

September 17, 1997



APPLICATION FOR AUTHORIZATION
TO INJECT - OCD FORM C-108
EUNICE MONUMENT SOUTH UNIT
EUNICE MONUMENT OIL POOL
LEA COUNTY, NEW MEXICO

Chevron U.S.A. Production Company
P.O. Box 1150
Midland, TX 79702

State of New Mexico
Energy and Minerals Dept.
Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504

Attention: Mr. William J. Lemay, Director

Gentlemen:

Chevron U.S.A. Production Co. requests your approval of the subject application to inject water into Eunice Monument South Unit Well No. 679 located in Unit D, Section 8, Township 21 South, Range 36 East, Lea County, New Mexico.

Chevron converted this producer to an injector due to its poor performance. This conversion will provide the much needed injection support in this area and enhance the production of the EMSU secondary recovery unit.

Attached is an OCD Form C-108 with information relative to the water injection conversion of the EMSU #679.

A copy of this letter and application is being sent to applicable surface land owners and offset operators by certified mail as their notice.

Your prompt consideration and approval of this application will be greatly appreciated. If further information is required please contact me at (915) 687-7645.

Sincerely,

A handwritten signature in cursive script that reads "Tracy Love".

Tracy G. Love
Petroleum Engineer
New Mexico Waterfloods

TL
Attachments

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☒ Secondary Recovery ☐ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ yes ☐ no
- II. Operator: Chevron U.S.A. Production Co.
Address: P.O. Box 1150 Midland, TX 79702
Contact party: Tracy Love - Petroleum Eng. Phone: (915) 687-7645
- III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? ☒ yes ☐ no
If yes, give the Division order number authorizing the project R-7766
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- * VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- *VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- * X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)
- * XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification
- I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- Name: Tracy G. Love Title Petroleum Engineer
Signature: Tracy Love Date: 9/17/97
- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal. Earlier submittal presented as exhibits in Case No. 839 - Commissioners hearing held on 11-07-84 (Order No. 7766 - Effective 12-27-84)
- DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District

**EMSU # 679 Conversion to Injection
Eunice Monument South Unit
Lea County, NM**

INFORMATION FOR NMOCD FORM C-108

ITEM I

(See OCD Form C-108)

ITEM II

(See OCD Form C-108)

ITEM III

See attached wellbore schematic.

ITEM IV

(See OCD Form C-108)

ITEM V

This was originally submitted as Exhibit No. 28 Case No. 8398 heard at a Commissioner's hearing on 11-07-84 (Order No. 7766 - effective 12-27-84). Smaller area maps relating to the EMSU #679 conversion are attached.

ITEM VI

This was originally submitted as Exhibit No. 31 of Case 8398 heard at a Commissioner's hearing on 11-07-84 (Order No. 7766 - effective 12-27-84). Please note attached schematic diagrams of new drilled wells within the area of review since the effective date of the Order. No existing wells at the time of the original Order are known to have been plugged and abandoned.

ITEM VII

See attached table showing items VII (1), (2), and (3) for the subject well of this C-108 application. Items VII (4) and (5) are consistent with the original C-108 application and its Exhibit No. 33a.

ITEM VIII

This was originally submitted as Exhibit No. 34a and 36 of Case No. 8398 heard at a Commissioner's hearing on 11-07-84 (Order No. 7766 - effective 12-27-84). Copies of these Exhibits are enclosed.

ITEM IX

No proposed stimulation program.

ITEM X

Logging and test data have been filed with the OCD.

ITEM XI

This was originally submitted as Exhibit No. 37 of Case 8398 heard at a Commissioner's hearing on 11-07-84 (Order No. 7766 - effective 12-27-84). A copy of this Exhibit is enclosed.

ITEM XII

This was originally submitted as Exhibit No. 38 of Case 8398 heard at a Commissioner's hearing on 11-07-84 (Order No. 7766 - effective 12-27-84). A copy of this Exhibit is enclosed.

**EMSU # 679 Conversion to Injection
Eunice Monument South Unit
Lea County, NM**

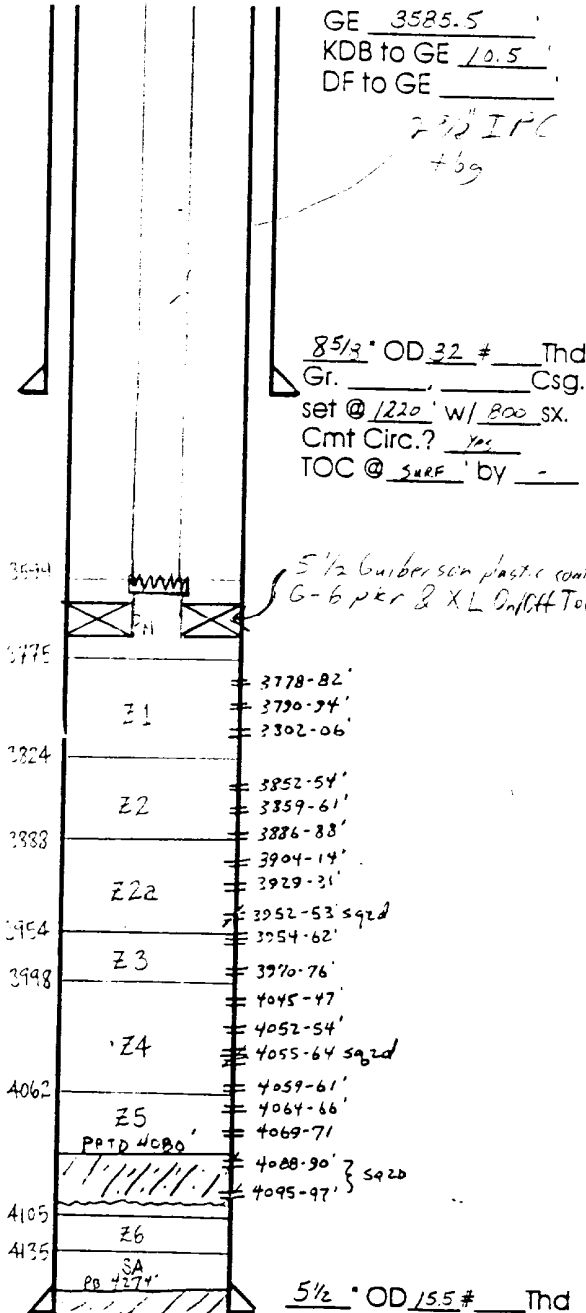
ITEM XIII

All surface land owners and offset operators are being notified by Certified Mail with a copy of the C-108 Form. A request for publication in the Hobbs News-Sun was mailed on 9-17-97. The actual newspaper add and an affidavit of publication will be forwarded to the OCD as soon as it is obtained.

30-025-31009
KU 9535

Well Data Sheet

Lease & Wellno EMSU #679 Field / Pool Eunice Monument Gas/SA Date 8/7/96
1220 Feet From NORTH Line and 1220 Feet From WEST Line
 Section R, T21S, R36E County Lea, NM Operator Chouron



Date Completed 11/1/90
 Initial Formation Beartooth
 From: 3352 ' to 4097 ' GOR 3200
 Initial: Production 15 BOPD 222 BWPD
 Or: Injection _____ BWPD @ _____ psig
 Completion Data:
Perf 4045-47' 4052-64' 4059-61' 4064-66' 4069-71' 4088-90
4095-97' w/ 2 3/8\"
EFL: 1700' Sub 12 BOP/156 BW 44' w/ EFL: 3400' Sub 6 BOP/76 BW 16' w/
EFL: 2800' Perf 3852-54' 3859-61' 3886-88' 3904-14' 3929-31' 3952-54
3970-76' w/ 2 3/8\"
Sub 7 BOP/25 BW 9' w/ EFL: 3000' Pat on pump Tested 1580/222 BW/49 mcfpd
FLO SN. (Dated 11/25/90)
Test (perched up on Rpt) 12/20/90 = 4 BOP/268 BW/20 mcfpd FLO SN

Subsequent Workover or Reconditioning:
2/91 - Set RBP @ 4000'. Test pump 3852-4071' Last test 380/203 BW
25' w/ FLO SN. P.H. i set RBP @ 4025' Test pump 3852-3976' Last
Test 280/226 BW/4 mcfpd FLO SN. P.H. w/ RFP and return all rts
to prod. Test 180/365 BW/30 mcfpd FLO SN.
7/91 - Set per 4029' Pumping 24.25 No Comm. Set CIRC @
4027' Set pump 4045-4097' w/ 100 SA. F.L.D. 10 3549' D/O
cut 3540-4080' (ARD) Perf 3778-82' 3790-94' 3802-06' 3852-54' 3859-61'
3886-88' 3904-14' 3929-31' 3954-62' 3970-76' 4045-47' 4052-54' 4059-61'
4064-66' 4069-71' w/ 2 3/8\"
4064 BW FLO. Acrd 3852-3976' w/ 2000 gal 15% NEEFA Sub 62 BW EFL: 3200'
Acrd cut 3778-3886' w/ 1250 gal 15% NEEFA Sub 20 BW FLO: 0 Pat on
well in prod. Test 580/569 BW/21 mcfpd Install surface flame.
5/94 - Fill @ 4064' (11/2\"
perfs 3852-4071' w/ prt clean tool, 1424 gal Toluene & Isopropyl
Alcohol & 4750 gal 15% Sub 33 HHS. SNO 4040'
Test: B-280/104 BW/5 mcfpd. A-380/579 BW/16 mcfpd
FLO 464' ASN
1/97 - TOH w/ Prod cap.
RTH w/ 5 1/2\"
6-6 pkr, XL ON/OFF TOOL & 2 3/8\"
IPC tbg tested to 3000 psi. Perform
CCO MIT.

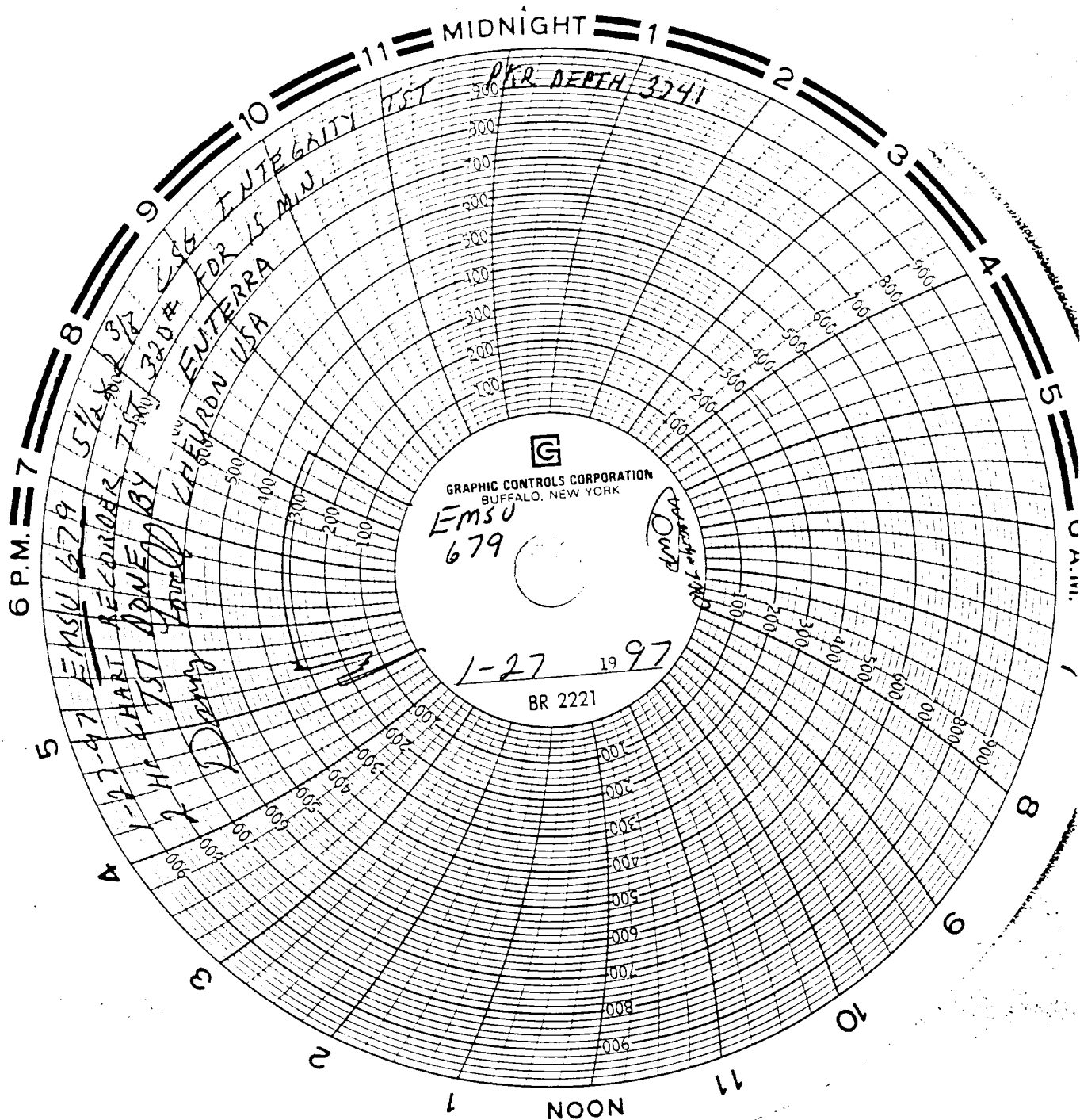
Overlying - Eunice Y-SK-Q Gas Pool
 Underlying - No productive pools

Prod Log -
1/91 - Trac indicates minor entry thru pump 4038-97'. Dil entry f/ w/
4045-71' (Z4 & Z5)
8/91 - 67% - 3775-95', 13% - 3850-75' 20% - 4062-66'

Present Inj. _____ bwpd @ _____ psi Date _____
 Present Prod. _____ bopd _____ bwpd Date _____
 Gas _____ mcfpd

T/Rustler - 1193'
 T/Salt - 1350'
 B/Salt - 2650'
 T/Yates - 2863'
 T/S. Rivers - 3037'
 T/Queen - 3449'
 T/Perrost - 3596'

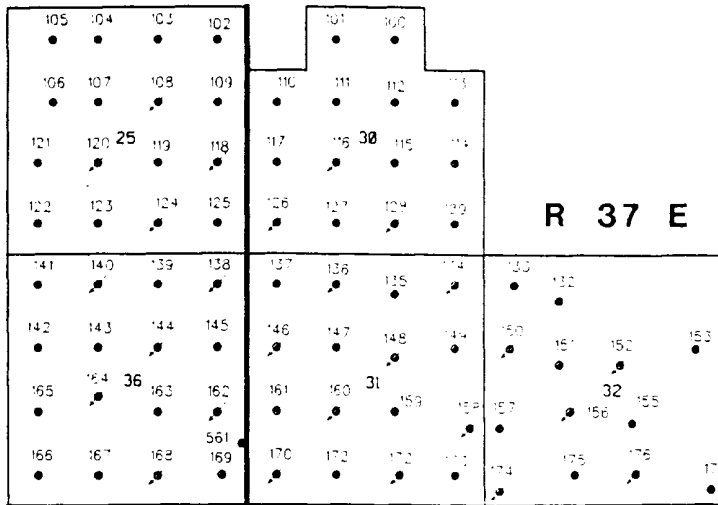
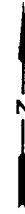
5 1/2" OD 15.5# Thd
 Gr. _____ Csg.
 set @ 4358 ' w/ 900 SX.
 Cmt Circ.? Yes
 TOC @ surf ' by _____
 T/Unit - 3796'
 T/Gr/big - 3760'
 T/SA - 4135'



R 36 E

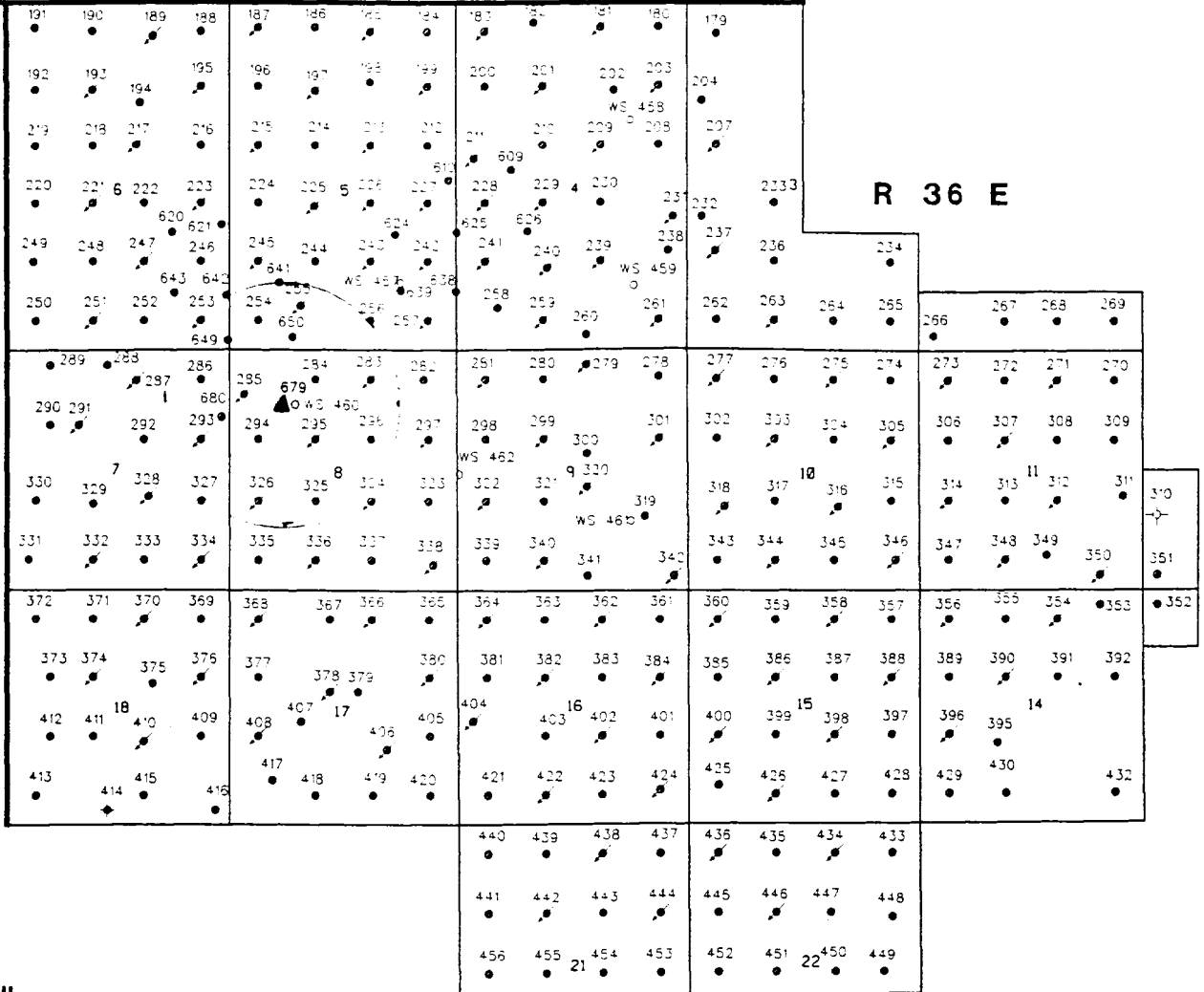
T
20
S

R 37 E



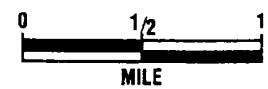
T
21
S

R 36 E



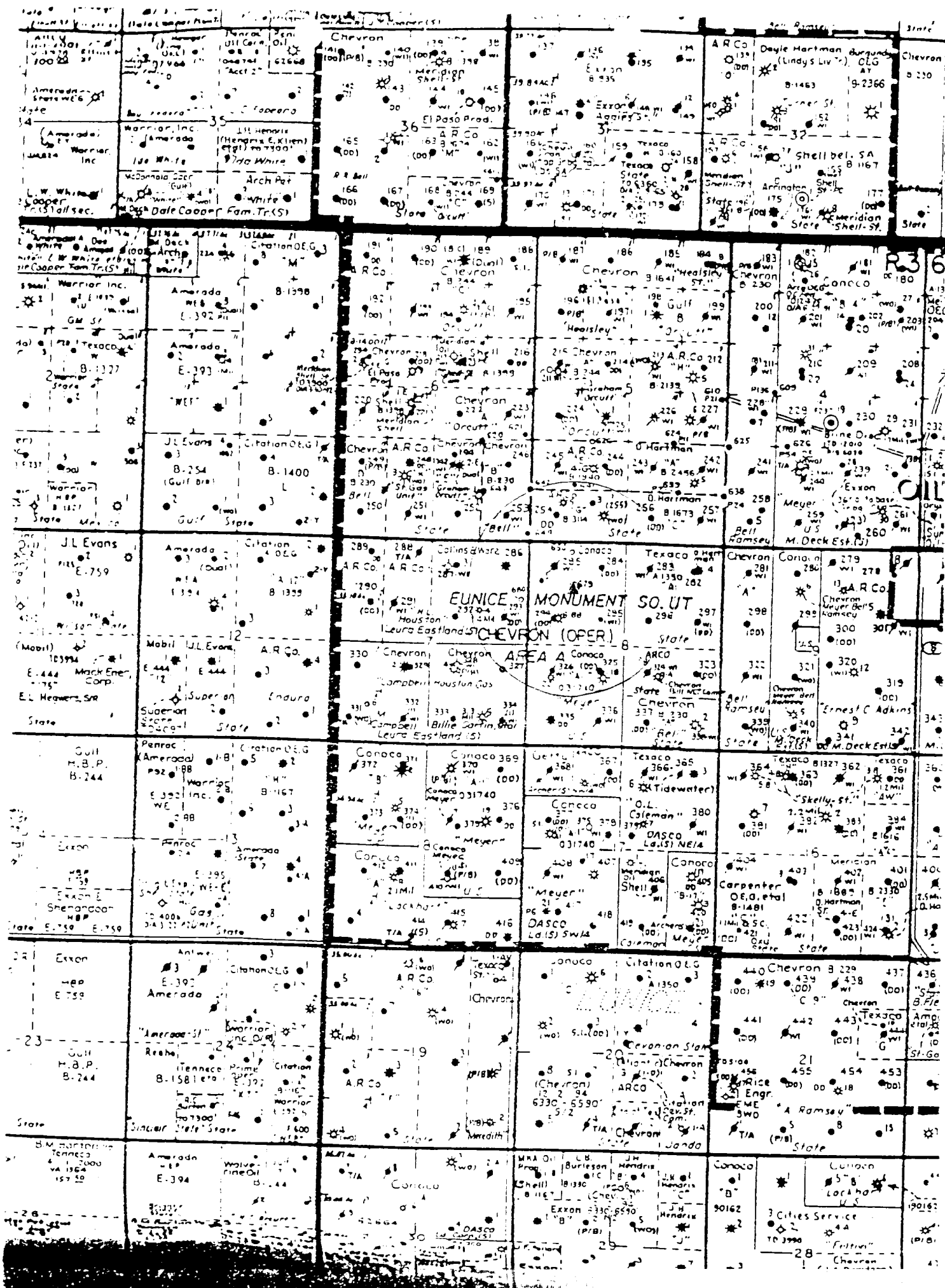
- OIL
- ⊕ P&A OIL
- ⊗ TA OR CI OIL
- ☀ GAS
- ☀ P&A GAS
- ☀ TA OR CI GAS
- DRY & ABANDONED
- ⊗ INJECTOR
- WATER SUPPLY WELL

LEGEND



Chevron USA, Inc.
Exploration, Land and Production

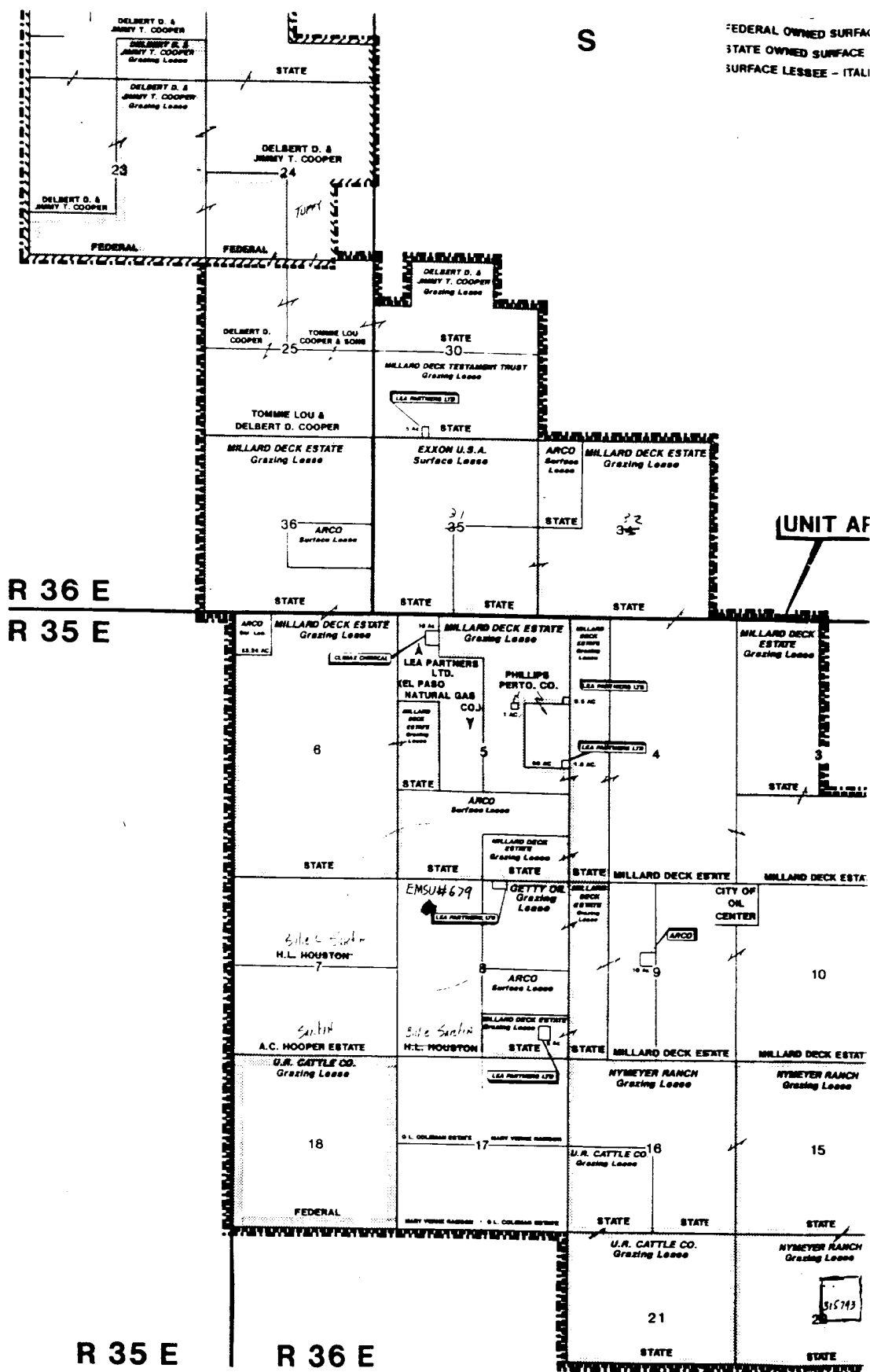
EUNICE MONUMENT SOUTH UNIT
LEA COUNTY, NEW MEXICO



S

S

FEDERAL OWNED SURFACE
STATE OWNED SURFACE
SURFACE LESSEE - ITALI



T
21
S

R 35 E

R 36 E

0 1/2 1 mile

3002533187
BD 6710

Well Data Sheet

2/6/97

Case & Well No EMSU # 649 Field / Pool Eunice Monument G64/SA Date _____
 Location 210 Feet From South Line and 40 Feet From East Line
 Section 6, T2S, R36E County Lea, New Mexico Operator Chevron USA

GE 3583
 KDB to GE 11.8
 DF to GE _____

Date Completed 2/96
 Initial Formation Carbonates
 From: _____ to _____ GOR _____
 Initial: Production _____ BOPD _____ BWPD _____
 Or: Injection _____ BWPD _____ @ _____ psig
 Completion Data:

Perf 3582-29' - 3900-23' w/ 3 JHPF. Pkble thru w/ 3582-29' - 3900-23' and 13200' acid. Pkble thru 3582-29' - 3900-23' and 15200' w/ 15200' acid. 90 BOPD's 1 GOR. Swab: 1' w/ 1' well on prod. SNC 3977' on 2' w/ 1'.

8 1/2" OD 24# Thd
 Gr. _____ Csg.
 set @ 1190' w/ 675 sx.
 Cmt Circ.? Yes
 TOC @ Surf by Circ

Subsequent Workover or Reconditioning: RBP @ 3863'
2/96 Perf 3809-12, 3816-22, 3826-44, ACDZ. Perfs
3809-3844 w/ 3000 gals 15% HCl in 7 stages.
RTH w/ PIP, TNP

4/96 Retrieve & P.O.H w/ RBP @ 3863'. DOR in 4040'
Perf w/ 3 JHPF 3786-94, 3851-56, 3862-67,
3890-99, 3947-54, 3970-77, 3986-98. ACDZ
perfs. w/ 8400 gals 15% in 15 stages. Swab - 8mm.
EFL - 1800', EFL 2800'. Rec'd 45 BW. RTH w/ PIP
TOP

3786-94
 3851-56
 3862-67
 3 JHPF 3890-99
 3947-54
 3970-77
 3986-98
 3809-12
 3816-22
 3826-44
 3882-29'
 3900-23' } w/ 3 JHPF
5 1/2" OD 155# Thd
 Gr. _____ Csg.
 set @ 1064' w/ 575 sx.
 Cmt Circ.? No
 TOC @ 720' by TS

Present Inj. _____ bwpd @ _____ psi Date _____
 Present Prod. _____ bopd _____ bwpd Date _____
 Gas _____ mcfpd

PBD 4003
 ID 4064

Well Data Sheet

Lease & Well No EMSV # 650 Field / Pool Eunice Monument Date 4/24/97
 Location 250 Feet From North Line and 1135 Feet From West Line
 Section 8, T-21-S, R-36-E County Lea, NM Operator Chevron U.S.A.

GE 3576
 KDB to GE 5.5
 DF to GE 4.5
 KB 3581.5
 DF 3580.5

Date Completed 3-10-97
 Initial Formation _____
 From: _____ to _____ GOR _____
 Initial: Production _____ BOPD _____ BWPD _____
 Or: Injection _____ BWPD _____ @ _____ psig
 Completion Data:
Corrd 3755 - 4039, GR/LDT/CNL/CHC/DLL/MCFL/C.

8 5/8 OD 24 # Thd
 Gr. K-SS, ST8C Csg.
 set @ 1185 w/ 650 sx.
 Cmt Circ.? 145 sv.
 TOC @ 0 by Circ.

Subsequent Workover or Reconditioning:
5/97 D/O FC 40mt to 4039. Circ clean. Pick Up w/ 1000 gals 15% HCL.
Perf 4/3740-56 3861-71, 3877-3900 3907-10 3916-23 3962-66 (25 HRF).
Set BP @ 4000. Spnt 500 gals Raiser II. Acidz w/ 1000 gals Raiser II.
Acidz w/ 5000 gals 15% Raiser II. Permeated w/ 100 (9 stages w/ 50-75 g)
Ret BP Run GR Log all cemented.

3840-56
3861-71
3877-3900
3907-10
3916-23
3962-66

5 1/2 OD 15.5 # 8rd Thd
 Gr. K-SS, LT8C Csg.
 set @ 4037 w/ 965 sx.
 Cmt Circ.? 865 x
 TOC @ 0 by Circ

Logs 4/97 CN4GR + GR/KBL/MCL

25 jts 17 # 1111
1st stage 90sx 36circ
2nd stage 875sx 50circ

Present Inj. _____ bwpd @ _____ psi Date _____
 Present Prod. _____ bopd _____ bwpd Date _____
 Gas _____ mcfpd

Well Data Sheet

D-9675

Lease & Wellno EMSU 680 Field / Pool _____ Date 3-1-97
 Location 1490 Feet From NORTH Line and 185 Feet From EAST Line
 Section 7 T21S R36E County LEX Operator Chevron

KB 3588' LMD
 DF 3587'
 GL 3582'

Date Completed 3-20-97

Initial Formation _____

From: _____ to _____ GOR _____

Initial: Production _____ BOPD _____ BWPD _____

Or: Injection _____ BWPD _____ @ _____ psig

Completion Data: _____

8 7/8" OD 24" # Csg. K-55
 set @ 1225' w/ 650 sx.
 Cmt Circ.? 1055x
 TOC @ 0' by CIRC

2-7-97 LOST CIRCULATION @ 3637'

CORE 3750-4076 LDT/CNL/DLL/MCFL/GR

SONIC LMR

3-7-97 3572 4905x Csg. FC @ 4035'

Subsequent Workover or Reconditioning: _____

3-7-97 LOST CIRC @ 3637'

3-8-97 CORE 3750-4076

LDT/CNL/DLL/MCFL/GR SONIC/GR LMR/GR

3-20-97 Drill DV Tool Drill Fluid Pump + Pump to 4000'

3-21-97 Run GR/AL COIL F/4006 to 425' GR COIL to surf Loss

Cmt @ 1200' from 2/3500' to surf

3-21-97 Perf 13863' to 3877' 3900-3939 3914-4003 4009-4018 4024-4032

RTH WIPER to 3363' LPRP

3-24-97 Spot 22000's Kesi-sol II break down pump 2/4000-3877, pump OK to

3763' Pump 16200's Resol-sol II w/ 2500' gauge pump 2000's

3-25-97 Pump 16200's Resol-sol II Flush Tool WIPER + Plr. RTH w/ Prod. pump

Turn + spread

4-7-97 Pump prod pump

4-10-97 acid 2 w/ 4000 gal 90% Posi-sol II. Pump GR 2/3940-3200

Pump 13874' 2500-3700

LC ZONE
 3637'

3863-3877
 3900-3939
 3984-4003
 4009-4018
 4024-4032

5 1/2" OD 15.5# 8thhd

Gr. K-55 Csg.

set @ 4025' w/ 875 sx.

Cmt Circ.? 130

TOC @ Surf by CIRC

2ND Stage

8 5/8"

API: 30-025-2700

REFNO: FW-62710101

Well Data Sheet

Lease & Wellno EMSU*460NSW Field / Pool Euphrates Monument Gls/CA Date 1/24/95
 Location 1220 Feet From NORTH Line and 1520 Feet From WEST Line
 Section 8 T21S R36E County Los Pinos Operator CHURCH

GE 3586.7
 KDB to GE 176
 DF to GE _____

14-40
16" OD 65 # Csg.
 set @ 415 w/ 500 SX.
 Cmt Circ.? yes
 TOC @ _____ by _____

Centrif 32HC19000
 450HP @ 2100'±

11 3/4" OD 47 # Thd
 Gr. _____ Csg.
 set @ 2700 w/ 1650 SX.
 Cmt Circ.? yes
 TOC @ _____ by _____

8 5/8" OD 32 # Thd
 Gr. K-55 Csg.
 set @ 4350 w/ 750 SX.
 Cmt Circ.? No
 TOC @ 700 by TS

7 7/8" OH →

Date Completed 2-14-87
 Initial Formation SAN ANTONIO
 From: 4350 to 5000 GOR _____
 Initial: Production _____ BOPD 15840 BWPD
 Or: Injection _____ BWPD @ _____ psig
 Completion Data: _____

SAN ANTONIO CH 4350-5000'

Direct Lift 32HC19000 450HP @ 2100'±

PWOP and power surge caused SP failure

Subsequent Workover or Reconditioning:

2/87 - Pull & rerun pump. EMPower motor guard did not work. Ran Baker-Lift 300HP - 2360V - 80A motor coated motor & changed 4b stg pump. Run on 4 1/2" 10.5" STC IPC csg for the Ppg 16320 BWPD @ 75 amps.

10/88 - SP grounded in hole. POH. Btm 33'its csg pitted. cable also bad (btm 33'its). XO cable w/ poly cable, exchanged btm csg w/ O.I.B. Ran new Trico motor pump, seal. Tst 12500 BWPD @ 88 amps.

5/89 - Grnd in hole. POH. Ranon pump & motor. XO seal asabk. Tst 12600 BWPD @ 80 amps.

8/89 - Grnd in hole. during elec. storm. POH. found burnt motor. XO motor & seal asabk. Tst 17300 BWPD @ 75 amps.

9/90 - Replaced burnt motor & pump w/ Centrif. 440HP motor & series 675 pmp. Ran new poly cable. Tst 21800 BWPD @ 80 amps.

9/92 - Replaced shorted motor w/ 450 HP Centrif. lift motor. XO shorted cable. Ran pump & csg. Tst 20000 BWPD

1/95 - POH. motor burnt. Pump tst bad. Ran new pump & motor Centrif. 32HC19000 450HP 32 stg ESP. Ran new round cable warehouse old flat cable Test 22000 BWPD

Present Inj. _____ bwpd @ _____ psi Date _____
 Present Prod. _____ bopd _____ bwpd Date _____
 Gas _____ mcfpd

Well Data Sheet

Lease & Wellno RR Bell NCT Acn #3 Field / Pool Eum + 4000 7R 2000 Date _____
 Location 1810 Feet From South Line and 1652 Feet From East Line _____
 Section La J Sec 2 T21S R36E County LEC Operator Cameron

GE 3597
 KDB to GE 30
 DF to GE _____

Date Completed 12-31-92
 Initial Formation _____
 From: _____ to _____ GOR _____
 Initial: Production _____ BOPD _____ BWPD _____
 Or: Injection _____ BWPD _____ @ _____ psig
 Completion Data: _____

2 5/8" OD # _____ Thd _____
 Gr. _____ Csg. _____
 set @ 1275' w/ 50 sx.
 Cmt Circ.? _____
 TOC @ _____ by _____

Subsequent Workover or Reconditioning:

= 3152-3654

5 1/2" OD # _____ Thd _____
 Gr. _____ Csg. _____
 set @ 3250' w/ 505 sx.
 Cmt Circ.? _____
 TOC @ _____ by _____

Present Inj. _____ bwpd @ _____ psi Date _____
 Present Prod. _____ bopd _____ bwpd Date _____
 Gas _____ mcfpd

PBD _____
 TD 3750

Well Data Sheet

Lease & Wellno Monter A #18 Field / Pool Summer Yates TK ver - Jca Date _____
 Location 1780 Feet From South Line and 2030 Feet From West Line _____
 Section 1/4 Sec 1 T12S R3E County Lea Operator Crown

GE 3000
 KDB to GE _____
 DF to GE _____

Date Completed 10-21-86
 Initial Formation _____
 From: _____ to _____ GOR _____
 Initial: Production _____ BOPD _____ BWPD _____
 Or: Injection _____ BWPD _____ @ _____ psig
 Completion Data: _____

2 5/8" OD _____ # _____ Thd _____
 Gr. _____ Csg. _____
 set @ 243' w/ 200 sx.
 Cmt Circ.? _____
 TOC @ _____ by _____

Subsequent Workover or Reconditioning:

3463-62
3476-76
3490-90
3496-96
3502-02
3508-08
3528-28
3536-36
3543-43
3557-57
3600-00

5 1/2" OD _____ # _____ Thd _____
 Gr. _____ Csg. _____
 set @ 3250' w/ 325 sx.
 Cmt Circ.? _____
 TOC @ _____ by _____

Present Inj. _____ bwpd @ _____ psi Date _____
 Present Prod. _____ bopd _____ bwpd Date _____
 Gas _____ mcfpd

PBD _____
 TD 3850

Well Data Sheet

Lease & Well No Mayer RD #6 Field / Pool Eummt Yates TR. Jones Over Date _____
Location 1930 Feet From North Line and 310 Feet From West Line
Section Unit E Sec 2 T21S R30E County Lea Operator Conoco Inc

GE 3591
KDB to GE _____
DF to GE _____

Date Completed 12/31/93
Initial Formation _____
From: _____ ' to _____ GOR _____
Initial: Production _____ BOPD _____ BWPD _____
Or: Injection _____ BWPD @ _____ psig
Completion Data: _____

3 7/8" OD ____ # ____ Thd
Gr. ____ Csg.
set @ 420' w/ 25 SX.
Cmt Circ. ? ____
TOC @ ____' by ____

Subsequent Workover or Reconditioning:

12864.3623

5 1/2" OD _____ # _____ Thd
Gr. _____ Csg.
set @ 3800' w/ 850 sx.
Cmt Circ. ? _____
TOC @ _____ ' by _____

Present Inj. _____ bwpd @ _____ psi Date _____
 Present Prod. _____ bopd _____ bwpd Date _____
 Gas _____ mcfpd

PBD
TD 3800

EMSU # 679 Conversion to Injection
Eunice Monument South Unit
Lea County, NM

Well No.	Max Inj. Rate (BWPD)	Avg. Inj. Rate (BWPD)	Max Inj. Press. (PSI)	Avg. Inj. Press. (PSI)	System Open	System Closed
EMSU #679	1500	750	750	650		X

Data on Proposed Operation
of
Eunice Monument South Unit

1. Proposed average and maximum daily rate and volume of fluids to be injected:

Average daily rate of 400 BWPD
Maximum daily rate of 500 BWPD

2. System is closed.
3. Proposed average and maximum injection pressures:

Average injection pressure of 350 psi
Maximum injection pressure of 740 psi *

4. The source of injection fluids will be from the San Andres formation initially, then produced water from Unit wells will be used as the primary source of water when the Unit becomes fully developed.
 5. The make-up water from the San Andres formation to be used as injection fluid is compatible with the produced water from the Unit wells (See attached water analysis).
- * Until a fracture gradient is determined, maximum injection pressure will be based on a .2 psi/foot gradient.

EXHIBIT NO. 33a

Case No. 8397

November 7, 1984

P O BOX 1468
MCNAMAHER TEXAS 79756
PH 843-8234 OR 862-1040

Martin Water Laboratories, Inc.

700 W INDIANA
MCNAMAHER TEXAS 79756
PHONE 863-4821

RESULT OF WATER ANALYSES

TO Mr. Stan Chapman LABORATORY NO. 284226
P.O. Box 670, Hobbs, NM SAMPLE RECEIVED 2-15-84
RESULTS REPORTED 2-20-84

COMPANY Gulf Oil Exploration & Production LEASE Company
FIELD OR POOL Company

SECTION Block SURVEY County STATE State

SOURCE OF SAMPLE AND DATE TAKEN

NO. 1 Make-up water.

NO. 2 Produced water.

NO. 3

NO. 4

REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0465	1.0051		
pH When Sampled				
pH When Received	6.80	7.22		
B. carbonate as HCO ₃	964	1,830		
Supersaturation as CaCO ₃	75	120		
Undersaturation as CaCO ₃	---	---		
Total Hardness as CaCO ₃	5,400	800		
Calcium as Ca	1,400	144		
Magnesium as Mg	462	107		
Sodium and/or Potassium	23,244	2,308		
Sulfate as SO ₄	3,432	300		
Chloride as Cl	36,575	2,842		
Iron as Fe	0.27	7.5		
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	66,077	7,530		
Temperature °F				
Carbon Dioxide, Calculated				
Dissolved Oxygen, Winkler				
Hydrogen Sulfide	600	325		
Resistivity, ohms/cm at 72° F	0.126	0.935		
Suspended Solids				
Filtrate Solids as mg/l				
Volume Filtered, ml				
Calcium Carbonate Scaling Tendency	NONE	NONE		
Calcium Sulfate Scaling Tendency	NONE	NONE		

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks We see no evidence in the above results that would indicate any incompatibility when mixing these two waters in any proportion. Please contact us if we can be of any additional assistance in this regard.

EXHIBIT NO. 336

Case No. 8397

November 7, 1984

Geological Data
Injection Zones
in the
Proposed Eunice Monument South Unit

Penrose - Approx. depth 3,400'-3,800*, approx. 170 gross feet.

The Penrose is the lower portion of the Queen formation and overlies the Grayburg. The Penrose is composed of alternating layers of hard dolomite and sand lenses. The Penrose is productive of oil and/or gas, depending on structural position.

Grayburg - Approx. depth 3,500'-3,900*, approx. 490 gross feet.

The Grayburg is a massive dolomite with thin stringers of sand interspersed within it. The majority of oil production comes from intercrystalline porosity in the dolomite.

The range in depths to the top of the Grayburg is due to an asymmetrical anticlinal structure running NW to SE through the Eunice-Monument Pool. The structure dips steeply along the western and southern flanks and therefore the Grayburg top runs deeper, approximately 3,700'-3,900'. Along the axis and the gently dipping eastern flank of the anticline the Grayburg depths run at approximately 3,500-3,700 feet.

San Andres - Approx. depth 4,100'-4,500*, approx. 1,130 gross feet.

The San Andres is a massive dolomite with intercrystalline porosity, which lies directly below the Grayburg. The contact between the Grayburg and the San Andres is gradational and there is no clear marker for the top of the San Andres which can be traced across the field. The San Andres contributes very little if any oil production to the field and serves primarily as a source for injection make-up water and as a zone for salt water disposal.

There are no known faults cutting through the San Andres and Grayburg which would act as a conduit for gas, oil or injection water to seep into fresh water horizons above the injection zones in the Grayburg and San Andres.

* Depth depends upon structural position of the well.

EXHIBIT NO. 34a

Case No. 8397

Geological Data
Fresh Water Aquifers
in the Area of the
Proposed Eunice Monument South Unit
Lea County, New Mexico

The proposed Eunice Monument South Unit is located approximately 3/4 of a mile southwest of the Mescalero Ridge on the Eunice Plain.

The fresh water zones within the proposed Eunice Monument South Unit boundaries are the Quaternary alluvium, Pliocene Ogallala, and the Triassic Chinle and Santa Rosa formations.

The Quaternary aquifers are in recent sediments and are very localized in extent. They are made up of dune sands and sands filling channels or depressions in the underlying Ogallala. The sands are unconsolidated to semiconsolidated, fine to medium grained sands. They are found at the surface to a depth of approximately 100 feet.

The Pliocene Ogallala aquifer underlies the Quaternary alluvium and is present across the entire area but is not a major water source. The Ogallala is a calcareous unconsolidated sand containing some silt, clay and gravel. The Ogallala is found at approximately 60-125 feet.

The Triassic Chinle and Santa Rosa aquifers are the principal fresh water bearing zones in this area. They are both fine to medium grained sandstones interbedded with red clays and silt stones. At the northern end of the proposed unit, the Chinle is at a depth of approximately 50 feet and the Santa Rosa is at about 675 feet. At the southern end of the unit the Chinle is at approximately 200 feet and the Santa Rosa is at about 1000 feet.

Below the Santa Rosa are un-differentiated Permian and Triassic red beds. These "red beds" consist of red shales and red silty sandstones, and are not known to produce fresh water.

At the base of the Santa Rosa and/or the un-differentiated Permian and Triassic "red beds" is the Permian Rustler. At the top of the Rustler is an impermeable anhydrite bed, approximately 60-70 feet thick which provides an excellent barrier against contamination from brine waters in the Permian oil producing formations. The Rustler anhydrite is at approximately 1000 feet at the northern end of the unit and approximately 1400 feet at the southern end of the unit. There are no known fresh water horizons below the Rustler anhydrite.

For the protection of all fresh water zones within the unit boundary, cement will be circulated to surface around casing on all new injection wells and producing wells converted to injection wells.

Reference - Ground Water Report 6, USGS, 1961.

EXHIBIT NO. 36

Case No. 8397

November 7, 1984

Chemical Analysis of Fresh Water
Within The
Proposed Eunice Monument South Unit
Lea County, New Mexico

See attached water analysis results.

Sample No. 1 -Unit A Section 16, T-21-S, R-36-E
Livestock Water Source
Ogallala Formation
State Engineer's Well No. CP 00505

Sample No. 2 -Unit D Section 10, T-21-S, R-36-E
Domestic and Commercial Sale Source
Triassic Chinle Formation
State Engineer's Well No. CP 00147

Sample No. 3 -Unit K Section 36, T-20-S, R-36-E
Livestock Water Source
(Not on file with State Engineer's office)

Sample No. 4 -Unit O Section 17, T-21-S, R-36-E
Livestock Water Source
Ogallala Formation
(Not on file with State Engineers Office)

EXHIBIT NO. 37

Case No. 8397

November 7, 1984 -

700 W INDIANA
MIDLAND TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

TO Mr. Sean Chapman
P.O. Box 670, Hobbs, NM

LABORATORY NO. 284225
SAMPLE RECEIVED 2-15-84
RESULTS REPORTED 2-20-84

COMPANY Gulf Oil Exploration & Production LEASE _____

FIELD OR POOL Company

SECTION _____ BLOCK _____ SURVEY _____ COUNTY _____ STATE _____

SOURCE OF SAMPLE AND DATE TAKEN

NO. 1 Fresh water (sample #1).

NO 3 Fresh water (sample #2).

NO. 2
Fresh water (sample #3).

NC 4

REMARKS: _____

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0047	1.0020	1.0022	
pH When Sampled				
pH When Received	7.56	8.20	8.27	
Bicarbonate as HCO ₃	212	494	476	
Supersaturation as CaCO ₃				
Undersaturation as CaCO ₃				
Total Hardness as CaCO ₃	1,680	75	68	
Calcium as Ca	376	16	15	
Magnesium as Mg	180	8	7	
Sodium and/or Potassium	744	289	413	
Sulfate as SO ₄	1,492	186	300	
Chloride as Cl	1,115	60	138	
Iron as Fe	0.31	1.3	1.3	
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	4,119	1,065	1,391	
Temperature °F				
Carbon Dioxide, Calculated				
Dissolved Oxygen, Winter				
Hydrogen Sulfide	0.0	0.0	0.0	
Resistivity, ohms/cm at 77° F.	1.60	8.10	5.50	
Suspended Solids				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Carbonate, as CO ₃	0	12	42	

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks Please contact us if we can be of any assistance in interpretation of the above results.

UNICHEM INTERNATIONAL

401 NORTH LEECH

P.O. BOX 1499

MORRIS, NEW MEXICO 88210

COMPANY : GULF OIL
DATE : 9-28-84
FIELD LEASE & WELL : SECTION 17-T215-R36E, UNIT O
SAMPLING POINT : WELLHEAD - FRESH WATER SAMPLE
DATE SAMPLED : 9-27-84

SPECIFIC GRAVITY = 1
TOTAL DISSOLVED SOLIDS = 1055
PH = 7.21

		ME/L	MG/L
CATIONS			
CALCIUM	(CA) +2	4.4	88.1
MAGNESIUM	(MG) +2	3.8	46.1
SODIUM	(NA) CALC.	7.2	167.
ANIONS			
BICARBONATE	(HCO3) -1	4.6	280
CARBONATE	(CO3) -2	0	0
HYDROXIDE	(OH) -1	0	0
SULFATE	(SO4) -2	5.8	282.
CHLORIDES	(CL) -1	5	190
DISSOLVED GASES			
CARBON DIOXIDE	(CO2)	NOT RUN	
HYDROGEN SULFIDE	(H2S)	NOT RUN	
OXYGEN	(O2)	NOT RUN	
IRON (TOTAL)	(FE)		
BARIUM	(BA) +2	0	1.4
MANGANESE	(MN)	NOT RUN	.4

ONIC STRENGTH (MOLAL) = .023

Proposed Eunice Monument South Unit
Lea County, New Mexico

Affirmative Statement

Gulf Oil Corporation has examined available geological and engineering data and finds no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

**EMSU # 679 Conversion to Injection
Eunice Monument South Unit
Lea County, NM**

Surface Land Owners

Ms. Billie Sartin
223 Moore St.
Sulfur Springs, TX 75480

Offset Operators

Conoco, Inc.
One Post Oak Central
2000 Post Oak Blvd., Suite 100
Houston, TX 79705-4500

Arco Permian
P.O. Box 1610
Midland, TX 79702

Texaco E&P, Inc.
P.O. Box 3900
Midland, TX 79702

Collins & Ware, Inc.
508 W. Wall, Suite 1200
Midland, TX 79701

D. Hartman
500 N. Main St.
Midland, TX 79701



Chevron U.S.A. Production Company
P.O. Box 1150
Midland, TX 79702

September 16, 1997

**REQUEST TO PUBLISH
LEGAL NOTICE**

Hobbs News-Sun
201 N. Thorp
Hobbs, NM 88240

Attention: Classified Department

Chevron U.S.A. Production Company requests that you publish the attached notice in your newspaper, one time only, as soon as possible.

Please mail the invoice to the letterhead address, attention: Tracy Love. Also, please attach a copy of the notice as run in your newspaper and an affidavit certifying publication of the attached notice and the date of publication.

Your prompt assistance in this matter will be greatly appreciated. Questions may be directed to Mr. Tracy Love at (915) 687-7645.

Sincerely,

A handwritten signature in cursive script that reads "Tracy Love".

Tracy Love
Petroleum Engineer

TL/ndm
Attachment

LEGAL NOTICE
(DATE)

Chevron U.S.A. Production Company has applied to the Oil Conservation Division of the State of New Mexico for approval to convert #679 to an injection well in their Eunice Monument South Unit. This well is designed to improve the efficiency of the waterflood pattern and enhance the production of the EMSU secondary recovery project. This well is located in Section 8, Unit D, Township 21 South, Range 36 East, NMPM, Lea County, New Mexico. Water will be injected into the unitized interval of the Eunice Monument Grayburg-San Andres Pool which has an upper limit of 100 feet below mean sea level of the top of the Grayburg formation, whichever is higher, to a lower limit being the base of the San Andres formation. Injection will be at an expected maximum rate of 1500 barrels of water per day and an expected maximum pressure of 750 pounds per square inch. Persons wishing to contact Chevron U.S.A. should direct their inquiries to Tracy Love, Chevron U.S.A., P. O. Box 1150, Midland, TX 79702, phone (915) 687-7645.

Interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, NM 87501 within 15 days of this notice.

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

I, KATHI BEARDEN

Publisher

of the Hobbs Daily News-Sun, a
daily newspaper published at
Hobbs, New Mexico, do solemnly
swear that the clipping attached
hereto was published once a
week in the regular and entire
issue of said paper, and not a
supplement thereof for a period.

of 1
_____ weeks.

Beginning with the issue dated

September 23 1997

and ending with the issue dated

September 23 1997

Kathi Bearden

Publisher

Sworn and subscribed to before

me this 23rd day of

September 1997

Jodi Benson

Notary Public.

My Commission expires
October 18, 2000
(Seal)

This newspaper is duly qualified
to publish legal notices or adver-
tisements within the meaning of
Section 3, Chapter 167, Laws of
1937, and payment of fees for
said publication has been made.

LEGAL NOTICE

September 23, 1997

Chevron U.S.A. Production
Company has applied to the
Oil Conservation Division of
the State of New Mexico for
approval to convert #679 to
an injection well in their Eu-
nice Monument South Unit.
This well is designed to im-
prove the efficiency of the wa-
terflood pattern and enhance
the production of the EMSU
secondary recovery project.
This well is located in Section
8, Unit D, Township 21 South,
Range 36 East, NMPM, Lea
County, New Mexico. Water
will be injected into the uni-
tized interval of the Eunice
Monument Grayburg-San An-
dres Pool which has an upper
limit of 100 feet below mean
sea level of the top of the
Grayburg formation, whichev-
er is higher, to a lower limit
being the base of the San An-
dres formation. Injection will
be at an expected maximum
rate of 1500 barrels of water
per day and an expected
maximum pressure of 750
pounds per square inch. Per-
sons wishing to contact Chev-
ron U.S.A. should direct their
inquiries to Tracy Love, Chev-
ron U.S.A., P.O. Box 1150,
Midland, Tx 79702, phone
(915) 687-7645.
Interested parties must file
objections or requests for
hearing with the Oil Conser-
vation Division, P.O. Box
2088, Santa Fe, NM 87501
within 15 days of this notice.
#15433

01102480000

02509754

Chevron U.S.A. Production Comp
P.O. Box 1150
a/c#
MIDLAND, TX 79702

STATE OF NEW MEXICO
DEPARTMENT OF ENERGY AND MINERALS
OIL CONSERVATION COMMISSION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION FOR THE PURPOSE OF
CONSIDERING:

CASE No. 8398
Order No. R-7766

APPLICATION OF GULF OIL CORPORATION
FOR A WATERFLOOD PROJECT, LEA
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This case came on for hearing at 9:00 A.M. on November 7, 1984, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission".

NOW, on this 27th day of December, 1984, the Commission, a quorum having been present, having considered the testimony and the record and being otherwise fully advised in the premises,

FINDS THAT:

(1) Due public notice has been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) The applicant, Gulf Oil Corporation, in Commission Case 8398, seeks authority to institute a waterflood project in its Eunice Monument South Unit, by the injection of water into the unitized interval which shall include the formations which extend from an upper limit of 100 feet below mean sea level or the top of the Grayburg formation, whichever is higher, to a lower limit being the base of the San Andres formation in the proposed unitized area, all as shown on Exhibit "A" attached to this order.

(3) The subject Commission Case 8398 was consolidated for hearing with Commission Cases 8397 and 8399.

(4) Gulf proposes to utilize an 80-acre five spot injection pattern using a well number system and proposed

(13) The subject application should be approved and the project should be governed by the provisions of Rule 701 through 708 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Gulf Oil Corporation, is hereby authorized to institute a waterflood project in the Eunice Monument South Unit Area for the acreage described on Exhibit "A" attached hereto and made a part hereof, by the injection of water into the unitized interval which shall include the formations which extend from an upper limit described as 100 feet below mean sea level or at the top of the Grayburg formation, whichever is higher, to a lower limit being the base of the San Andres formation said geologic markers having been as found to occur at 3,666 feet to 5,283 feet, respectively, in the Continental Oil Company's Meyer B-4 Well No. 23 located 660 feet from the South line and 1980 feet from the East line of Section 4, Township 21 South, Range 36 East, Lea County, New Mexico.

(2) Applicant, Gulf Oil Corporation, is hereby authorized to utilize for injection purposes the wells identified and described on Exhibit "B" attached hereto and made a part hereof.

(3) The injection wells herein authorized and/or the injection pressurization system shall be so equipped as to limit injection pressure at the wellhead to no more than 0.2 psi per foot of depth from the surface to the top injection perforation, provided however, the Division Director may authorize a higher surface injection pressure upon satisfactory showing that such pressure will not result in fracturing of the confining strata.

(4) Injection into each of said wells shall be through plastic or cement-lined tubing, set in a packer which shall be located as near as practicable to the uppermost perforations, or, in the case of open-hole completions, as near as practicable to the casing-shoe; that the casing-tubing annulus shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention attracting leak detection device.

(5) Prior to injection into any well located within one-half mile of any of the five wells listed on Exhibit "C" attached to this order, the applicant shall consult with the supervisor of the Oil Conservation Division's district office at Hobbs to develop a plan acceptable to

-5-
Case No. 8398
Order No. R-7766

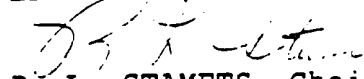
DONE at Santa Fe, New Mexico, on the day and year
hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

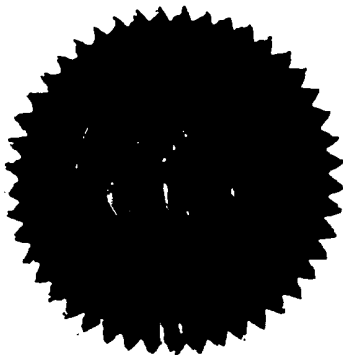
JIM BACA, Member



ED KELLEY, Member



R. L. STAMETS, Chairman and
Secretary



S E A L

LEA COUNTY, NEW MEXICO

UNIT WELL NO.	UNIT LETTER	SECTION-TOWNSHIP-RANGE			NEW WELL
			SOUTH	EAST	
101	C	30	20	37	N
102	A	25	20	36	
104	C	25	20	36	
106	E	25	20	36	
108	G	25	20	36	
110	E	30	20	37	
112	G	30	20	37	
114	I	30	20	37	
116	K	30	20	37	
118	I	25	20	36	
120	K	25	20	36	
122	M	25	20	36	N
124	O	25	20	36	
126	M	30	20	37	
128	O	30	20	37	
130	A	32	20	37	
132	C	32	20	37	
134	A	31	20	37	
136	C	31	20	37	
138	A	36	20	36	
140	C	36	20	36	
142	E	36	20	36	N
144	G	36	20	36	
146	E	31	20	37	
148	G	31	20	37	
150	E	32	20	37	
152	G	32	20	37	
154	I	32	20	37	
156	K	32	20	37	
158	I	31	20	37	
160	K	31	20	37	
162	I	36	20	36	
164	K	36	20	36	
166	M	36	20	36	
168	O	36	20	36	
170	M	31	20	37	
172	O	31	20	37	
174	M	32	20	37	
176	O	32	20	37	

CASE NO. 8398
ORDER NO. R-7766
EXHIBIT "B"

LEA COUNTY, NEW MEXICO

249	T	6	21	36
251	V	6	21	36
253	X	6	21	36
255	V	5	21	36
257	X	5	21	36
259	V	4	21	36
261	X	4	21	36
263	V	3	21	36
265	X	3	21	36
267	V	2	21	36
269	X	2	21	36
271	B	11	21	36
273	D	11	21	36
275	B	10	21	36
277	D	10	21	36
279	B	9	21	36
281	D	9	21	36
283	B	8	21	36
285	D	8	21	36
287	B	7	21	36
289	D	7	21	36
291	F	7	21	36
293	H	7	21	36
295	F	8	21	36
297	H	8	21	36
299	F	9	21	36
301	H	9	21	36
303	F	10	21	36
305	H	10	21	36
307	F	11	21	36
309	H	11	21	36
310	L	12	21	36
312	J	11	21	36
314	L	11	21	36
316	J	10	21	36
318	L	10	21	36
320	J	9	21	36
322	L	9	21	36
324	J	8	21	36

CASE NO. 8398
ORDER NO. R-7766
EXHIBIT "B"

LEA COUNTY, NEW MEX.

406	J	17	21	36
408	L	17	21	36
410	J	18	21	36
412	L	18	21	36
414	N	18	21	36
416	P	18	21	36
418	N	17	21	36
420	P	17	21	36
422	N	16	21	36
424	P	16	21	36
426	N	15	21	36
428	P	15	21	36
430	N	14	21	36
432	P	14	21	36
434	B	22	21	36
436	D	22	21	36
438	B	21	21	36
440	D	21	21	36
442	F	21	21	36
444	H	21	21	36
446	F	22	21	36
448	H	22	21	36
450	J	22	21	36
454	J	21	21	36
456	L	21	21	36
452	L	22	21	36

CASE 8398
ORDER NO. R-8398
EXHIBIT "B"