glorieta/Blinberry Injector

ILLEGIBLE

